HINDSIGHT
Journal of Optometry History

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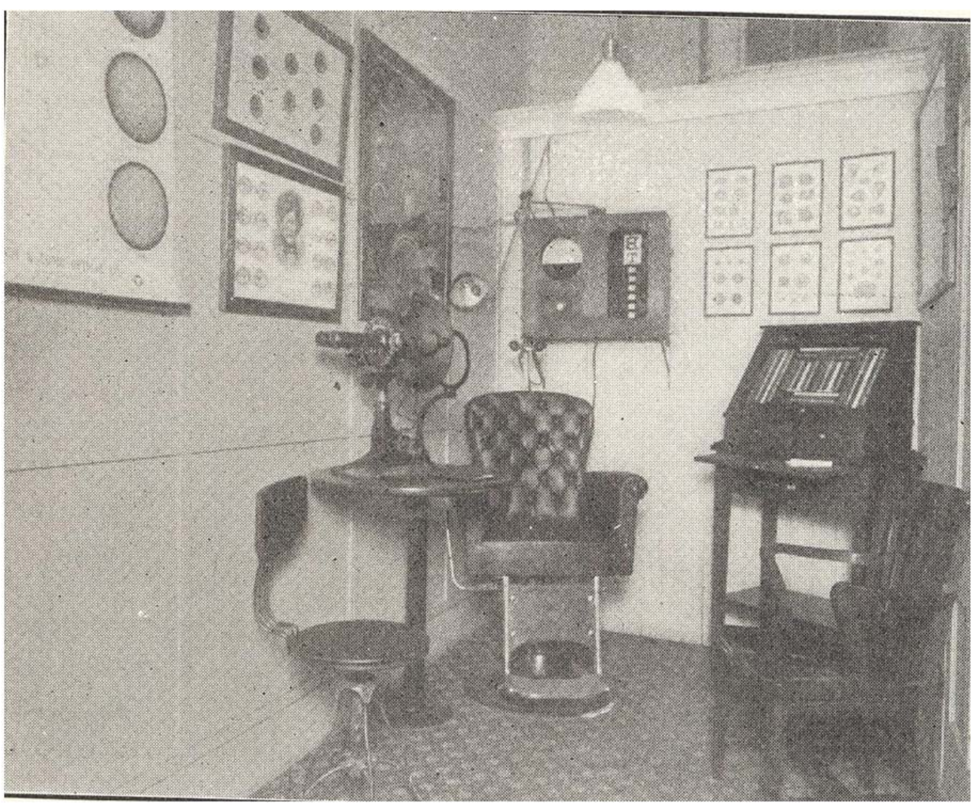

Hindsight: Journal of Optometry History publishes material on the history of optometry and related topics. As the official publication of the Optometric Historical Society, Hindsight: Journal of Optometry History supports the purposes and functions of the Optometric Historical Society.

The purposes of the Optometric Historical Society, according to its by-laws, are:
● to encourage the collection and preservation of materials relating to the history of optometry,
● to assist in securing and documenting the recollections of those who participated in the development of optometry,
● to encourage and assist in the care of archives of optometric interest,
● to identify and mark sites, landmarks, monuments, and structures of significance in optometric development, and
● to shed honor and recognition on persons, groups, and agencies making notable contributions toward the goals of the society.

The official publication of the Optometric Historical Society, published quarterly since its beginning, was previously titled:
Newsletter of the Optometric Historical Society, 1970-1991 (volumes 1-22), and
Hindsight: Newsletter of the Optometric Historical Society, 1992-2006 (volumes 23-37).
Use of the current title, Hindsight: Journal of Optometry History, began in 2007 with volume 38, number 1.

On the cover: A photograph of an examining room in a 1913 optometry office, from *Optical Journal and Review of Optometry*, January 30, 1913, volume 31, number 6, page 348. For more information on this 1913 optometry office, see the article in this issue on optometry one hundred years ago starting on page 5.

OHS website: www.opt.indiana.edu/ohs/opthohiso.html

HINDSIGHT: Journal of Optometry History
January, 2013
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Journal subscriptions are registered by joining the Optometric Historical Society. The cost of an institutional or library subscription is the same as for personal membership.

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

OHS News

Thirty-three ballots were submitted for election of members of the OHS Board of Trustees for terms beginning January, 2013 and ending December, 2016. Irving Bennett and Chuck Haine were re-elected to the Board. The Board members then voted among themselves, as outlined in OHS by-laws, for officer positions. The duly elected OHS officers for 2013 (with the year of expiration of their term on the Board and their email addresses) are:

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John Amos becomes the 13th president of the Optometric Historical Society. The previous presidents have been:
Henry W Hofstetter, 1970-1974
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James P. Leeds, 1980-1984
Jerome J. Abrams, 1985-1988
T. David Williams, 1989-1990
Meredith W. Morgan, 1991-1995
Charles Haine, 1996 and 2005-2006
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Douglas K. Penisten, 2001-2004
Jay M. Enoch, 2005
Melvin Wolfberg, 2007-2008
Irving Bennett, 2009-2012

More on the Cyrus Bass Lawsuit: Correcting an Error and Adding More Information

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More has probably been written in the past year about the lawsuit between optometrist Cyrus Bass versus the American Medical Association than was published when the suit was in progress. Floyd Mizener and I contacted several optometrists who knew Dr. Bass and received from them some salient comments of what went on in those tumultuous days.

Published remarks attributed to Dr. Al Rosenbloom in the October, 2012 issue of *Hindsight*[1] were actually made by Dr. Al Bucar, who was President of the Illinois Optometric Association (IOA) in 1968-1969 at the time. Here is what Dr. Bucar actually said:

"I met with Cyrus Bass in 1968 at his office. He had many supporters that were members of IOA. I felt it was important to them and to maintain unity within IOA that I meet with him. After introducing ourselves he left the meeting briefly. I had the feeling he was taping our conversation so I was guarded in my comments during our meeting. I was hoping to convince him that he could be more effective within organized optometry than outside. He did join IOA for a year; however he never attended an IOA meeting or function during that time. He was very intelligent and egocentric with a Messianic air that proclaimed that he had the answer to all of optometry's problems. We had a friendly, lively discussion for over an hour.

"Later, when I served on the AOA Board as trustee and President, Ellis Lyons, who was General Counsel to the AOA, was dismissive of Bass' impact on the case citing AOA's activities quietly working with the Justice Department. I believe that the Cyrus Bass case was important in redefining optometry/medical relations by bringing the case to the forefront."[2] We hope that this sets the record straight.

Bass Was Not Alone! These Were His Helpers

It was conventional wisdom that optometrist Cyrus Bass acting alone in his history making lawsuit against the American Medical Association. Previous reports on this have appeared in *Hindsight*; no names of those who rose to support Bass have thus far been published.

Presiding Judge Abraham L. Marovitz agreed to turn the individual lawsuit into a class action suit against the AMA provided other optometrists who had like grievances joined in the suit. To this end, five Illinois self-employed practicing optometrists joined

Dr. Cyrus Bass in the suit as plaintiffs. They were: Dr. Wayne T. Bensman, Dr. Alexander Horvath, Dr. Robert Klein, Dr. Max Linn, and Dr. Theodore T. Sypniewski.

The International Association of Boards of Examiners in Optometry (IAB) tried to work with Cyrus Bass with the help of its General Counsel Richard A. Billups, Jr., Jackson, MI. Mr. Billups wrote to Judge Marovitz in January 1966 presenting a request and petition to intervene in the Bass case. Those optometrists, all members of the IAB, who were named as interveners were: Dr. Jack T. Keith, Akron, OH; Dr. Joseph T. Abboud, Rice Lake, WI; Dr. Karl O. Hoefert, Casa Grande, AZ; Dr. N. Eric Muir, Cleveland, MI; and Dr. Frank E. Houston, Lexington, MI.

And while we are at it naming names, here are the names of the Chicago area ophthalmologists named with the American Medical Association as defendants: Dr. Carl Apple; Dr. John G. Bellows; Dr. Paul Hurwitz; Dr. Perry Ross; Dr. Theodore Shapira; Dr. Paul Sternberg; Dr. Robert G. Taub; and Dr. Theodore N Zekman.

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Some Notes on Optometry One Hundred Years Ago

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A leading optometry periodical one hundred years ago was *Optical Journal and Review of Optometry*. It was published weekly and contained news items, opinion pieces, and educational articles. To get an idea of what was going on in optometry one hundred years ago, I perused the 1,602 pages of volume 31, which included 26 issues from December 26, 1912, to June 19, 1913. The following is a sampling of items that caught my eye.

Licensure Requirements

The first American optometry licensure law was passed in 1901. By 1924, all states and the District of Columbia had optometry licensure laws. The April 24, 1913, issue of *Optical Journal and Review of Optometry* listed 30 states that had by then achieved optometry laws.[1] Elsewhere there is a summary of the requirements for licensure in 28 states.[2] Fourteen states had no requirements for preliminary education, while in another fourteen states two years of high school or its equivalent were required.

The requirements for professional training varied. Thirteen states had no stated requirement for professional training. Eight states required either three years of study in an optometrist's office or graduation from a school of optometry, with one of those states specifying that the school had to be at least twelve months duration. Two states required two years of experience as an assistant or graduation from a school of optometry. One state required two years of study, without obvious explanation of the nature of the study, or graduation from an optometry school. Four states required graduation from an optometry school, with one of those states specifying that the school program be a two year course.

The summary of licensure requirements also mentioned whether a licensing test was needed. For 20 states, it simply stated that an examination was required. In three states, an examination was given, but the examination could be waived if the applicant had been in practice at the time of passage of the licensure law. The length of practice required varied in those three states, from six months to two years to five years. Two states had an examination or issued licenses to persons who had a license in another state with similar requirements. Two states required either an examination or graduation from an acceptable optometry school. One state simply stated that they licensed "graduates from a regularly chartered optical school."

A 1913 Optometry Office

One article headed "Optometrist's New and Handsome Store" noted that an optometrist named Lee M. Cox opened "finely appointed optical quarters…fitted throughout with the most modern equipment" in Gloucester, Massachusetts.[3] Two photographs accompanied the article, which stated that: "The examining room contains a Globe improved ophthalmic chair, reverse cabinet, ophthalmic table, one position C-I Ophthalmometer, trial case and trial case stand. The trial case is one of the most improved on the market, and includes many novel features, such as square prism, lenses numbered on both sides of the handle, and dotted axis on cylinders. A number of optical charts are displayed on the wall.

"The mechanical outfit includes a work bench fitted with Gem frameless edging machine, lens cutter and drill, buff head, etc. In close proximity are the Opto sectional cabinets and Lloyd Axometer, for determining the sizes and focus of all cylinder lenses." It is also noted that the office had "a roll top desk with desk chair, side chairs and settee to match." The article included a photograph of Lee Cox's examination room (see Figure 1).

Figure 1. A photograph of the 1913 optometry examining room of Lee M. Cox, from *Optical Journal and Review of Optometry*, January 30, 1913, volume 31, number 6, page 348.

Accommodation and Binocular Vision

There were quite a few articles on topics such as measurement of phorias and prescription of prism. In one of them, J. Gould of Chicora, Pennsylvania, presented some cases in which prisms were prescribed.[4] In one of them, a 74 year old former soldier, who had been struck in the head with a shell fragment in the battle of Gettysburg, complained of head pain and diplopia. Gould prescribed base-out prisms which relieved the diplopia, and the old soldier subsequently referred many patients to Gould.

Several articles addressed the topic of eyestrain. One of the articles was based on a presentation made by J.A. Haustein of Red Wing, Minnesota, at an alumni meeting of the Northern Illinois College.[5] Haustein described convergence exercises he used for the relief of eyestrain. The training used base-out prisms, gradually increasing their power during a session and from session to session. Haustein's goal was to get patients up to 50 "degrees" of convergence and finally to be able to fuse their maximum amount of prism in one "jump." Haustein also described a case where a man could read for only a few minutes before falling asleep. The convergence work allowed him to be "able to read over an hour at a time without getting sleepy."

I found it interesting that one writer appeared to recognize what today we would call a high lag of accommodation. Despite the fact that the "usual assumption" at that time was "that accommodation is exact within its limits.…dynamic tests, both subjective and objective, show that this is often not true….accommodation…may be less than it should be with consequent blurring, which is not completely overcome, the mind preferring the slight blur to the extra effort required to get an absolutely perfect focus."[6] The writer referred to it as sluggish accommodation, and said that it "should not be confounded with decreased amplitude of accommodation."[6] We could wonder whether the "dynamic tests" that the writer referred to included dynamic retinoscopy and what the subjective dynamic tests were. The writer suggested that glasses for near use could relieve eyestrain in such cases.

Optometry at Columbia University

The first students entered the optometry school at Columbia University in 1910.[7] This was a milestone for optometry as it was the first university optometry school. The second class of students to complete the two year program received certificates of completion in the spring of 1913. Eight of the 21 graduates were from the state of New York; four were from Massachusetts; two were from New Jersey; and one each were from California, Colorado, Michigan, North Carolina, Pennsylvania, and Rhode Island. One was from England.[8]

One news item from Columbia University listed the books used there in the optometry courses: Principles of Refraction in the Human Eye, by Burnett; A System of Ocular Skiametry, by Cross; Ophthalmic Lenses, by Prentice; Refractive and Motor Mechanisms of the Eye, by Souter; Physics for College Students, by Carhart; Practical Exercises in Light, By Clay; Light for Students, by Edser; The Human Body, by Martin; Medical Dictionary, by Gould; Optical Dictionary, by Lewis; Diseases of the Eye, by May; and Refraction and Accommodation of the Eye, by Landolt.[9]

History of *Optical Journal and Review of Optometry*

The January 16, 1913 issue was an anniversary issue, and it opened with a short recitation of the history of the journal.[10] In January, 1891, the first issue of an American publication entitled *The Optician* appeared. In March, 1895, its name was changed to *The Optical Journal*. A periodical named *The Focus* started in 1900 or 1901 and merged with *The Optical Journal* in 1902. In March, 1904, *The Optical Journal* changed from a monthly to a weekly publication.

Another periodical, *The Optical Instrument*, which began operation in 1905, was taken over by *The Optical Journal* in 1906. In 1907, *The Jeweler's Circular-Weekly*, which had started devoting space to optical matters in the early 1880s, initiated a publication named *The Optical Review*. This latter publication merged with *The Optical Journal* to form *The Optical Journal and Review of Optometry*, which had its first issue appear January 9, 1910.

It was noted that from its beginning, *The Optical Journal* worked in the interest of optometry in promoting organizations and societies of optometrists and in supporting the movement toward optometry licensure laws.

Women in Optometry

An article by Clara M. Sweitzer, of Richmond, Indiana, discussed the work of women in optometry.[11] She stated: "A year ago, a number of women responded to an invitation from *The Optical Journal and Review* to express their opinions on [the position of women in optometry]. Many ideas were advanced, good ones all of them, but one upon which all agreed was woman's native talent for this particular line of endeavor, especially her adaptability in caring for the eyes of women and children."

Most of Sweitzer's article concerned the care of children's vision by women optometrists and observations of some of her own experiences. She closed the article as follows: "The woman optometrist has 'made good' and she has come to stay. As the years roll by she will be followed by an ever-increasing number of her efficient sisters, and we hope that some may one day hold positions of prominence, rightfully earned, as great as some of our leading men."

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Biographical Notes on James P.C. Southall

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Abstract
James P.C. Southall (1871-1962) was a physics professor at Columbia University from 1914 to his retirement in 1940. Throughout that time he was in administrative charge of the optometry school at Columbia. This paper provides a biographical sketch of Southall and brief descriptions of the optics books that he authored.

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

James Powell Cocke Southall was born April 4, 1871 in Norfolk, Virginia. He received B.A. and M.A. degrees from the University of Virginia in 1891 and 1893, respectively.[1] He taught physics and mathematics at Miller Manual Training School in Albemarle, Virginia from 1893 to 1898. Following a brief period of time as a Fellow at Johns Hopkins University, he was Prendergast Professor of Physics at Hobart College in Geneva, New York from 1899 to 1901. From 1901 to 1914 he taught physics at Alabama Polytechnic Institute in Auburn, Alabama.

In 1914, Southall took a position as Assistant Professor of Physics at Columbia University. His academic advancement at Columbia included promotion to full Professor in 1922. From his initial appointment at Columbia to his retirement in 1940, he was director of the optometry school at Columbia. He also taught optics to optometry students.

Charles Sheard characterized Southall as “a true friend and supporter” of optometry.[3] That conclusion can be evidenced by the statement that Southall made in a letter to Sheard about optometry that: “I believed in it from the beginning…”[3] In a 1952 letter to a former student, Southall wrote that: “Optometry, as I regard it, is a noble profession, a high calling.”[4]

Writing in 1986, a former student of Southall’s recalled that: “His office was guarded by a rather formidable secretary; nevertheless, he was accessible to students…

“He was somewhat tall, mostly grey and balding with small wrinkled eyes, and a peculiar habit of scratching his left ear with his right hand. I admired his easy walk and relaxed manners, to me, then, the epitome of a southern gentleman. His Virginia accent was pronounced but not too heavy.

“He seemed to keep aloof of administrative and clinical problems. These were relegated to his associate, Professor Clifford LeRoy Treleaven and staff. I never remember him visiting laboratories, examination rooms, or clinics. His domain was the lecture podium in the classroom. His soft mellifluous voice belied the difficult subject he expounded.

“I think of Professor Southall kindly. His vision of all professions, including optometry, as servants of mankind was lofty and ideal, and still to be completely realized.”[5]

Robert Bannon[6] said that Southall had a “kindly nature” and that he was “a true friend and advisor to his students.” Sheard described Southall as “a genuine scholar” and said that his writings showed “meticulous care and striving for accuracy which are the earmarks of the real scientist.”[3]

Southall was president of the Optical Society of America in 1921 and for a while was associate editor of the *Journal of the Optical Society of America*.[2] He published at least 25 articles in that journal.[1] Southall was the editor of the English translation of the third German edition of Helmholtz’s *Physiological Optics.* The English translation was published in 1924 by the Optical Society of America. Southall received the Distinguished Service Foundation Medal in optometry in 1930.[3]

Southall published three major optics books. The first of these was *The Principles and Methods of Geometrical Optics, Especially as Applied to the Theory of Optical Instruments*. The first edition was published in 1910 and a second edition (626 pages) in 1913. Its coverage of geometrical optics included refraction, reflection, prisms, lens systems, astigmatism, optical imagery, spherical aberration, color phenomena, chromatic aberration, field of view, illumination, and brightness. In the preface to the second edition, Southall stated that he wrote it to supply an English language book containing discussion of modern developments in theory and construction of optical instruments and to rekindle “among the English-speaking nations interest in a study not only abundantly worthy for its own sake and undeserved neglected, but still capable, under good cultivation, of yielding results of far-reaching importance in nearly every field of scientific research.”[7]

The first edition of *Mirrors, Prisms, and Lenses: A Text-book of Geometrical Optics* was published in 1918 (579 pages). A review said that other geometrical optics books of the time lacked the completeness of Southall.[8] In the preface, Southall noted that the book was an “outgrowth” of his optics lectures at Columbia.[9] A second edition was published in 1923 and a third edition in 1933. The third edition expanded to 806 pages with the addition of a chapter on the microscope and a chapter on physical and physiological optics. In a contemporary review, Ryer and Hotaling[10] considered the latter chapter to be of “utmost significance” because of “the recognition of the need for and the inclusion of a connecting link between geometrical and physiological optics.” This book was known for its formal style.[1] It was the most widely used geometrical optics textbook in the optometry schools of its time, and it was one of forty books receiving multiple survey nominations for most important twentieth century optometry books.[11]

In 1937, Southall published *Introduction to Physiological Optics*. This book was also based on his lectures at Columbia. A review said that this book "like all of his writings is done in the thorough fashion which characterizes his work."[12] Topics included ocular structure and function, ocular optics, spectacle lens optics, refractive errors, eye movements, accommodation and convergence, stereopsis, stereoscopes, retinal function, dark adaptation, color vision, colorimetry, and temporal aspects of vision. A Dover reprint of this book appeared in 1961, and a Dover reprint of *Mirrors, Prisms, and Lenses* was published in 1964.

Southall retired from Columbia in 1940. He lived most of his retirement years in Charlottesville, Virginia. In 1947, Southall wrote a one page introduction to the University of Virginia's catalog of the Adolph Lomb collection of optics books and journals. The catalog listed over a thousand items from the eighteenth, nineteenth, and twentieth centuries.[13,14] Henry Lomb, Adolph's brother, had donated Adolph's collection to the University of Virginia at Southall's suggestion.[15] Southall also donated books and papers to the University of Virginia.[1] Southall wrote two books of memoirs in retirement, one entitled *In the Days of my Youth, When I was a Student in the University of Virginia, 1888-1893*, published in 1947, and another entitled *Memoirs of the Abbots of Old Bellevue*, published in 1955. Southall died on August 23, 1962, in Bronxville, New York.

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Book Review: The Telescope: A Short History

The Telescope: A Short History. Richard Dunn. London, UK: Conway, 2009. 192 pages. ISBN: 9781844861477. Hardcover, $17.95.

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This book presents the story of the telescope from its beginnings to its various forms in the present day, along with its technical and popular uses and its impact on scientific discovery. The book also examines the effect of the telescope on the "popular imagination" and how people thought about the universe. There is some emphasis on developments in England. The author's educational background is in the history of science. He is located at the Royal Observatory, Greenwich, and is the Curator of the History of Navigation at the National Maritime Museum.

Leading into the story of the telescope is a brief discussion of the development of lenses, mirrors, glass making and astronomy before the telescope. The book mentions the patent of Hans Lipperhey for a telescope in 1608, but suggests that the first telescope may have been made before that.

The quality of the imagery of the first telescopes was limited by the quality of lenses made at the time. Galileo was able to construct good telescopes by searching for the very best lenses available. Many doubted his observations because they could not see what he saw with his better quality telescopes.

As we might recall from our basic optics, a Galilean telescope was made with one convex lens and one concave lens. A Keplerian telescope was made with two convex lenses and had an inverted image. In the mid 17th century, Schyrle added lenses between the two convex lenses in a Keplerian telelscope so that the image wasn't inverted. This came to be known as a terrestrial telescope.

The earliest telescopes were refracting telescopes. Among the pioneers in reflecting telescopes was Isaac Newton. In the late 18th century, Herschel siblings William (1738-1822), Caroline (1750-1848), and Alexander (1745-1821) built large reflecting telescopes that allowed them to study not only the positions and motions of astronomical objects, but also, for the first time, their nature. William Herschel also discovered the planet Uranus.

Many 18th century English instrument makers were not only good craftsmen, but also understood the theoretical aspects of their work. The author gives John Dollond (1707-1761) as an example. In 1752, John and his son Peter (1731-1820) opened a shop called the Golden Spectacles and Sea Quadrant. Dollond patented an achromatic lens and presented a paper to the Royal Society in 1758. Telescopes were made with the new lens. The Dollonds' company became well known for making hand-held telescopes for popular and military use.

In 1854, Léon Foucault discovered a new method of adding silver to glass, increasing the amount of light reflected from telescope mirrors. Binoculars came into more popular and military use after 1854, when Ignazio Porro patented a prismatic system that folded the light path, eliminating the need for draw tubes and allowing a good field of view. Other nineteenth century developments included establishment of observatories around the world, construction of bigger and bigger telescopes, and application of photography and spectroscopy to the use of telescopes. Examples of the impact of telescopes on culture and literary works include the Martian "canals" suggested by Percival Lowell and the stories written by H.G. Wells.

In the 20th century, telescopes, binoculars, and similar optical devices became common in bird watching, amateur astronomy, surveillance, military applications, and other uses. Technical improvements in the 20th century included larger mirror systems, various applications of computers, use of photo-electric cells, adaptive optics, radio astronomy, and launch of telescopes into space.

The book includes more than 60 illustrations, a time line, a glossary, a further reading list, and an index. This little book gives a nice overview of the history of telescopes and their applications.

Instructions to Authors

Hindsight: Journal of Optometry History is the official publication of the Optometric Historical Society (OHS), and, as such, supports and complements the purposes and functions of OHS. The journal publishes historical research, articles, reports, book reviews, letters to the editor, and article reviews. The topics of material published in the journal include: history of optometry; history of eye and vision care; history of spectacles, contact lenses, and other corrective devices; history of vision therapy, low vision care, and other vision care modalities; history of vision science; biographical sketches of persons who have worked in or influenced optometry and/or vision science; recollections or oral histories of optometrists and persons who have worked in optometry and optometry-related fields; and related topics.

Material submitted for publication should be sent to the editor: David A. Goss, School of Optometry, Indiana University, Bloomington, IN 47405; dgoss@indiana.edu. Material may be submitted by postal service or by email, although the preferred mode of reception of submissions is a Word document in an email attachment.

Authors who wish to use direct quotations of substantial length, tables, figures, or illustrations from copyrighted material must obtain written permission from the publisher or copyright owner. Short quotations may be acknowledged by quotation marks and a reference citation.

Submissions should include a title, the names, degrees, postal addresses, and email addresses of the authors. Abstracts are not recommended for short articles. Abstracts and key words are recommended but not necessary for longer articles.

Tables and figures should be numbered sequentially in the order that the mention of them appears in the text, e.g., Table 1, Table 2, Figure 1, Figure 2. Each table and figure should have mention or discussion of it in the text of the article. Each table and figure should be accompanied by an explanatory figure legend or table legend. Any article containing tables should be submitted as a Word document attachment to an email message with the tables produced through the table creating function of Word (as opposed to an Excel or comparable spreadsheet).

Extensive use of uncommon abbreviations, symbols, and acronyms is discouraged. Common abbreviations, such as D for diopters or cm for centimeters, may be used. Common symbols, such as Δ for prism diopters, may be used when the context for their use is clear. The first use of acronyms should be accompanied by the name or phrase spelled out followed by the acronym in parentheses, as for example: The Optometric Historical Society (OHS) has produced a quarterly publication since 1970.

Acknowledgments should be placed between the text of the article and the reference section. Sources of support, such as grant funding or other significant assistance, should be acknowledged. The assistance of persons who contributed to the work may also be acknowledged.

References should be placed after the acknowledgments, and for most papers will be the last section of the paper. References should be numbered in order of their citation in the body of the article. Citations should be identified in the text by superscript numbers. Authors are responsible for ensuring that reference listings are correct. Reference format should be as follows:

Journal articles:
Calvo M, Enoch JM. Early use of corrective lenses in Spanish colonies of the Americas including parts of the future United States: reference to Viceroy Luis de Velasco (the son). Optom Vis Sci 2003;80:681-689.

Section in a single author book:
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Citations to articles in *Hindsight: Journal of Optometry History* should be given as follows:
Bennett I. The story behind Optometric Management magazine. Hindsight: J Optom Hist 2007;38:17-22.

If footnotes or notes on additional (minor) details are used, they should be marked in the text with superscript lower case letters starting with a and continuing in alphabetical order. The notes themselves should be the last section of the paper. The heading for the section should be Notes.

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