Literature related to the development of optometry in the United States

by Marita J. Krivda*

Development of the Profession. The origins of optometry, in a similar fashion to podiatry, stretch back into the history of medicine, science, and fashion. Scientific invention prompted investigations into the fields of optics and optical instrumentation. Such famous scientists as Galileo (1564-1642) discovered the telescope; Benjamin Franklin (1706-1790) first used bifocal lenses for presbyopia (eyes which have lost the ability to focus at near); Charles Babbage (1792-1871) discovered the first practical ophthalmoscope to search into the ocular fundus; and others contributed to the knowledge of optics and its instrumentation. While instrumentation was slowly breaking ground in the realm of scientific invention, interest in spectacles as objects of aesthetics and aristocratic lineage changed into interest in spectacles as utilitarian objects.

The greatest advance, however, came as a result of breakthroughs in the understanding of the mechanism of ocular disorders through discoveries of physiologists and natural philosophers. Sir Isaac Newton (1642-1727) formulated the emission theory of light. Although some theories on the origins of light and its perception by the eye date back to the Arab philosopher Alhazen in Spain in 1038, the breakthrough was made by an English physicist, Thomas Young (1773-1829), who discovered astigmatism, or irregular curvature of parts of the eye which refract light beams, in his Essay on the Art of Seeing. In the nineteenth century, the fusion of knowledge of instrumentation, lens design, and physiology flowered in the discoveries of two physiologists, Donders and Helmholtz. The Dutch-born Frans Cornelius Donders (1818-1889) proposed a total theory of accommodation and refraction of the eye which went beyond the astigmatic theory of Thomas Young. He published a monumental book, On the Anomalies of Accommodation and Refraction, in 1854 in English, through the New Sydenham Society. The other great physiologist of the nineteenth-century advances is Herman Ludwig Ferdinand von Helmholtz. He explained the mechanism of the ciliary muscle and the crystalline lens of the eye. He successfully used the ophthalmoscope, invented by Charles Babbage, and set forth his ideas in the definitive three-volume work, Handbuch der Physiologischen Optik, appearing in 1856, 1860, and 1866. These scientific inventors and physiologists laid a solid base for an emerging science, the visual science, which today encompasses optometry, ophthalmology, and opticianry.

Not to slight the optician, the Worshipful Company of Spectacle Makers, the first true guild of opticians, were forerunners of today’s optometrists and opticians. In Great Britain and the United States, a split grew up in the nineteenth century between the refracting optician and the dispensing optician. At the end of the nineteenth century there were two terms to designate a person skilled in the visual sciences. An "oculist" was a physician who dealt with refraction and muscular deficiencies and pathologies who might use cycloplegic agents. An optician was a grinder of lenses and fitted lenses to form eyeglasses prescribed by an oculist. In late nineteenth-century America, a new profession emerged as a result of a split between the oculist who refracted with drugs and those who refracted without drugs — the oculist and optometrist. This term came from Edmond Landolt (1846-1926) who, in his Leçons sur le Diagnostic des Maladies des Yeux (Paris, 1877), first used the word "optometre" to describe an instrument that measured subjective errors of refraction without drugs. In the United States, The American Association of Opticians, later the American Optometric Association, recommended that the word "optometrist" be used for refracting opticians, and a new profession was born in the United States — optometry.

The two most important personages in the establishment of optometry were Charles F. Prentice and Albert Fitch. Charles F. Prentice was a New Yorker who founded the Optical Society of New York and lobbied for optometric legislation between the years 1886 and 1910. His account of the stormy foundings of optometry is written in his Legalized Optometry and the Memoirs of Its Founder (Seattle, Wash.: Casperin Fletcher Press, 1926 [limited to 200 copies — rare]). Dr. Albert Fitch pushed to establish optometry as an
independent health-care profession in the state of Pennsylvania through skillful political maneuvering. In 1917, the Pennsylvania College of Optometrists, a professional group, sent a note to Woodrow Wilson to say that they would mount an optometric field service. As a result of the optometrists' war efforts, the Office of the Surgeon General published a pamphlet, The Practice of Optometry and the Training It Requires, in defense of the newly forming state optometric societies. Three vision-care professions were defined: oculists (or ophthalmologists, specialists dealing with ocular pathology and surgery), optometrists (specialists in the function of the eye as a refracting and focusing apparatus), and opticians (specializing in grinding lenses). The Optometry Act of 1917 allowed optometrists to set up a State Board of Examiners in each state independent of the Medical Examination Review Board.

In 1919, Dr. Fitch established the first college of optometry, the Pennsylvania State College of Optometry at 1509 Spring Garden Street, Philadelphia (not the current location of the school). In 1923, the Pennsylvania State College of Optometry had the right to confer the degree of Doctor of Optometry. From that time to the present, optometry has been governed by state boards which set the standards that become law through state legislatures. Today, new thresholds are to be crossed as optometry appeals the right to use not only cycloplegic drugs but also pleads the right to use therapeutic drugs, such as drugs to treat glaucoma and other ocular diseases.

Membership: two models of the profession. The basic models of education and training in the world are based on the English-speaking model and the Continental, guild-type model. The English-speaking countries have the highest privileges granted to this non-medical specialty which is known in the United Kingdom and the English dominions as ophthalmic opticianry, and in the United States as optometry. The professional course in the United States is four years of full-time study as post-baccalaureate level, in which biological and psychological subjects are studied with equal weight as optics and graphical analysis. In the United States currently, there are more than 18,500 optometrists, and fifteen colleges of optometry. Other English-speaking countries have colleges with similar curricula; among the more famous are the City University of London and the University of Wales. There are colleges in Ireland, Scotland, New Zealand, South Africa, Canada, and Australia which are based on a four-year optometric program post-A level examination.

The other model, the Continental model, is based on an older system — the guild system, which is practiced in Scandinavia, Germany (East and West), the Netherlands, and Belgium. There is a growing third model which uses an ophthalmic assistant and eliminates the optician because this professional works with the ophthalmologist. This hybrid is practiced in third-world nations.

Primary materials. Optometry has set up through the American Optometric Association an International Library, Archives, and Museum of Optometry (ILAMO), with Maria Dahlemont as Librarian, to serve as an international repository for manuscripts, journals, old books, memorabilia, and instruments important to the evolution of optometry in the United States and elsewhere. Extensive personal papers are housed in this library (at 7000 Chippewa Street, St. Louis, Mo., 63119).

The Pennsylvania College of Optometry, established at the inception of optometry in the United States, has an extensive collection of journals, books, eyeglasses and instruments.

The Optician (U.S.) is the earliest journal. It evolved into the Optical Review, which began publication in 1910 through the efforts of Charles Prentice. The other old journal is the American Academy of Optometry Journal, which is actually a report of the fourth and fifth annual conventions of the American Academy. A somewhat older predecessor, published for one year, is the Northwest Journal of Optometry, published in 1924 for one year. Certain books can be considered primary sources since they are autobiographical accounts of the growth of optometry. As mentioned, Prentice's Legalized Optometry and the Memoirs of its Founder, is a splendid, if somewhat self-aggrandizing, portrait of the man and the times. My Fifty Years in Optometry (two volumes, Philadelphia: Pennsylvania State College of Optometry, 1955) is an autobiographical account written by Dr. Albert Fitch of his own battles in Pennsylvania, and filled with references, copies of letters, telegrams, etc.

As indicated above, European investigations formed the basis of optometry and the visual sciences. The books by Donders, Helmholtz, and Landolt, previously mentioned, are of immense importance. In addition, certain books and writers are of preeminent significance, such as Edward Nugent's A Treatise on Optics; or, Light and Sight, Theoretically and Practically Treated with the Application to Fine Arts and Industrial Pursuit (New York: Van Nostrand, 1868). This book is of importance because it translated complex theories into practical, useful textbooks for the growing optometric profession. Another important book is Dynamic Skiascopy in Theory and Practice (New York: A. Jay Cross Optical Company, 1911). Andrew Jay Cross, its author (1855 - ?), a Dutch-born American, invented the dioptrometer, the retinoskameter, skiascope, and the fixation stand. This material is important for the discipline of orthoptics, which grew up to be incorporated into the field of optometry. Numerous books published by ophthalmologists (or oculists) George de Schweinitz (1855-1888), of Philadelphia, and Edward von Jäger (1813-1884), of Vienna, also were part of the curriculum of the early optometric colleges.

Recently an impressive multi-volume set, Atlas of the History of Spectacles, has been published by W. Poulet (a pseudonym), which documents in magnificent photographs the evolution of eyeglasses as ornaments of exquisite design and as functional objects in both photographs of actual eyeglasses and reproductions of eyeglasses painted in works of art.

Secondary literature. One of the most important secondary sources in optometry, curiously, is an encyclopedia of ophthalmology which documents the state of knowledge of the visual sciences around 1910. This work is The American Encyclopedia and Dictionary

An important early bibliography concentrated on night vision, color vision, and perceptual problems is A Bibliography of Visual Literature, 1930-1944 (compiled by John F. Fulton, et al. Prepared by the Committee on Aviation Medicine, Office of Scientific Research and Development, Washington, D.C., 1945).

Biographical compendia of all United States optometrists have been issued since 1920. This series is called the Blue Book of Optometrists and Opticians, and is currently in its 36th edition. The directory lists the optical/optometric schools, the state laws, and the membership by city and state in alphabetical order. Additionally, a compilation has been made of the membership of the American Optometric Association's 1972 Directory, which lists all optometrists who are members of the A.O.A. It lists deceased members, as well as giving some of the same information as the Blue Book, and includes the Code of Ethics of the American Optometric Association.


It is also of interest that there is a splendid newsletter on the history of optometry entitled Newsletter of the Optometric Historical Society. (243 North Lindbergh Boulevard, St. Louis, Mo. 63141; v.1, 1969 - $5 includes membership in the Optometric Historical Society). Another journal has been begun recently: Historia Internationalis Ophthalmologicus (Bonn, Wayenborough, v.1, 1981- ). The literature of optometry is both rich and varied in materials for historical research.

Bibliographic control of literature in optometry. The state of confusion over appropriate methods of cataloging optometry books is apparent. No good classification has been devised because optometry is a fusion of medicine, physics and physiology. PCO's collection of approximately 14,000 volumes must be recataloged from the totally antiquated Dewey Decimal System. The present writer has decided to catalog the collection using LC/NLM classification schedules. This undertaking will begin, hopefully, through a grant from the National Library of Medicine to revise the inadequate WW (ophthalmology) schedule to accommodate visual/optometric sciences.

A thorough revision of the PCO library's subject headings has been completed and the library is the first in the nation to use strictly National Library of Medicine Medical Subject Headings to provide access via subject to its collection. We hope to input MeSH headings into the OCLC database when the library joins PALINET/OCLC. The reason I have chosen MeSH is that increasingly optometry is becoming medicalized into mainstream medical thinking, and ophthalmologic/optometric terminologies resemble each other more than in previous years.

News & announcements...

MILDERD HALLOWITZ On October 1, 1981, Milderd Hallowitz was named History of Medicine Librarian at the University of Buffalo, following her retirement. Serving as Head of the medico-historical collections since 1974, Mrs. Hallowitz organized the Friends of the Health Sciences Library group, and is presently serving as President of the Medical Historical Society of Western New York. She assures us that she expects to continue her association with ALHSH and AAHM, and is currently involved in a special project in the history of local hospitals. We look forward to seeing Mrs. Hallowitz in Bethesda this spring. Her replacement is Mrs. Lilli Sentz.

WHERE IS IT? Thomas R. Forbes, Senior Research Scholar in the History of Medicine at Yale, is looking for the original manuscript of Thomas Palmer's "Admirable Secrets of Physick and Chyrurgery," dated 1696. He is working from a photocopy, but, strange to say, neither the library which provided the photocopy, nor about 20 others queried, knows where the original is. Please forward to him any information or suomises you may have.
Development of the Profession. Originating like dentistry in the late 18th and early 19th centuries, and likewise outside the pale of professional respectability, the chiropodist's craft was carried on largely by itinerants, relying on newspaper advertising and even street-hawking, to bring in trade. A very few chiropodists were appointed to royal or noble households - these are the ones whose names have survived, mostly - others attached themselves to barbers' establishments. Certain families, like the Durlachers and Runtlings in England, and the Kahlers and Denisons in America, passed down their skills from generation to generation, building upon practical experience toward professional expertise. Lewis Durlacher, 1792-1864, is credited with the first scientific publication on chiropody: A Treatise on Combs, Bunions, the Diseases of Nails, and the General Management of the Feet (London, 1845).

Cleanliness and use of sensible footwear - with appropriate diatribes against the absurdities of fashion - constituted the chiropodist's public message, then as now - a message not easily gainsaid by the medical and surgical establishment, always watchful against incursion over its frontiers.

Under the leadership of Maurice J. Lewis, M.D. (1857-1927), the first chiropodial organization, the New York Pedic Society, was formed in 1895, developing into the National Association of Chiropodists, which in turn became the American Podiatry Association, currently in the forefront of professional and political activity. The New York Society's Pedic Items was the first professional journal, appearing in 1907, evolving first into the Journal of the NAC and then into the present Journal of the APA. The New York School of Chiropody was established in 1911, and came under Lewis's authority and protection in 1913. It became the First Institute of Podiatry, then the Long Island College, and ultimately the New York College of Podiatric Medicine. Similarly in England, Arnold Whitaker Oxford (1854-1948), a highly respected physician, lent his authority and counsel to its professional development.

Now consisting of perhaps 40,000 to 50,000 practitioners throughout North and South America, Europe, the British Isles, South Africa, Australia, New Zealand, and even Latin America, the chiropodial profession is maintained by five 4-year schools in the United States (in California, Illinois, New York, Ohio, and Pennsylvania, with a sixth newly-established in Iowa); by ten 3-year training schools in the United Kingdom, by four in Australia, and various institutes elsewhere. In the United States efficient professional organization has won surgical privileges for podiatrists. British professional status runs somewhat behind American.

Center for the History of Foot Care at the Pennsylvania College of Podiatric Medicine. In 1974, at the initiative of its President, James E. Bates, DPM, and through the interest of its Librarian, Frances E. Peters, PCPM acquired for its Charles E. Krausz Library, the collections of Dr. Stewart E. Reed, DPM, of Des Moines, developed over a considerable period. These consisted of approximately 2,500 books, pamphlets and periodical volumes, and other related matter. Dr. Krausz, a Philadelphia podiatrist and teacher, and, like Dr. Reed, a former President of NAC, had also presented a most interesting collection.

These in turn were augmented, especially as to reference materials in the history of general medicine, by the PCPM Library itself, which had inherited some of the library of PCPM's ancestor, the Temple University School of Chiropody, active from 1915 to 1961. Primary emphasis in all these collections is on chiropody-podiatry (the terms are synonymous, though the American profession strongly prefers the term podiatry or podiatric medicine) and its literature; next on texts and articles in orthopedic surgery; and lastly on footwear, historic and contemporary and corrective, and its good and bad effects. Some supporting materials, mostly as textbooks, have been collected in such areas as general surgery, diabetes, gout, dermatology, and so on.

In 1981, PCPM was awarded a one-year grant from NIH to set up what has come to be called the "Center for the History of Foot Care," reflecting interest in such diverse areas as sports medicine, the foot in art, orthopaedics, and footwear of all sorts. (The College owns a substantial collection of shoes, sabots, mukluks, pattens, clogs, Chinese bound-footgear, sneakers, satin slippers, ancient Egyptian burial sandals, and whatnot, and displays the H. Augustus Wilson Shoe Collection belonging to the Mutter Museum of the College of Physicians.

Secondary literature in podiatric history. Dr. Krausz's Chiropody Indexes, distributed in a very limited edition, covered four to six of the principal journals, English and American, from 1907 to 1957, with 1958 printed separately in the British Chiropody Journal. Biographical and clinical matter are included. Bruno Valentin's Geschichte der Fusspflege (Stuttgart, 1966; 103 pp., illus.) is the only published book-length history. The only biographical compendium is entirely contemporary, issued by the American Podiatry Association in 1980 and limited to living Americans. Address-lists, some alphabetical and geographical, most only geographical, for Britian, and Americans, go back in scattered fashion to the twenties.

Quite a good deal of retrospective material, though often fragmentary, is buried in journals, local, state and national, generally without indexes or tables of contents. Besides the work of Drs. Krausz and Reed, the late Walter Seelig, and J. Colin Dagnall, British practitioner, editor, and historian, we have turned up several hundred citations of historical and biographical interest.

One of the first concerns of the writer, upon coming to PCPM in August of 1981, was to remedy her own entire ignorance of podiatry as speedily and usefully as possible. The best way seemed to be to analyze the journal articles and biographical bits; so far we have found about 2,000 of these, and there are surely many more. Incidentally, we elected to make full-name entries, with
HONORARIUM FOR ARTICLES. As an inducement for contributors to this Newsletter, the Steering Committee has agreed to offer an honorarium of $50 for articles judged appropriate for the lead position (approximately 1000 to 1500 words) and $35 for articles judged appropriate for secondary position (750 to 1200 words). Articles must deal with topics of direct interest to our readers, or with techniques of special usefulness. The Editor will consult with other members of the Steering Committee in making decisions. Manuscripts (typewritten, of course) must be received a month before date of issue of the Watermark that is, by the first of December, March, June, or October. The July, 1982 issue will initiate this policy.

ALHHS April 28, 1982 at Baltimore.

Program: 10:00 -12:00 in the Seminar Room of the Institute of the History of Medicine, Johns Hopkins University, 1900 E. Monument Street, Baltimore.

Papers by Nicholas Dewey, Lisabeth Holloway, and Bruce Fye. Business meeting.

12:15 - 1:15 Lunch in Inner Harbor - Fells Point Room of Sheraton Johns Hopkins Inn

1:30 - Visits to libraries - Institute of the History of Medicine & Welch Medical Library; Alan Chesney Medical Archives; Johns Hopkins; Peabody Branch of Enoch Pratt Library, Peabody Conservatory of Music; Medical and Chirurgical Faculty of the State of Maryland Library; Health Sciences Library, University of Maryland. Thanks to Doris Thibodeau for putting together this great program!
The Wellcome Library classification

and Archives

By courtesy of J. Colin Dagnall, M.Ch.S., editor of the British Journal of Chiropody, historian of chiropody - podiatry, and habitue of the Wellcome Institute in London, the Editor has received a copy of the Wellcome's "Guide to the Reference and Periodical Collections in the Catalogue Hall, Reading Room and Annexes, and to the Subject Catalogue."

This 10-page work, reproduced from typewritten copy, begins with two pages briefly listing the contents of the Catalogue Hall, the Periodicals Annexes, and the Reading Room and its Gallery, which include special rooms on Oriental and American medical history. The Subject Catalogue contains the secondary periodical matter listed in Current Work, (1954 to date, of course, and some earlier periodical citations as well), material in book form, and primary texts mentioned in Garrison-Morton.

Of special interest to us is the outline of the Wellcome's Classification Scheme. Alphabetical, and based on the Barnard scheme, it blows across the transatlantic cold and fresh upon those of us tied to the apron strings of Our Mother in Bethesda, good, gray and gracious as she is.

A - Science, general history and bibliography
B - Medicine: general history, also by time and place; primitive; BY - BZ - Biography.
C - Hospitals: Medical education and Nursing arts in relation to medicine and science; quackery
D - Anatomy, Physiology, Nutrition, and Radiology
E - Epidemiology, including Demography and Statistics
F - Specific diseases
G - Pathology and Symptomatology
H - Clinical medicine, including Diagnosis
I - Material Medica and Pharmacy
J - Public health
K - Medical jurisprudence
L - Tropical, Military, Naval and Aviation medicine
M - Industrial medicine
N - Orthopaedics and Osteology
O - Cardiology and Angiology
P - Neurology and Psychiatry
Q - Ophthalmology
R - Respiratory system and Oto-rhino-laryngology
S - Gastroenterology and Endocrinology
T - Dermatology, Urology and Sexology
U - Gynaecology, Obstetrics, Paediatrics and Geriatrics
V - Surgery and Anaesthesia
W - Dentistry
X - Veterinary medicine
Y - Bibliography - i.e. techniques of bibliography and librarianship, catalogues of libraries and archives, etc.
Z - Non-medical subjects, including History, Art, Archaeology, and such printed works (as Pepys' diary) as "throw light on medical conditions."

Next the "Guide" gives us an index to the classification (approximately 9 columns in length) of specific terms, showing the expansion of the scheme, which may be further subdivided geographically after the decimal-point. For example, Clothing is JKN; Drug addiction FCF; Gem theory FFAM; and Shakespeare CUT.D (an impertinence which no transatlantic indexer would dare).

Trustees of the Wellcome have also established a Contemporary Medical Archives Centre for the collection and preservation of 20th-century British medical matters. This Centre intends also to establish a sort of union list of archival records deposited elsewhere, and to provide referral service to the scholar. Among the collections maintained at the Centre, to name a few at random, are those relating to Sir H. H. Dale, Dr. Charles Singer, Dr. Marie Stopes, and the British Dental Association. The Archivist is Miss Julia Sheppard.

Editorial note...

The Watermark is issued quarterly to members of this Association and subscribers. President, ALHBS, Janet Kubinec, Curator, Historical Collection, Falk Library of the Health Professions, Scaife Hall, University of Pittsburgh, Pittsburgh Pa. 15261. Secretary-Treasurer, Jonathan Erlen, 14247 Shoredale Lane, Farmers Branch, Texas 75234. Editor, Lisabeth M. Holloway, 58 W. Tulpehocken Street, Philadelphia, Pa., 19144.

The purpose of this Association shall be to serve to professional interests of librarians, archivists and other specialists actively engaged in the librarianship of the history of the health sciences by promoting an exchange of information and by improving standards of service.

Dues $10 per year to persons actively involved in the history of the health sciences and its libraries. Members are reminded that dues owing for 1981-1982 must be paid within two weeks of receipt, or their names will be dropped.

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