

# HINDSIGHT

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Newsletter of the  
Optometric Historical Society

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## The other "OHS": OPTOMETRY LIBRARY

The Ocular Heritage Society was formed in 1984 with bylaws written and adopted in 1988. Nonprofit status from the Internal Revenue Service was acquired in 1991. Like the Optometric Historical Society membership is open to anyone interested, and in fact several of us belong to both. There are some differences of emphasis, ours being in the quarterly newsletter and the other in an annual two-day meeting at which members give papers with copies available to members not in attendance. Our annual dues are \$10.00 and theirs \$25.00.

At the April 1991 meeting of the "ocular" group the program included papers on "Javal's Blindness", "Eye Care Reflected on Trade Cards", "Stereotypes and Stereographs", "Cataract Surgery", "The Optical Industry in Modern Times", and "Lorgnettes".

Further information is available from Valda J. Tull, Secretary-Treasurer, 143 Springdale Road, York, Pennsylvania 17403.

## More about Schuler:

Prompted by the reference to Schuler in the April issue of NOHS, pp. 14-15, OHS member Ted Fisher combed his memory and submitted the following addenda:

Neville Schuler was an optometrist who lived in Georgetown, Guyana. In late 1934 he emigrated to Canada and was successful in obtaining an optometry license in Ontario. He is listed in the Ontario handbook each year from 1935 up to and including 1940. In the 1940 issue his address is given as Georgetown, Guyana. In early 1935 he opened a dignified ground floor office in New Toronto, a western suburb of Toronto on the shore of Lake Ontario. The area is now known as Mississauga. Schuler also opened a branch office in Sarnia, Ontario. He commuted some 250 miles regularly each week between the two offices - in those days highways and cars were not as speedy as today.

In 1937 he gave a lecture to the Toronto study group on his ideas concerning the use of blue tinted lenses for patients showing early signs of cataract. He spoke with a noticeable German accent and, despite the lack of any scientific basis or arguments, he was very convincing. He had a very dignified bearing and was able to field questions adroitly. Many local optometrists began to use "Azurlite" (light blue tint) lenses as a result of his influence.

In early 1939 Schuler employed Dr. Jack Archer, a 1938 graduate of the College of Optometry of Ontario, in his practice. Later that year upon the outbreak of the second world war Schuler returned to Guyana. In the early 1950's word reached here that Schuler had entered a medical school in India. He would be at that time almost 55 years of age. Whether he graduated or not is not known, but about 1960 word came that he had died.

Dr. Jack Archer purchased Schuler's Toronto practice in 1939. These were the early days of fitting plastic molded contact lenses, and the major supplier was Obrig Laboratories in New York. Jack Archer was quite inventive, so he began to develop a method of making contact lenses from eye impressions. This resulted in the formation of the Dominion Contact Lens Laboratory, the first such laboratory in Canada. Through this he developed a unique set of moulding shells which were much easier to use than previous types, and led to taking ocular impressions without the use of an anaesthetic. Archer disposed of the company in 1945 to Harold File, an engineer, and went to Los Angeles where he served for a time as an instructor in dispensing optics at the City University of Los Angeles. He also attended Los Angeles College of Optometry to complete the requirements of the California optometry board. Upon passing the board examinations Archer opened an optometry practice in Los Angeles. I visited this office, and he showed me some equipment he had developed for the production of corneal contact lenses. Archer died in 1989. Just last year our museum obtained some of the presses and dyes Archer used in making moulded scleral lenses from the Dominion Contact Lens Laboratory.

To substantiate or not:

One of our members, perhaps our most attentive reader, commented that it is "too bad we cannot substantiate Colin Robb's claims." He then added that, "I was a little surprised that you didn't mention that when you reported his article in the last NOHS." (Jan. 1991, pp.5-6)

I consider this a compliment rather than a criticism insofar as, anyone might like to think of the historical contents of the NOHS to be duly substantiated. Indeed they rarely are! Not only that, but I would caution all readers that, while we try very hard to cite the source of each item accurately and completely, we ordinarily do not question its validity unless we have some contrary evidence brought to our immediate attention.

In the instance of the Robb article our complimenting reader and I have both attempted to track down any documentation of Robb's report that Sir Thomas Molyneux of Castle Dillon in 1725 "invented rimless spectacles for officers". Robb is deceased, but we now have contact with Michael P. Gilseman, an optician in Armagh county, Northern Ireland, where Castle Dillon is located, and he

has sent us a lot of information about Molyneux's home, statue, 600 acre estate, etc., but nothing as yet on rimless spectacles. We are also invited to visit Mr. Gilseman and stay at his home!

With a lot of luck we may eventually substantiate Mr. Robb's assertion.

H.W H.

Dr. Majer's "Contributions to Optometry":

(The following review is by Jan Hajnosz, O.D.)

Recently, a copy of a more than a century-old series of articles entitled PRZYCZYNKI DO OPTOMETRYI reached my desk. It came through a long and somewhat tortuous route from the archives of the Jagiellonian University in Krakow, Poland, to Dr. Boleslaw Kedzia at the Department of Optometry, Medical Academy in Poznan, Poland, to Dr. William Baldwin at the University of Houston College of Optometry, then to Dr. Henry Hofstetter at Indiana University School of Optometry, and finally to me in the green and misty state of Washington.

I read the articles with considerable interest. They were written by Dr. J. Majer, (Prof. Dra J. Majera), an ophthalmologist, and published in July of 1863 in four consecutive issues of the weekly Physician's Review (Przeqlad Lekarski) in Krakow, then, since Poland as a state did not exist during the 19th century, a part of the so-called Austrian Partition.

First, the title "Contributions to Optometry" seems common today; however, it is, so far as we know, the first time in Poland that the word "optometry" appeared in print. At the outset, Dr. Majer explains the idea of "sight-measurers" or "optometers" that would measure the extent of clear vision and the amplitude of accommodation, and then goes on to propose several new devices of his own based on the principles of "optical-physiology (sic)".

And "optical-physiology" it really is! Thus one can find discussed here principles of a pinhole, parallax, depth of focus; concepts of the "ideal eye", myopia, emmetropia, hyperopia; and the well-known names of Donders and Helmholtz as well as the lesser known names of Stempfer and Scheiner which crop up throughout the text. And then there are the "optometers" themselves, mostly of the good old optical bench type, but carefully thought out and certainly ingenious. The contents of these four articles, served casually a century and a quarter ago in a weekly review to be read, perhaps, over an afternoon coffee along with the reports from the mineral spring resorts (which immediately follow), could well fill up many an afternoon of the physiological optics laboratory at any of our optometry schools today. Rather impressive, isn't it?

I found this series interesting in more than merely a technical sense, too. One is the writing style, which is clear,

concise, and yet elegant; considerably unlike much of today's scientific gibberish that is anything but pleasant to read.

Another interesting thing is the date, 1863, a year of one of the most tragic national uprisings with which the last 200 years of Polish history is so abundant. With the noise of the battlefields and casualty numbers in the background the study of "optometers" takes on a new light.

The last thought is of a rather personal nature. My great-great-grandfather and my great-grandfather, both ophthalmologists, were both practicing during the time the articles were published. It is reasonable to think that they both read these articles, and perhaps knew Dr. Majer personally. I cannot help wondering whether they could imagine that these copies of the Review would end up in my hands so many years later and so far away.

#### Witelo said:

In a 1984 issue of Klinika Oczna, 86:505-506, a Polish ophthalmological journal, appears the following brief review in English by Jerzy Burchardt describing the visual process as understood by Witelo(1237-1290):

In the book "Perspectiva" written in the years 1270-1272 in the papal curia in Viterbo Witelo "the son of Thuringians and Poles" born in Silesia, then a part of Poland, described his concept of the process of vision. Visual forms come with the light from the seen object to the eye (visus) and enter it through the round hole in the uveal membrane (pupil). They reach the centre of the eye on the surface of the so called glacial liquid (humor crystallinus vel glacialis) forming a cone of vision with its peak in this centre and with its base on the surface of the seen objects. The vision is clear and distinct only in the line of the axis of vision (axis radialis) while the remaining beam lines are refracted in the transparent medium of the cornea (in medio diaphani corneae) and the distinctness of vision decreases with increasing distance from the axis. From the surface of the glacial sphere the visual forms are conveyed further in the excavation of the optic nerve between the vitreous liquid (humor vitreus) and the common nerve (nervus communis), through a transparent substance called the spirit of vision (spiritus visibiles), and from these the so called visibility spirits (spiritus visibilis) convey the visual sensation (sensus) to the optic chiasm in the anterior part of the brain, where the ultimate sensory centre (ultimum sentiens) receives and integrates the forms incoming from both eyes. The common sense (sensus communis) known already to Aristotle realizes or rejects these forms comparing them with the general forms stored in the process of previously acquired knowledge collection.

In 1990 the Karol Marcinkowski Academy of Medicine in Poznan, Poland, declared Witelo to be Polish optometry's patriarch and cast a bronze commemorative medal in recognition.

### Spectacle collector news:

The July 1991 issue of Ophthalmic Antiques International Collectors Club Newsletter, no.36, announces plans for a flying trip from London to Venice for the period May 26-31, 1992, to visit several spectacle museums and to do some sightseeing. In an article on pp. 2-3 Sekiya Shirayama discusses the evidence pertaining to the belief by some scholars that the Chinese invented spectacles before they appeared in Europe. He found no evidence to prove it.

The late Paul Fairbanks, a lecturer at City University, London, was also a collector. His record cards, given to the Club chairman, include the names, locations, apprentices, active years, vocational identities, and product-labeling initials of about 200 spectacle makers and are included in the newsletter.

Kees Kortland, Groeneveld Brillen bv, Slaak 120, 3061 CZ Rotterdam, Holland, an optician-optometrist, describes on pages 8-9 his involvement as a collector of optical items. His collection soon led to eventual museum displays and the publication in 1990 of an atlas type of book, in Dutch, entitled "Het Oog Wil Ook Wat" (The eye wants something) which he is offering at \$17.00 plus postage and packaging.

Listed also are about three dozen antiques events and fairs scheduled during July-October, 1991, in the U.K. which are likely to include optical items.

### 19th century ophthalmological trends:

Volume 9 of F.C. Blodi's 1990 translation of Julius Hirschberg's History of Ophthalmology introduces a new phase of special significance to optometry. It occurs largely in the second half of the 19th century as described in this volume mainly for the U.S.A., though the volume's coverage is also for the first half of the century, and separately for Switzerland and Belgium. The new phase is the ophthalmologists' increasing attention to visual science and the optometric concepts of eyecare late in the second half of the century.

Hirschberg mentions two interesting difficulties that he encountered in his study of 19th century American ophthalmology. One was "the complicated conditions of the American universities." The second was "the fact that ophthalmology developed during the first half of the 19th century only very slowly in the United States. After the middle of the century it developed more quickly, but only since the 70's has it acquired full stature."

The complexities of the universities were in terms of the meanings of "college" and "school" and the manner in which the medical programs, private, state, eclectic, and other, were affiliated and their relationship to the various academic degrees, very different from the European patterns.

Ophthalmology's professional development in the United States in the first half of the century lacked university connections, organizations, and journals. The limited advancement was accomplished by a few privately practicing eye physicians and the staff of a very few eye hospitals. Optician McAllister's contribution in 1828 is almost the single identification of anything optometric.

Possibly, or probably, related to the appearance of Donders' book in 1864 there emerged the first broad concern with refractive errors and their correction. Interestingly this seemed to be less in terms of acuity or vision per se than in terms of asthenopia as a clinical entity. Hirschberg actually devotes 32 pages to the topic of asthenopia as a historical phenomenon, including a partial list of over 200 related publications within three decades!

The rapid ophthalmological development was further enhanced by the establishment of their first journal, a quarterly, in 1862, and the founding of their first association, the American Ophthalmological Society, in 1864.

In concluding the American chapter Hirschberg quotes H. Friedenwald, who said in 1912, "if we follow the medical history in America, then we find that the most meritorious achievements in ophthalmology [were] the discovery that refractive errors can cause nervous symptoms, especially headaches [and] the finding of Stevens who categorized the disturbances of muscle balance. These discoveries overshadow all the other numerous contributions to clinical ophthalmology and mark great and beneficial advances in our specialty."

The much shorter sections on Switzerland and Belgium for the 19th century show no significant ophthalmological trends optometrically different from those of the other western European countries described in previous volumes of this series.

#### Notes from another club:

Featured in the April 1991 issue of the Ophthalmic Antiques International Collectors Club Newsletter, No. 35, is a full page reproduction of the cover page of the first issue of The Optician, subtitled "The Organ of the Optical, Mathematical, Philosophical, Electrical, and Photographic Instrument Industries; And Review of the Jewellery and Allied Trades", vol. 1, no. 1, Thursday, April 2, 1891. A little more than half of the cover consists of the boxed advertisements of four product providers, the most optometric of which is PURDOM & STOKES optic works established 1845, Birmingham, "Manufacturers of every description of Spectacles, Gold, Silver,

and Steel. Makers of Pebble Lenses of all kinds, also Sphero-Cylinders, Prisms, &c."

The 1991 Club Meeting and Auction was scheduled for Sunday 19th May at 11:45 a.m. with committee meetings at 10:45 a.m., lunch at 1:00 p.m., and the auction following lunch. Editor MacGregor adds considerable commentary of interest to collectors of ophthalmic antiques.

A two page article by Sekiya Shirayama is a careful attempt to ascertain the date of introduction of spectacles into Japan. His resources are the appearance in Japan of the word meaning "vision aids" in literature and the examination of the oldest eyeglasses still in existence in Japan. His conclusion is that "the first spectacles to appear in Japan were the ones presented to Yoshitaka Ohuchi in 1551" by Francisco St.Xavier (1506-1552).

Another two page article, by Colin B. Fryer, reviews the appearance of spectacles on postage stamps, "about 750 to 800". The earliest appeared in 1904 on a Colombian stamp depicting President Marroquin. In April 1986 the Deutsche Bundespost issued a group of stamps commemorating eight early vocations registered under the handicraft ministry, of which Augenoptik was one.

#### Javal's blindness:

(A paper given by James Leeds, O.D., at the 1991 meeting of the Ocular Heritage Society in Philadelphia.)

Louis Émile Javal, the famous French ophthalmologist, whose writings on astigmatism and strabismus did so much to advance the science of ophthalmic optics, was born May 5, 1839.

In 1806 at the suggestion of Napoleon, the Jews of France changed their family names to more typical French names. Javal's grandfather inscribed his name as Jacob on the register. This was miscopied by the clerk as Javal and became the family name thereafter. Leopold, Javal's father, was a rich financier and for fifteen years was a member of the National Assembly.

Émile Javal inclined to a scientific career and could not be persuaded to follow in his father's footsteps. He originally preferred medicine, but due to family opposition compromised on mining and eventually was occupied in the coal mines controlled by his family.

His interest in physiological optics was aroused by several circumstances. His father, sister, and two nephews all were strabismic. Javal himself had one blue eye and one brown. Also he was astigmatic, and close work gave rise to discomfort. The experts of the day could not help any of these conditions, so Javal himself discovered that a cylindrical lens would improve his vision.

While still a mining engineer, Javal published the results of his tentative research on astigmatism and binocular vision. These received such encouraging attention that Javal abandoned mining and enrolled in the study of medicine at the University of Paris in 1865.

He was a very industrious student. Before he graduated he had improved the optometer and contributed sixteen articles on astigmatism and orthoptics to journals of ophthalmology. He was an exceptional linguist and in 1866-7 translated the works of Donders and Helmholtz into French.

Javal graduated in 1868, and his thesis was on strabismus. He then visited the clinic of von Graefe in Berlin until the Franco-Prussian war intervened. After serving as a medical officer in the war he became absorbed in civic issues, education, and reform. He followed his father's lead in politics and for twenty-four years represented his canton and for five years was deputy of his department.

In 1878 Javal became the first director of a new ophthalmology laboratory connected with the Sorbonne. One of his co-workers was Schiötz, and in 1880 the two began work on the simplification of the ophthalmometer. Tscherning joined them in 1884. The laboratory soon achieved international recognition and had many well known ophthalmologists on its staff, including Landolt and Bull. Javal had justified his leadership, and in 1884, at the age of 45, he was elected a member of the Academy of Medicine, a signal honor for an ophthalmologist.

Javal's enthusiasm for ophthalmology centered on optics. He was not interested in surgery and referred all pathology and operations to his colleagues. His practice was restricted mainly to refraction and squint and, since he was of independent means, his consulting rooms were more for private study than as a source of income. Once a month he visited the villages in his canton and gratuitously served the indigent, a tradition that was continued by Tscherning.

Every phase of practical optics excited Javal's interest. His earnest support hastened the general adoption of the dioptric enumeration proposed by Monoyer. The translucent test chart used with a mirror was his device. It was his suggestion that plus and minus, trial lenses be distinguished by silver and gold rims respectively, silver for the silver hair of presbyopia.

In 1865 Javal introduced his improved optometer, which made use of a clock chart for testing astigmatism. He also introduced a cylinder axis notation, which is still in use today.

Javal's younger sister had the distinction of being probably the first person to receive systematic orthoptic treatment. Sichel, who saw her at the age of two, prescribed alternate occlusion. Another tried prisms for six years without avail. When she was sixteen von Graefe performed tenotomy, which likewise

failed to correct fully the squint. Javal eventually succeeded by orthoptic training to obtain a perfect cure, which lasted all her life.

He revived Buffon's view that squint was an anomaly of binocular vision and rejected the prevalent idea that the ocular muscles were primarily at fault. He originally hoped that orthoptic training alone, together with functional training, would offer more chances of success. With the courage of his convictions, he had tenotomy performed on his sixteen-month old nephew. Then the child wore a shield on one eye or the other for the next seven years. Stereoscopic exercises were started at the age of nine and continued for three and a half years, with the ultimate reward of a normal appearance and stereoscopic vision.

As for the ophthalmometer, Helmholtz invented a similar instrument which depended for its actions on two glass plates. Coccius had made an improvement by substituting for the plates a double refraction prism. Javal retained the prism but improved the instrument greatly with the aid of Schiötz.

In addition to many articles he wrote several books. His "Manuel du Strabisme" was widely celebrated. This was followed by a book of higher character, the "Mémoires d'Ophthalmométrie". The third book will be described shortly.

In his sixties Javal began to go blind from chronic bilateral glaucoma, and soon he lost his sight completely. Instead of disappearing from the world, he wanted to do all he could to relieve the lot of the blind. The results of his thoughts, considerations, and inventions are in a little volume entitled "Entres Aveugles", or, in the English translation, "On Becoming Blind".

In his book he speaks of many things, mainly how dependent the blind are on the assistance of others. He tried to replace sight with other senses. The use of a long wand was better than a cane. There are many household occupations the blind can perform. Some professions, such as music and teaching, are within their reach. Neatness, hygiene, and health need assistance of others. An example is given of mud from a puddle splashed on the clothes. Meals and eating are difficult. A watch without a crystal and a chime clock are of great help to tell the time. Walking in both town and country presents many problems. Exercise is important, and a tandem tricycle helped a lot. Traveling is difficult but not impossible. It is hard to make new friends, and old friends often disappear. People frequently do not identify themselves on introduction; and they won't tell when they depart, leaving the blind person talking to empty space. Then they won't inform him when they return. He had a trick, when sitting with someone on a couch, of holding slightly a fold of that person's clothes, so he could tell if that person got up and left. It is important to have someone read aloud newspapers, journals, and books. Handwriting can be achieved by the use of several techniques. Typewriting and phonography are certainly possible. The use of Braille, though

slow, is a big aid. Maps, plans, and sketches can be stamped in relief. Music can give much pleasure. Dominoes, checkers, cards, and other games can help pass the time. Smoking a cigar creates problems on lighting, keeping it lit, and putting ashes in proper receptacles. Memory is important. He felt that Esperanto would help, but it never caught on. He did not feel that marriage was contraindicated except when the blindness was due to a hereditary disease, although there could be many social and economical problems. The sixth sense, or the "sense of obstacles", was possessed by many blind, wherein they could tell when an obstacle was in their paths. Some blind can travel independently thanks to this sense.

This little book was possibly the first written on the topic and in all probability gave comfort to the blind and compassion and understanding to the sighted. The book was published in 1903, and Javal died January 19, 1907.

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