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Another organization underway:

In 1971 William F. Billman, O.D., then a student, organized a series of informal meetings of a small group of optometry students and faculty members at Indiana University for bible study. They dubbed themselves The Fellowship of Christian Optometrists, or FCO. In 1974 Professor Clifford Brooks, O.D., served its campus affiliation as the group's faculty sponsor.

Aware of similar activities occurring at several optometry schools, Dr. Brooks, with Lon S. EuDaly, O.D. of Missouri, and Michael Goen, O.D., of Florida, undertook to formalize the movement as a world mission by preparing by-laws and registering a charter in the state of Indiana as FCO International, Inc., and in 1987 with the U.S. Internal Revenue Service as a not-for-profit corporation.

Its first publication, FCO International, a four page 28 x 22 cm. paper, appeared in the Summer of 1987 as Vol. 1, No. 1. The above information was derived from an article therein by optometry student Karen Brown, President of the Indiana University Chapter (apparently the first) of FCO International, Inc.

Author of the discerning eye:

As previously mentioned in this newsletter, Vol. 14, No. 1, January 1983, p.7, Sir Arthur Conan Doyle (1859-1930) was quite unsuccessfully a physician and oculist. More recently in Ophthalmic and Physiological Optics, Vol. 7, No. 3, 1987, p. 335, further commentary elaborated briefly on this fact.

Doyle completed his medical training at Edinburgh in 1881. "It was, perhaps, the relative leisure afforded by the quietness of his practice that gave Doyle time to pursue his literary bent." This resulted in several books in the immediate few years.

Still determined to continue his career in medicine in 1891 he put up his plate in fashionable Devonshire Place as a "Consulting Oculist." Alas, he reported, "Every morning I walked from the lodgings in Montague Place, reached my consulting rooms at ten and sat there until three or four, with never a ring to disturb my serenity."

It was this lack of success and a severe attack of influenza that convinced him that he should commit himself to writing rather than medicine.

German contributions in contact lenses:

"Die international Bedeutung der deutschen Kontaktlinsenoptik" (The international significance of German contact lens optics) is an historical article by Heinz Baron in the March 20, 1987, issue of the Deutsche Optiker Zeitung, vol. 42, no. 3, pp. 110-112 and 114-116.

Recognizing the one hundredth anniversary of Adolf Eugen Fick of Zurich in the Archiv fur Augenheilkunde, Dr. Baron identifies the three year period of 1887-1889 as the "pioneer period" because of the simultaneous independent developments of several in Zurich, Paris, and Kiel. He also gives appropriate credit to the prior contributions of Leonardo da Vinci, Rene Descartes, Thomas Young, John Frederick, William Herschel and others in providing early theoretical concepts and foundations.

The intermediate years or "middle ages" are then identified as 1889-1945, and the "modern times" are grouped from 1946 on. For each period he describes the technological and clinical advancements. In a separate section he describes the part played by the German ophthalmic optical industry. In a final section on related activities he concludes that German optometrists, ophthalmologists, and opticians have consistently played an important role in the very international development and application of contact lenses. Seventeen original references are cited.

In the immediately following April 20 issue of the same journal, vol. 42, no. 4, Dr. Baron provides a guest editorial on "100 Jahre Kontaktlinsen - und wie geht es weiter?" (A century of contact lenses --so what is next?) He also authors a chronology (pp. 112-113) entitled "100 Jahre Kontaktlinsen: ein geschichtlicher Uberblick" (A century of contact lenses: an historical overview). The chronology follows the same outline as his earlier article but in year by year sequence and including major contributors in other countries.

Supplementing these in the same issue are a reprint (pp. 114, 116-119) of Dr. Fick's original article in 1888 in the Archiv fur Augenheilkunde, vol. 18, pp. 279-289 entitled "Eine Contactbrille" (A contact lens) and a reprint (pp. 120-123) of part III of the doctoral dissertation of August Muller at the University of Kiel (Germany) in 1889. The dissertation was entitled "Brillenglaser und Hornhautlinsen" (Eyeglasses and corneal lenses) of which part III dealt with the latter.

#### Origins hard to find:

The Philippine Association of Optometrists is at least thirteen years older than we thought it was. The following paragraphs in a July 31, 1987, letter from OHS member Claro Cinco, O.D., of Cebu City, The Philippines, explains:

I found from my files an old pamphlet, which obviously belonged to my late father, entitled "Optometry Law - Enacted 1917, Revised 1919". This could be the only available pamphlet saved. I never realized that this law was written in Spanish. Herewith is a copy for whatever it may be worth to you or the archives of the AOA.

What could be the first organization of optometrists in the Philippine was the Philippine Association of Optometrists. The only available indication that this organization existed is from the above pamphlet which bears the credit "Published by the Philippine Association of Optometrists - March, 1919." Other than this piece of information, nothing much is known of this organization and no

mention of it or reference made in optometric literature in this country. It is amusing to note that the official English name of the present Samahan Ng Optometrist Sa Pilipinas is also "Philippine Association of Optometrists." It was commonly thought that the first optometric organization in the Philippines was the Optometric Association of the Philippines which was established in 1932, until the above discovery.

The letter and the copy of the law will be forwarded to ILAMO.

### Iconographic spectacles:

The Science Museum on Exhibition Road, London SW7 2DD, England, includes in its optics section an excellent display of spectacles derived mostly from the collection of M.W. Dunscombe contributed in 1947. One of the exhibit legends explains that the word "astigmatism" was coined by William Whewell, Master of Trinity College, who also invented the word "scientist."

Included in the wide variety of optical exhibits is a most realistic appearing fibre glass cast of a gravestone labeled as that of "Margaret Shields, Scotland, ca. 1727." Carved in the stone are two skulls, both wearing spectacles!

Legend on the stone includes the phrase "his age 12 years", in which the pronoun "his" seemed of the wrong gender for "Margaret." A telephone inquiry to Dr. Jon Darius, the curator in charge of the optics section, elicited the following response:

I have pursued your inquiry by telephone concerning the gravestone of Margaret Shields.

The phrase "his age 12 years" appears on the gravestone after the letters JB and JW (or TB and TW), and underneath them AB. So it is reasonable to surmise that these were her progeny or at least other members of the Shields family. The phrase patently does not refer to Margaret Shields herself.

Although there are published articles on iconographic symbols (such as tools of trade) on tombstones, there is no published reference to my knowledge to the gravestone of Margaret Shields, found by chance by one of our Museum curators in a churchyard at Kirkliston, Lothian, many years ago. It would be interesting to learn of the existence of any similar gravestones depicting spectacles. You might like to enquire through the medium of your Newsletter of the Optometric Historical Society.

### Smelting for gold:

A clipping from the August 5, 1987, issue of The Antique Trader, vol. 31, no. 31, shows a half-front-page photograph of several pair of antique eyewear. The issue includes a two page article by Marlyn L. Mangoles entitled, "The Eyes Have It: Collecting Antique Eyewear" with seven more photographs by Norma Milner. All illustrations are of early

1900 eyewear and apparently are derived from the collection of OHS member Jay DeMesquita, O.D., as he is mentioned several times in the article. He is credited with owning some 400 items of antique eyewear, including four pair of spectacles made in John McAllister's shop.

An interesting point is made regarding the paucity of spectacle frames made of precious metals, of which there originally were millions and millions. They were melted down! For many years optometrists and opticians routinely kept a receptacle for old frames to be shipped periodically to the smelters for gold recovery.

Thanks to OHS member James Leeds for the clipping.

Louis Emile Javal (1839-1907):

Recently OHS member James Leeds loaned me two old books which he felt deserved a few comments in this newsletter. They are "ENTRE AVEUGLES" by Emile Javal, Paris, 1903 and "ON BECOMING BLIND", an English translation by Carroll E. Edson, New York, 1905. Some years ago I had read Thomas Hall Shastid's biographic report on Dr. Javal in the American Encyclopedia of Ophthalmology, which included a glowing review of this book and Edson's translation. However, this is my first exposure to the books themselves.

Because I have worked very closely with an organization of blind persons for almost two decades and enjoy a circle of fine friends among them, and having extensive experience in visual science, I quite naturally have tried to be alert to any resources that would help me appreciate the blind person's world. Much has been written by many, but so little by persons who had scientific minds and were also blind. Javal was the rare exception. Trained originally as an engineer, later in medicine and ophthalmology, an observing scientist and inventor, he had lost his sight quite suddenly at age 62 from chronic bilateral glaucoma. In the introduction to his book he modestly wrote, "I set forth in the pages which follow the results of my experience and researches; I ask the indulgence of competent persons, for I am only a parvenu in blindness" He added, "I write for the family of the blind."

In spite of my own extensive association with blind persons and my career-long visual science interest, Javal's book was to me a chapter by chapter revelation. If I were again designing an optometry curriculum I would include the book as a required reading assignment on which I would then test each student for comprehension. Much of the information in the book was of course already somewhat familiar to me, but so very much was not.

The 27 chapters deal with phases of living that simply may not occur even to the most attentive typhlophile. Described are the nature of dependence on others, the enhanced utility of other senses, capabilities around the house, capabilities in one's professional field, maintenance of neatness, hygiene, and health, coping with one's dwelling, handling meals, keeping track of time, taking walks, the merits of a tandem tricycle for transport, hints for blind travellers, holding a circle of friends, on being read to, handwriting skill, typing, voice recordings, Braille, handling correspondence, use of maps, plans, and sketches,

the role of music, kinds of games, how to smoke, the use of mnemonics, the value of Esperanto, should blind persons marry, is there a "sixth sense", the psychology of the blind, and useful public resources.

The special beauty of the book is its casual and straightforward literary style with no pulling at heart strings, no appeals for sympathy, and no sense of bitterness or tones of anger or defeat. Neither is there any indulgence in levity, but it provides such fascination in learning that the smoking of a cigar serves as a measure of elapsed time, that blind persons want to open their own mail, that the departure of a visitor without oral notice often leaves the blind person talking to no one, that it is easier to take walks at night than in the daytime, though carrying a lantern may help prevent collision with others, etc.

The historical significance of this book is simply that a better one seems never to have been published. It deserves to be reprinted.

H.W H.

### Signs of ocelli:

The commentary on Jules Romains's "Eyeless Sight" in the July issue prompted past OHS president James Leeds to describe his own fascination with the book and the theory it espoused. He had acquired and read the book almost 30 years ago. Like all of us, he continues to be impressed by the apparent "obstacle sense" which keeps blind persons from colliding with objects which we normally consider only visually detectable. He illustrates the perplexity with the following personal observation.

I knew a blind gentleman, now deceased, who was the husband of a patient. He had two enucleations from glaucoma. She was crippled, so he was her legs. She would drive him to a location (she ran a stenographing and duplicating service) and he would take her packages unerringly to the right location. Once she brought some things to my home when my children were small, and I told them to watch him through the windows. He came up a flight of stairs and walked to the front door and rang the bell, delivered the packages, and returned to the car, going down the steps. Then I told the children that he was blind, and they were amazed. At a later time, I told him of the book "Eyeless Sight", which interested him. His main comment and the reason for all this writing, was that he said he could never wear a hat. (I had never noticed he was invariably hatless.) He said if he wore a hat, he would bump into everything. Perhaps he had ocelli in his forehead!

### The search for historical clues:

Recently I attended a public lecture on the history of 16th century France by Professor Natalie Zemon Davis. She is a renowned history scholar whose interpretations of life in that era have led to substantial revisions of the history books, even in France itself.

Of special interest to me was her statement that to rely more or less exclusively on the diaries and records of royalty and of principals of the church was largely to overlook the involvement of the illiterate masses. She reminded us that among them were intelligent but nonpublishing leaders, thinkers, and trendmakers. I was reminded that optometry too has over 500 years of unpublished but demographically significant and socially meaningful history buried, if not totally lost, in the secrecy and illiteracy of the spectacle-making guilds, however influential they may have been.

What was Professor Davis's discovery? She found that so much could be found in the legal archives of France, the secretarial notes and records of complaints, allegations, and judgments involving the variety of infractions by members of the hoi polloi, whether street urchins, slaves, peasants, merchants, soldiers, housemaids, or grooms. Thefts, vandalism, indebtedness, drunkenness, insolence, infidelity, divorce, etc., are not exclusive to any social category or caste. Hence the archives of the magistrate can reveal much about the daily life and circumstances of common litigants, be they pickpockets, storekeepers, mothers, or, yes, even spectacle vendors. Such details are not recorded without bias in the archives of royalty and the church.

What prompts my brief essay?

It so happens that because this newsletter is on the official list of serial optometric publications we editors receive innumerable routine news releases. Obviously these are sent to us in the hopes that we will publish them or at least comment on them in our columns. Surely 99.9% of these have no immediate historical significance, but we do scan each release in search of the possible 0.1%.

One such item costing 90 cents for first class postage recently arrived from The Center for Judicial Studies, Cumberland, Virginia 23040. The letter of transmittal from its president James McClellan addressing us as "Dear Colleague" identified his accompanying document as a Constitutional Impact Statement, a study dated August 1987 by James Bond, an Adjunct Scholar for the Center "who is also Dean of the University of Puget Sound School of Law." The title of his study is "Ophthalmic Practice Rules" and deals with the constitutional legality of the PROPOSED TRADE REGULATION RULE 50 FED. REG. 598 (JANUARY 4, 1985) EYEGLASSES II, a 20 page opinion.

As I perused it with great interest I was reminded of Professor Davis's comments. Here is a document derived completely outside of the ophthalmic literary milieu dealing with a current issue which is keenly felt by every optometrist. Yet, among its 32 cited references, not one is in an optometric, ophthalmological, ophthalmic, or optical publication, nor likely to be even vaguely familiar to more than perhaps a half dozen ophthalmic practitioners. In this instance, because the document appears obviously to have been distributed to a hundred or more ophthalmic editors, it can be hoped that the professions will be appropriately alerted. In my more than 50 years as a student of optometric affairs, however, I find this an almost absolutely unique instance of deliberate sharing of knowledge from the field of law to the field of optometry.

What wealth of other hidden historical optometric tidbits must be in the legal realm of the world!

One may of course ask, what does this document reveal that we do not already know, or care to know. Perhaps very little in the practical sense of the moment. But when the optometric historians of the 21st century attempt to visualize and interpret trends of the present century, will they gain a clear understanding from the easily reviewed sources in the ordinary and narrowly collected optometric archives alone? Indeed not.

The document at hand makes the sophisticated argument that the proposed ophthalmic practice rules violate the federalism precepts of our United States constitution. It makes no point of the fairness or logic of the rules as we optometrists are wont to view them. Such are the biases that will plague the 21st century or later historian who does not delve into every nook and cranny for clues and traces of the factors in today's developments.

Surely, for example, in the courthouse basements and attics of even our American midwestern counties there may be the fading notes of an earlier century justice of the peace identifying the complaints of a local resident against an itinerant oculist, optician, optometrist, spectacle peddler, or eye surgeon. One can imagine a wide variety of comparable historical gems. They will hardly be found in the ophthalmic literature or even in the church records.

The theme of my comments is simply that we who share even a casual interest in ophthalmic history need to be constantly alert to the potential that traces of optometry's heritage may lurk on the shelf of an abandoned train depot, in the messages carved on the wood beam of an old barn, in attics, basements, old photographs, archeological diggings, and elsewhere. To make a mission of pawing through various accumulations in hopes of a find is likely to be boring and disappointing, for the odds are overwhelmingly slim. But staying simply alert, as in noticing the first buds of spring, can give a richness to one's cultural appetite even in total failure.

H. W H.

#### 70th and 75th anniversaries:

The ophthalmic optical anniversaries of two establishments were separately but almost simultaneously recognized in April in Jena, East Germany. One was the opening of the Department of Medical Optical Instrument Manufacturing at the Zeiss firm on April 1, 1912, under the direction of Professor Otto Henker. The other was the founding of the optometry school on April 21, 1917, as the "Grosserzoglich Sachsische Optikerschule" (Saxon Grand-ducal School of Optics) now known as the "Fachschule fur Augenoptik Hermann Pistor" (Hermann Pistor Academy of Optometry). Commemorating these two events are historical articles in the July-August 1987 issue of Augenoptik, vol. 104, no. 4.

"70 Jahre Fachschule fur Augenoptik Hermann Pistor" by W. Horichs is on the inside front cover opposite page 105 and includes a few comments about events leading up to the opening. "75 Jahre optisch-medizinischer Geratebau in Jena" by H. Sanger is on pages 106-108 and includes portraits of Alvar Gullstrand, Moritz von Rohr, Otto Henker, and H. Hartinger as well as illustrations of early models of the Nordenson retinal camera, the Gullstrand ophthalmoscope and slitlamp, the Henker refractometer, an ophthalmometer, and the first sight-testing apparatus.

On the front cover of the same magazine but quite unrelated to either of the above is a colorful 19th century East Asian print of a lady with rice bowl, perhaps a decorative table cover, on which are placed a pair of rock crystal and a pair of smoked topaz spectacles of presumably the same period. Unfortunately no clarification is provided.

### 59 Years ago:

What was a continuing optometric education lecture like in 1928? We now have a copy of an example. A mimeographed document was found by a friend of O.H.S. member Benjamin Nerenberg, O.D., of Los Gatos, California, among many old papers held by a member of the Santa Clara County Optometric Society. At the top of this copy was a signature of the late Dr. Ed Cochran who had practiced in San Jose.

The lecture, or lecture course, was by Dr. Eugene G. Wiseman of Buffalo, New York, to the members of the Los Angeles County Association of Optometrists on December 18-19, 1928, in Science Hall, the University of Southern California, Los Angeles, at which time the Los Angeles School of Optometry was on the university campus. Dr. Ernest A. Hutchinson, then head of the Los Angeles school, introduced Dr. Wiseman as the author of three optometry books and explained that these lectures would be incorporated in a new book in preparation. The mimeographed document itself appears to be the recording of a stenographer, as a preliminary footnote explains that "The first part of this lecture course covering the evolution of the animal and of man has been omitted from these notes which begin with the evolution of the visual sense."

The stenographer's notes total 21 pages, over 14,000 words. The major subdivisions are "Evolution of the Visual Apparatus", "Influence of Eyes upon Mind and Health", "The Nerve", "The Reflex Arc", "The Neuron", "Physiology of Nerve Action", "The Cell", "The Muscle", and "Practical Application."

Were the lectures as dull as might be suspected from these subtitles? Not really, for Wiseman gave almost every concept a light descriptive touch. For example, this paragraph: "The fish was a very useful progenitor of man. From it we got our vertebrae, our brain, our ears, our spinal cord, our cage of bones for the protection of internal organs. Bones that are inside the body instead of outside shells".

Bearing in mind that these hours of lectures were attended by optometrists who typically had a minimum of collegiate education and that the date was less than a week before Christmas, one must admire the prevailing determination of these very recent predecessors of ours.

The document is being forwarded to the International Library, Archives, and Museum of Optometry, Inc.

For lack of recorded evidence:

The milepost book by OHS member Claro M. Cinco, O. D., entitled OPTOMETRY AND RELATED JURISPRUDENCE, Filoptics Industries, Inc., Cebu City, Philippines, 1987, is not only a historically significant document in itself but it also includes a special preliminary account, pages ix-xv, of optometry's origins in the Philippines. No doubt correctly, but perhaps too conclusively, Dr. Cinco makes the opening statement that "At the turn of the century, there was no established record of optometry in the Philippines." One might clearly interpret this to mean that optometrists did not then exist in the Philippines even as sight-testing opticians or as spectacle-fitting retailers.

Cinco then points out that the first optometric office was established in Manila in 1902, and that in 1917 the first Philippine optometric association was organized. Also in 1917 the first optometry law was enacted and more than a hundred optometrists became registered in the same year, with many more registering in 1919. The inference would seem to be that within less than two decades optometry emerged phenomenally from a single pioneer or two to a well organized and politically influential profession of well over one or two hundred established practitioners who acquired their licenses under the "grandfather" clause of the new law.

I feel certain this is not the interpretation that Dr. Cinco intended to convey by his eminently correct statement that there was no "established record" of optometry in his country at the turn of the century. It seems probable that numerous optometrists under the identity of sight-testing opticians and spectacle retailers were already serving the public there as private entrepreneurs long before 1900, if only as part of the commercial and cultural impact of centuries of Spanish rule.

In other words, the lack of established records in the Philippines, as in much of the rest of the world, may well be due to the nonpublishing pattern and guild-controlled secrecy of the first five centuries of spectaclmaking, a nevertheless thriving and respected enterprise. With Dr. Cinco's bent for history and his talent for sleuthing we can hope that he may now search early church archives, museum collections, commercial documents, and elsewhere for traces of evidence that optometry was there in one form or another long, long, before 1900.

H. W H.

Two new memorials:

Funded by Silor Optical, Inc., the Herbert L. Moss Memorial Scholarship Award was established at the Pennsylvania College of Optometry in memory of the late Dr. Moss, an alumnus, faculty member, and internationally known optometrist.

The Carol B. Pratt Scholarship Fund has been established at the Pacific University College of Optometry in memory of the late Professor Pratt from donations received from numerous friends. In 1945 Dr. Pratt was a leader in the transfer of the North Pacific College of Optometry to Pacific University.

Charles Sheard humor:

OHS member David Cline, O.D., writes, "I was very interested in reading the account of Sheard's 18 point exam and the later 21 point O.E.P. exam but I wish to add that I was fortunate in getting to know Sheard when he was at the Los Angeles College of Optometry and in our discussion he stated (and I think this is approximately verbatim) 'It is said that I am the father of the O.E.P. but if this is so I do not recognize my own child.'"

Extracted from a 1902 novel:

From his collection of rare ophthalmic books Dr. James Leeds loaned me a 1902 copy of DOCTOR BRYSON, a novel by Frank H. Spearman, published by Charles Scribner's Sons, New York. In it Doctor Bryson is portrayed as the young surgeon-in-chief for the eye at the Laflin College for the Eye and Ear in the heart of downtown Chicago. Written in very popular style, the plot deals with the romance between the oculist and a young wife of a separated but not divorced husband whose small child is Dr. Bryson's patient. The young wife and daughter and Dr. Bryson live in the same stately room-and-board residence home.

The book is of present historical significance insofar as it may be presumed to reflect at least the author's, if not his readers', concepts of eye doctors of its era. The clinical and professional aspects are a very small part of the text, but they suggest that the author had informed himself quite well about both optometric and ophthalmological matters.

For examples, Doctor Bryson mentions in appropriate context the use of finger counting for acuity, the need for glasses, the nature of hysterical amblyopia, the neutralizing of plus with minus cylinder, the lines on a letter acuity chart, 20/20, glaucoma, the ophthalmometer, the mirror retinoscope, the mirror ophthalmoscope, the retina, the use of a magnet to remove a piece of steel, cataract lenses, and intraocular tension as well as numerous surgical techniques. Not stated, but implied, is that the dispensing of glasses takes place in the eye clinic. Discussing some office experiences with a friend on a Lake Superior vacation cruise, Dr. Bryson comments, "Day before yesterday I sat in the office till noon. The clinic was pretty heavy and the strange thing is, those cases come in groups. One day it is all one thing, myopia or astigmatism, or foreign bodies, and the next, perhaps, all old people with cataracts or mere presbyopia. Day before yesterday there were seven cases, and bad ones, every one, of choroiditis. That's more choroiditis than the ordinary oculist runs against in a month."

One must of course realize that the story was written as a popular novel rather than with any documentation objective. Nevertheless, to induce the reader's credulity the text must reasonably reflect the then prevailing concepts in the public minds. I personally found its portrayal of ophthalmic services to be at a substantially more sophisticated level than I believe them to have prevailed at the turn of the century. On the other hand "Laflin College" was represented in the story as one of international fame.

According to Who Was Who in America the author, Frank Hamilton Spearman (1859-1937), attended Lawrence College in Appleton, Wisconsin, published numerous popular books, short stories, and economic reviews between 1900 and 1925 and was awarded honorary degrees by Notre Dame University, Santa Clara University, and Loyola.

H. W H.

Newton memorialized in stamps:

Recent correspondence with O.H.S. member Derek C. Davidson, organizer of the Ophthalmic Antiques International Collectors Club, has netted samples of two optically commemorative British postage stamps. One is a colorful 34 pence stamp illustrating the earth with a solar battery in orbit together designated "The Systems of the World" and subtitled "Sir Isaac Newton (1642-1727)." The other is a 31 pence stamp illustrating a spherical flask with colorful contents and the reflectively distorted words, "OPTIKS OR TREATISE OF THE REFRACTION REFLEXIONS AND COLOURS OF LIGHT" with the subtitle "Sir Isaac Newton (1642-1727)."

Mr. Davidson reports that six or seven Newton stamps were issued in 1987.

Revealing an anonymous author:

About two years ago my favorite challenger Jim Leeds loaned me an anonymously written book with the mere comment, "This will fascinate you." It did.

A small book of over 300 pages, 16 x 10 x 2.3 cm., handsomely bound in hard brown cover with the title LIGHT AND VISION embossed on the spine, it was published in 1836 and identified on the title page as DISCOVERIES IN LIGHT AND VISION WITH A SHORT MEMOIR CONTAINING DISCOVERIES IN THE MENTAL FACULTIES. It was not copyrighted, but following the title page is the statement that it had been "Entered according to the Act of Congress of the United States of America, in the year eighteen-hundred and thirty-six, by G. & C. Carvill & Co., in the Clerk's Office of the Southern District of New York." Further identified are, "SCATCHERD & ADAMS, PRINTERS, 38 Gold Street."

The text was almost flawlessly edited with only 10 errata. The writing style is in first person and clearly intended to be easily understood by any intelligent reader with an appreciation of scientific method. Simple references are made to familiar objects like window blinds, candles, a string and beads, etc., but plenty of more highly technical terms like muscae volitantes, hyaloid membrane, crystalline capsule, etc. are so routinely and correctly included in the phraseology as to make it evident that the author was a scientific master such as a professor of ophthalmic surgery or an anatomist. The spellings of flavour, colour, etc. suggest that the author was British rather than American. In the author's dedication he or she points out that the contained opinions are "so much at variance with the philosophy of the schools" that "it could be indelicate to make use of" any scientists' names in dedication lest "they should lose caste by being associated with the work". The memoirs are therefore dedicated to the famous American poet William Cullen Bryant, who is identified as a trusted friend.

The more than two-thirds of the book under the topics of light and vision deal with 17 experimentally observed phenomena, some with surgically excised animal eyes, several as entoptic effects of pinhole experiments, various optical reflection and refraction effects of fluid drops, etc. Altogether the reported observations seem quite valid but some of the theoretical interpretations are poorly conceived.

Perhaps the least excusable interpretation was the conclusion that the eye does not perceive an inverted image. The author had observed that a distant candle flame formed an inverted image in the retinal window of an excised animal eye, but if the retinal window of the animal eye was brought very close to the author's own eye, as one holds, for example, an opera glass, an object, such as a pin, held near the cornea of the excised eye was perceived upright. It was this upright image, according to the anonymous author, that is conveyed visually to the brain by an unexplained optic nerve process. This notion was of course completely at odds with that of the author's contemporary scientists, including Sir David Brewster, who is identified repeatedly with considerable hostility. Annoyance with Brewster is expressed in various connections, including angry disagreement as to the roles of voluntarily induced vs. externally forced movements of the human eye on perceived movement of afterimages. At one point, p. 99, the anonymous author makes the only statement in the book that gives a possible clue as to his or her identity with the comment, "This discovery I made known in Sir David Brewster's magazine".

With piqued curiosity I then sequentially sought the help of History of Medicine Librarian Christopher Hoolihan at the University of Rochester, the Administrative Office of the United States Courts, the Library of Congress Reference Division, and the archives of the Copyright Office, with no clue as to the identity of the anonymous author. Next I started a page-by-page search of the many issues of the Edinburgh Journal of Science edited by Brewster, some obtained by interlibrary loan, some on microfilm, and several at the University of Toronto which I visited during the 1986 American Academy of Optometry meetings in Canada. My first reward was a scathing commentary by Brewster entitled "Farther Observations on the supposed Optical and Physiological Discoveries of Mr. Charles Bell," in the October 1826 issue, Vol. 5, No. 2, pp. 259-268. His reference was somewhat vaguely to a lecture by Sir Charles Bell before the Royal Societies of London and Edinburgh and to its being "printed in a periodical now at an end." The latter comment suggested the Edinburgh Philosophical Journal, which had been edited by Brewster and the title of which was terminated in 1826.

At last, therein, Vol. 12, No. 24, 1825, pp. 371-382, appeared an article by "Charles Bell, Esq., F.R.S. &c. read before the Royal Society of Edinburgh, March 21, 1825." Indeed the text had a style, tone, and level of sophistication startlingly similar to, though a bit more formal in manner of expression than, the anonymously authored book. Further, it expressed the same objections to Brewster's criticisms and defended the very same theory of the effect of voluntary vs. externally forced eye movement on direction perception defended in the book.

I placed the two documents side by side, the article and the book, in hopes of finding some identical phrase to clinch my conclusion that the book's author was none other than the renowned Scottish surgeon and anatomist Sir Charles Bell (1774-1842). I did find a few, none of which alone might serve as proof, but I can say that as I scanned back and forth from one to the other the similarity of style was so great that I repeatedly had difficulty reminding myself which text I was reading at the moment. Even the sketched illustrations in both showed similarities of construction, line weights, and lettering.

Remarkably, my extensive but less than complete search of biographical information on Bell uncovered no reference to the Brewster-Bell hostility or even to their acquaintanceship with each other. This search included the publication "Letters of Sir Charles Bell selected from his correspondence with his brother George Joseph Bell", London, 1870, which also included a chapter on "Lady Bell's Recollections". In it I found absolutely nothing to suggest that Sir Charles wrote the mystery book or even gave thought to Brewster. What is apparent, however, is that he had an extremely wide range of scientific and cultural interests, that he wrote prolifically of many, that he took on challenges readily, and he had the ability to write in popular as well as formal style. Even Brewster criticized Bell for using this last skill and his fame to propagate unproven concepts.

Why would Bell have published an anonymous book under the permissive guise of being a lay American author? Whatever the reason, it seems to have had fair distribution, is listed in a number of bibliographies, and can be found in numerous libraries. According to one very knowledgeable librarian a copy in good condition would probably sell for \$50.00 or more. Attributable to Sir Charles Bell, it can serve to illustrate vividly some of the most sophisticated thinking in visual science a century and a half ago.

H. W H.

#### History of a flash.

In 1882 the popular French writer Jules Verne published a novel entitled "Le Rayon Vert" (the green ray) which was translated into several languages. It was a fascinating description of the journey of a young Scottish girl to the west coast of Scotland to gain a free view of the setting sun so she might observe the elusive "green ray", believed to be a luck symbol or charm.

Verne offered no technical explanation of the phenomenon, suggesting rather, through the romantic girl's suitor, that it might be supernatural in nature. Perhaps Verne had been aware that the phenomenon traces back to ancient Egyptian writing and thought it useful in the plot of his story.

In 1922 Professor Dr.M.E. Mulder, Emeritus Professor of Ophthalmology, authored a 141 page paper-backed monograph entitled THE "GREEN RAY" OR "GREEN FLASH" (RAYON VERT) AT RISING AND SETTING OF THE SUN, published in The Hague, The Netherlands, by N.V. Boekhandel, W.P. Van Stockum & Zoon. A copy is in OHS member James Leed's rare book collection. Essentially the book is an historical account of dozens of variously reported observations of the phenomenon of numerous individuals. The book is in English but includes extensive citations in French and German, easy for the multilingual Dutch.

Insofar as Professor Mulder himself had apparently seen the phenomenon only once, some 15 years prior to writing his review, the book conveys the impression that the phenomenon is rare, and that many doubted its validity. Further, there was lack of agreement among scientific minds as to the explanation, and there was even moderate variance as to the size, shape, duration, and precise color of the flare, flash, streak, segment, or ray. The text is reminiscent of the UFO or "flying saucer" reports of several recent decades, as dealt with by my late colleague J. Allen Hynek whose federally assigned role it was to ascertain their plausibility.

The cluster of dates of the observations reviewed by Mulder suggest that Verne's book may have prompted the numerous popular attempts to see the effect between 1882 and 1922.

Today the green flash is defined in several dictionaries and is illustrated in color, presumably a photograph, in the 15th edition of the Encyclopedia Britannica, courtesy of the Vatican Observatory. Therein it is said to be caused by refraction, absorption, and scattering of the sun's light in the earth's atmosphere and to last only a fraction of a second. It appears at the upper edge of the rising or setting sun and may be seen with the unaided eye when the sky conditions are clear and in circumstances where the horizon is sharply defined.

#### Early Zeiss instruments:

The Zeiss firm in Jena, East Germany (not the Zeiss firm in West Germany) celebrated the 75th year of the establishment of the department for optical and medical instruments with the publication of a supplement to the Jenaer Rundschau (Jena Review) entitled "75 Jahre Optische Medizintechnik aus Jena". The magazine-like supplement is a 24 page, 28 x 20 cm, full color document with a couple dozen illustrations of instruments the firm has built starting with a 1911 electric hand ophthalmoscope designed prior to the establishment of the separate department on April 1, 1912. Shown also are portraits of key technical personnel including Carl Zeiss (1816-1888), Ernst Abbe (1840-1905), Moritz von Rohr (1868-1940), Allvar Gullstrand (1862-1930), Otto Henker (1874-1926), and Hans Hartinger (1891-1960). The historical involvement of the Hermann Pistor optometry school founded in Jena in 1917 is also described.

Because this publication can be useful as a sort of atlas for identifying certain clinical ophthalmic instruments it is being forwarded to ILAMO.

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