NEWSLETTER
OF THE
OPTOMETRIC HISTORICAL SOCIETY

(243 North Lindbergh Boulevard, Saint Louis, Missouri, U.S.A. 63141)

Volume 10 April 1979 Number 2

Officers elected:

The last of five ballots finally was returned, ten weeks after they were mailed out. In fact the first came in two weeks, the second in four, the third in six, the fourth in eight, and the fifth in 10! One responder suggested that those were "Hare" ballots coming in at a "Tortoise's" pace.

The results were no special surprise, namely, with Henry Knoll re-elected as President, Maria Dablemont re-elected as Secretary-Treasurer, and James Leeds newly elected as Vice-President. Continuing as a Director is Grace Weiner, with James Tumblin as a newly elected Director.

One legacy member:

Our secretary has received a xerographic copy of a codicil to a member's last will which adds a new article to the document as follows:

"I give and bequeath the sum of One Thousand Dollars ($1,000.00) to the OPTOMETRIC HISTORICAL SOCIETY, INC., 243 North Lindbergh Boulevard, St. Louis, Missouri 63141."

Duly signed, witnessed, dated, and stapled to the will itself, this codicil now makes the O.H.S. member eligible for "legacy membership" status with full membership privileges without having to pay annual dues. In effect he lets his heirs pay his dues!

It is hoped that before the next newsletter is issued, in July, several more members will elect this status.

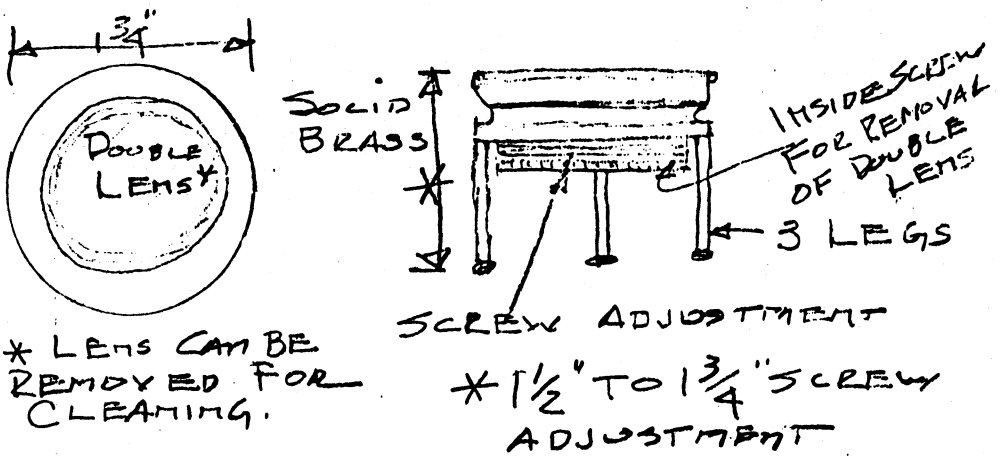
Retired but attentive:

O.H.S. member Jacob Staimen, O.D., one of our most active contributors of optometricana, recently wrote the Production Director of National Broadcasting Company to call attention to an error in the choice of spectacles for the actress playing Kate Wright in the December 17 television special, "The Winds of Kitty Hawk." Dr. Staiman noticed that Kate Wright was wearing a Ful-Vue style of frame, on which the endpieces are several millimeters higher than the datum line, a design "which did not make its debut until the late 1920's".

Dr. Staiman suggested that in future productions of period teleplays such anachronisms could easily be avoided merely by consulting the Optometric Historical Society or the International Library, Archives, & Museum of Optometry.

Quite quaint quotes:

What happens when one runs a tiny classified advertisement, a want-ad, to tell the world of one's interest in buying old books on the eye and optics? The following is a reproduced sample response hand lettered with a graphite pencil and supplemented by a self-addressed stamped envelope with the penciled notation "IF NOT INTERESTED or comments RETURN SKETCH THANKS":



DEAR DR LEEDS:

I SAW YOUR A/T WANT AD FOR OPTICS 12/6/18.

ABOVE IS AN UNUSUAL MAGNIFING STATIONERY GLASS MINT CONDITION USED FOR VIEWING STAMP OR COIN COLLECTIONS. POSSIBLY ALSO COULD HAVE BEEN USED FOR CLOSE MAP STUDY.

I GOT THIS PIECE FROM A PERSON WHO SAID IT CAME FROM A RELATIVE WHO USED IT FOR HIS STAMP COLLECTION STUDY. LATE 19TH CENTURY. COULD POSSIBLY BE GERMAN. NO MARKINGS

IF YOU CAN USE THIS PIECE IN YOUR COLLECTION I CAN SELL FOR $20.00 PLUS $1.50 FOR POSTAGE & INSURANCE.

THANK YOU A. OLSON.
155 HOTCHKISS ST
JAMESTOWN,
NEW YORK 14701

Another response, handlettered by Dick Hyatt, Box 1143, Wharton, Texas 77488, on ruled writing paper, includes an illustration of a pair of pince-nez spectacles obtained by "rubbing" the paper on the face of a brass printing block. The message reads, "Re: My List 12/18/78 The illust. above is from a very old brass printing block. Should be able to find a spot on your desk, for it. Prepaid $10.00. Merry Xmas, Dick Hyatt"

A third one was a postal card imprinted as

Lane's Repository
EARLY PRINTS, MAPS & BOOKS
107 BRYN MAWR DRIVE, SE
ALBUQUERQUE, N.M. 87106

with the following handlettered message dated 12/22/78: DEAR DR. LEEDS: WE OFFER A SET OF (16) COPPER PLATE ENGRAVED SHEETS PUB. FOR REES' CYCLOPEDIA ENTITLED "OPTICS." WITH NUMEROUS FINE ENGRAVINGS. PUB. CA. 1820. B & WHITE OCCASIONAL FOXING. FINE OLD SET....$26.50 CWO PPD. RETURNABLE 7 DAYS IF NOT SATISFIED.

How old is what's-his-name?

Prompted by the notion that next year, 1980, might be the year to celebrate Snell's birthday anniversary I checked the date of his birth in the prestigious and expensive Dictionary of Scientific Biography. Sure enough, there we are told that "Willebrord Snel (Snellius or Snel van Royen)" was born in 1580.

But the equally prestigious World Who's Who in Science tells us that "Snell, Willebrod van Roijen (Snellius)" was born in 1591. On this date Chambers's Biographical Dictionary agrees. All three list Leiden, The Netherlands, as his birthplace, and October 30, 1626, as his date of death.

Frequency of reproduction of an assertion being no measure of validity, which is to say that errors are as easy to copy as facts, we now need to await the results of a search by a good archivist. Perhaps then too we can learn to spell his various names, Willebrod or Willebrord; Snell, Snel, or Snellius; van Roijen or van Royen, correctly.

Thematic optical history:

O.H.S. member Colin B. Fryer writes enjoyably of history. He selects a theme which has some connection with optics and then describes in documented terms its origin and development. For example, in a series titled "...from the pages of optical history" which appeared in The Optician he took as his theme the variety of attempts to cope with both near and distant vision in presbyopia. Five different approaches are described in the October 14, 1977, issue, Vol. 174, No. 4506, pages 21-22.

"The evolution of best form lenses" is his second topic in the series, in the November 25, 1977 issue, Vol. 174, No. 4512, pages 33-34. He reminds us first that on the American side of the Atlantic we are in the habit of saying "corrected curve" instead of "best form." He traces the idea back to Johannes Kepler in 1611, adding some comments about Kepler's personality, as he is wont to do about each person mentioned.

Then in the January 27, 1978, issue, Vol. 175, No. 4520, pages 15-16, his historical theme is "Designating spectacle lens power." The earliest known method was that mentioned by Franciscus Maurolycus in 1554, the numbering of spectacle lenses according to the age for which they were intended to be worn. The dioptric system emerged very recently and slowly beginning with Nagel's "metre lens" unit in 1866, followed by Monoyer's naming it the "dioptre" almost 10 years later, and a still incomplete adoption of the term as late as 1915. (As recently as last week I chatted with a prominent physicist who still considers the diopter a clumsy concept!)

"Some olde tyme London opticians and their achievements," appeared in two parts in the issues of May 12, pages 35-38 & 40 and June 9, 1978, pages 22, 27, and 28, Vol. 175, Nos. 4535 and 4539.

By no means obsessed with the frequent notion that history deals only with events which predate our memory, author Fryer provided a two-part series entitled "Optics in space" in the issues of November 17, 1978, pages 31, 38, and 39, Vol. 176, Numbers 4561 and 4562. Included are such fascinating bits of information as that of the accidentally lost Hasselblad camera which continues to orbit the Earth, and that of the paradox of better visual acuity "from 100 or so miles up in space than it is from 10 on the ground."

An encyclopedia entry:

O.H.S. member Alan York is the author of Eyeglasses: Fads and Fashions in Spectacles, in the "Dogs to Fishing Tackle" volume of The Encyclopedia of Collectibles published by Time-Life Books, Inc., 1978, pages 84-93. The illustrations are especially well done.

Jena school 60th anniversary:

The optometry school in Jena, East Germany, is believed by many to have had a greater international impact on ophthalmic optical training than any other institutions, at least prior to World War II. It has been named the Fachschule für Augenoptik "Hermann Pistor" (The Hermann Pistor Professional School of Ophthalmic Optics) after its long time director.

Commentary on the 60 year history of the institution by its present Director, Dipl.-Päd. E. Klüger, is published in the November/December 1978 issue of Augenoptik, Vol. 95, No. 6, pp. 162-163, with a photograph of the building on the inside front cover.

In the same issue is a detailed and illustrated description of the instructional laboratory program in "Optologie" at the Pistor school by the chief of professional teachers (Fachgruppenleiter) Dr. rer. nat. Gunter Ueberschaar in an article entitled "Laborübungen Optologie - ein neuer Lehrstoffkomplex an der Fachschule für Augenoptik 'Herman Pistor' Jena," pp. 163-169. Experimental procedures are described for student instruction in stereopsis, dark adaptation, visual fields, acuity in ametropia, contrast, space and frequency effects in perception, color vision, colorimetry, learned and innate reflexes, ocular anatomy, ophthalmoscopy, and fixation disparity.

Early personalities in visual science:

The following is a paper prepared by Douglas K. Penisten, a final year student at the Indiana University School of Optometry, Bloomington, Indiana 47405.

A COMPENDIUM OF TRIVIA AND FACTS CONCERNING FAMOUS MEN IN THE HISTORY OF OPTICS AND THE VISUAL SCIENCES

PREFACE

The purpose of this paper is to present little-known facts and facets of some men we know by name and in many cases are quite familiar with their contributions to science. As would be expected in a work where extensive subjective commentaries and conclusions need not be drawn, the great majority of the context is taken directly from other sources. Such is the case in this paper. Therefore, for the benefit of the inquisitive, I have included a reference list. Little time is spent elaborating on the subject's scientific work rather, I have tried to give interesting tidbits in order to bring out qualities of their personalities and habits. So relax and amuse yourself with this irreverent and incomplete collection of biographies.

GEORGE BIDDELL AIRY (1801--1892)

George Airy lived to a ripe age of 91. In that lifetime he published 518 articles and several books (one on the invasion of Britain by the Normans). His primary achievements were in astronomy, but he made major contributions in the area of technology and applications of science.

Airy was a great organizer of not only his own knowledge, but also with scientific record compilations. He modernized the Greenwich Observatory with new inventions, many of which were his own. Although he brought Greenwich to the level of the world's best observatories, he still ran the institution like a petty tyrant, hiding little of his conceited and envious disposition.

Airy made every effort to solve all problems he confronted. This quality served him well in his engineering, "but in science it caused him to make mistakes through undertaking too much, often with dogmatic confidence." He is remembered more for his failures. Two examples being his rejection of Faraday's "lines of force," and his role as villain in the failure of J.C. Adams and the discovery of Neptune.

Despite these sour remembrances, he excelled as the seventh Astronomer Royal (1835--1881) bringing much prestige and organization to British astronomy. Perhaps his greatest gift to mankind was the first spectacle correction for astigmatism, which he designed for himself in 1824.

CHARLES BABBAGE
(1792--1871)

The obituary notice for Charles Babbage in the London Times stated that he had lived to be almost 80 "in spite of organ-grinding persecutions." Although the remark was a bit cruel, it does bring to light the eccentric nature of Babbage. Among his many quirks, he hated street musicians so vehemently that he attempted to have them legally banned.

The son of a wealthy banker, Charles entered Cambridge in 1810. There he became good friends with John Herschel and George Peacock. The three formed the Analytical Society and made an oath to "do their best to leave the world wiser than they found it." Each went on in his respective field and lived up to the oath.

Babbage's life work stemmed from a conversation with Herschel in 1822, during which he complained of the errors humans had made while compiling math tables, "I wish to God these calculations had been executed by steam." "It is quite possible," remarked Herschel. For most of his remaining life Babbage constructed huge and complicated calculating machines in hope of achieving his wish. Unfortunately, before he would finish one machine he would get an idea and start building another. This habit of not finishing his work caused many to wonder about Babbage's credence, but Thomas Huxley remarked, "I knew Mr. Babbage, and am quite sure that he was not the man to say anything on the topic of calculating machines which he could not justify. . . . "

Charles did find time to invent other "odd" things, including the cow-catcher on a train, the first speedometer, and skeleton keys. He also is known as the father of the "grant" for his extensive work in popularizing the concept of government funding of scientific work. Perhaps his most interesting invention was the ophthalmoscope, which he made four years before Helmholtz. He gave it to a physician friend who merely set it aside and did nothing more with it.

Babbage once said that he would gladly give up the remainder of his life if he could be allowed to live three days five hundred years hence and be provided with a scientific guide to explain the discoveries made since his death. For sure, during his lifetime Babbage was viewed as a failure, but as he probably knew, the future scientists would judge him differently. And that they have.

BENJAMIN FRANKLIN
(1706--1790)

Anyone associated with the visual sciences knows Benjamin Franklin is credited with being the inventor of the bifocal, but this is merely a drop in the bucket when one looks at his lifetime accomplishments. His achievements included works in politics, science, diplomacy, and the welfare of human rights.

Franklin was an extremely sociable man. Besides reading, studying, and experimenting; he loved spending leisure time in the company of philosophic friends, "communicating to each other new discoveries, and proposing improvements of old ones." The list of his firends and acquaintances is phenomenal.

Why is it Franklin has been called the "Newton of Electricity" when it is well known that Franklin's grasp of mathematics was quite limited? The answer lies in the ability Franklin had for the experimental style. He had an uncanny eye for observation and following through with applicable experiments in attempts of validating his hypotheses. An example can be seen with his work in the relationship of heat and color. He simply cut out pieces of cloth of varied colors and laid them in snow observing the relative depth each one sank as the snow melted.

Franklin's inventions were extensive. The more famous include the lightning rod, the Franklin stove, and even a device to obtain books from the shelves without getting up. His inventions were mainly utilitarian in nature, but later expanded to basic scientific research. During Franklin's time, the only use for electricity was shock therapy to help paralysis, of which Franklin himself occasionally partook. It took a man like Franklin to show there was more to electricity than this.

Although Franklin worked tediously more than fifty years in the development of a new nation, he also took time to enjoy the "finer" aspects of life, being a nudist and also enjoying the company of many women.

ROBERT HOOKE
(1635--1703)

If ever there was a person in the history of science that deserves more credit, Robert Hooke gets my vote. Hooke had a problem in that he was contemporary with Newton. Compounding the problem was the fact that Newton and Hooke did not get along, either professionally or personally.

Every physics student remembers Hooke's name for his work on springs and the laws applying to them, but his other contributions are extremely numerous (he invented the iris diaphragm for one). Hooke loved to jump from one research topic to another, but rarely did he totally finish his work. It usually took years before the impact of his original work was felt and then Hooke rarely received his credit due. His greatest work was Micrographia, in which he established himself as a great pioneer in microscopy.

Hooke's personality was complex. He was very hasty and impatient of fools. Above all he was a very sensitive man. This added all together produced in many ways, an unhappy, defensive man who was attacked often by lesser men. The whole conflict with Isaac Newton resulted in a somewhat paranoid feeling in Hooke concerning precedent on many of his own works in science.

No portrait exists of Hooke, which is remarkable because in his own time, he was a highly respected scientist, being the curator of experiments at the Royal Society for 41 years. We do know, however, from contemporary descriptions that Hooke was lean, bent and meanly ugly, with a wide, thin mouth and a sharp chin. He kept a diary meticulously, noting all aspects of his daily occurrences; indicating that he did have an active social life with his close friends.

All through his life, Hooke was plagued with chronic health problems. The list includes headaches, sinusitis, catarrah, indigestion, and insomnia. On March 3, 1703, after twelve months of being bed-ridden and almost blind, Robert Hooke died. Eight months later Isaac Newton was elected President of the Royal Society.

JAMES CLERK MAXWELL
(1831--1879)

James Maxwell's childhood was a happy one. Although his mother died when he was nine, James found comfort and companionship in his father. As with many child prodigies he was labeled "Dafty" by his classmates. The nickname was constructed partially due to the unusual clothes that his father designed for practicality ("hygienic" square-toed shoes and lace-frilled tunics are examples.) At home the near-sighted Jamesie (another nickname) loved to ask unending "how and why" questions of his father. At the tender age of 15, James contributed an original work on the construction of ovals to the Royal Society of Edinburgh. Due to his age many refused to believe he had composed it.

In 1850, Maxwell entered Cambridge. There his interests blossomed to many subjects--even the economy of sleep. "He would sleep from 5 in the afternoon to 9:30, read very hard from 10 to 2, exercise by running along the corridors and up and down the stairs from 2:00 to 2:30 a.m. and sleep again from 2:30 to 7:00. The dormitory inhabitants were not pleased...." (He also studied the phenomenon of cats always landing on their feet.)

There is little argument that James Maxwell was the greatest theoretical physicist of the nineteenth century. His works include: the proof that Saturn's rings are particles, the thermodynamics of gases, and of course his revolutionary formulations on electromagnetism. He also did great research in color perception; creating many novel inventions, one of which demonstrated a visual artifact particular to the macula which hence was known as "Maxwell's spot." As a teacher he was not too great. His lectures were sparsely attended since he often filled the board with numbers and symbols as he flew off on some tangent. One of Maxwell's students described his lectures as someone thinking outloud. Despite this, he was respected and loved by his brighter students for his charm and unselfish giving of time.

In the spring of 1877 Maxwell began to be troubled by pain in his throat. For two years he consulted no one although the conditions worsened. On November 5, 1879 he died (like his mother) of cancer.

ALBERT ABRAHAM MICHELSON
(1852--1931)

Most of Michelson's life was spent perfecting instruments in order to establish the ultimate value of the speed of light--in fact, it was his passion. In doing so, he designed and constructed elaborate instruments (many of which were later used for other applications) with the intent of producing exact data. For his success, he became the first American to win the Nobel Prize (in science) in 1907.

Michelson is best known for the great experiment that "failed." Along with Edward Morley, Michelson designed and perfected an apparatus to show whether the ether actually existed. Obviously it was not found, but this experiment and Michelson's other work led to the Second Scientific Revolution. Despite this, it was Michelson himself who stated in the late 1890's that the field of physics was so firm that he predicted no other great advancements would be made, merely perfection to the sixth decimal place of numbers already known. It is no wonder that Michelson could never bring himself to accept relativity!

Albert Michelson's higher education resulted only after much tenacity. Being unable to secure a position in the Naval Academy, he traveled from his home in Nevada to Washington, D.C. to seek the help of President Grant. Finding out when the President took his daily walks, Michelson approached him and told his story. The rest is history.

Michelson's personality was complicated. He hated administrative working preferring rather the solitude of the laboratory. (By the way, he was not a good teacher.) With respect to politics and business, he also had no interests. When national security was involved, Michelson was a very active and opinionated man. After the sinking of the Maine in 1898, he publicly announced that the U.S. should immediately declare war on Spain.

Michelson's last public appearance was on January 15, 1931, at a banquet in Pasadena honoring Dr. & Mrs. Einstein. It was at this time Albert Einstein thanked Albert Michelson for his earlier work, which laid the groundwork for the later development of the Special Theory of Relativity.

ISAAC NEWTON
(1642--1727)

Writing a short biographical essay on Newton is almost a sin. During a year at his home in Woolsthorpe (the plague forced him to leave Cambridge), Newton formulated the binomial theorem, discovered differential and integrated calculus, and developed his Theory of Colors. By the end of his life, Newton had opened the realms of universal mechanics.

Isaac Newton was born posthumously and prematurely on December 25, 1642 (the same year Galileo died). Due to his size, no one expected hime to live. In his early childhood, he liked to tinker and daydream, but displayed little that give hint to his future intellectual productions. Isaac's blossoming achievement reportedly occurred only after he had beaten the school bully to a pulp. From then on he was tops.

In 1660, after abandoning the hope of his ever becoming a farmer, Isaac's mother sent him to Cambridge. There he remained for thirty years. As a professor, Newton was the stereotype, absent-minded scholar apparently not even minding lecturing to empty classrooms. His appearance was often quite ragged and he kept irregular eating and sleeping habits. Concerning women, he had no interests.

Newton's personality was somewhat childlike and reclusive. He could not take criticism. More than once he threatened never to publish again and he even tried to resign from the Royal Society, but he was always mollified by his friend, who argued his points for him. He disliked distractions, claiming that his works resulted only after much contemplation and continually thinking them through. In 1687 Newton was elected to the Parliament representing Cambridge University. He served several years but never made a speech except once to address a hushed and captive House only to request that a window be shut.

Newton's later life was contrastingly unproductive. He spent much of his time secretively experimenting with alchemy and studying occult philosophies and religion.

THOMAS YOUNG
(1773--1829)

Thomas Young made important contributions in almost every area he touched. It is not surprising that he was a child prodigy. At age two he could read, and by age 4 he had trudged through the Bible twice. His knowledge of languages was gargantuous, having learned twelve languages fluently during his youth. While a student at Cambridge he was known as Phenomenal Young; having received this title for consistently solving problems his classmates would present to him. Many of those problems had previously never been solved!

Young always worked alone. Unlike many of his contemporaries, his greatest works resulted from solitary thinking. In explaining his voluminous achievements, like Newton and Einstein, he credited persistence and perseverance.

Although he received his degree in medicine, Dr. Young actually practiced very little. Thomas Young is remembered most for his extraordinary work on light. His experiment with the double slits showed that light was definitely wave-like as opposed to the corpuscular theory which Newton had supported. Even with strong backing by Wollaston, the new evidence was not widely accepted since Newton (now a century old) was still "king." Other areas in which Young made huge contributions were in the translation of Egyptian hieroglyphics, ocular science, and the development of a color perception theory. He showed that accommodation was the result of lens change and that astigmatism resulted from corneal asphericity.

Unfortunately, Young did not support the development of any calculating machines or the planning of organized scientific research. This had major drawbacks on the progress of British science. As for his own works, Young would jump from one area to another without expressing his results in a manner that could be easily understood and utilized. This also probably explains why he is not remembered for the truly excellent work he accomplished.

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Christianson, Gale. This Wild Abyss. New York, New York. 1978.

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Crowther, J.G. Scientific Types. London, England. 1968.

Espinasse, Margaret. Robert Hooke. Berkeley, California. 1962.

Everitt, C.W.F. James Clerk Maxwell. New York, New York. 1975.

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Jaffe, Bernard. Michelson and the Speed of Light. New York, New York. 1960.

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Dr. Henry A. Knoll contributes an article:

FILLING THE HIATUS

Recently written histories of contact lenses contain a time hiatus extending from the last decade of the 19th century to the opening of the third decade of the present century. This is unfortunate since many new ideas were discussed during those thirty years, ideas which have since been brought to the fore as though they had never been proposed, for example: plastic contact lenses, methods of measuring corneal and scleral shapes, a method of measuring corneal vault, devices to aid in the placement and removal of contact lenses, a host of therapeutic indications, orthokeratology, and the use of fluorescein to check the fit. Fortunately there are three fine historical papers to fill this hiatus, all published during the third decade of this century. The originals appeared in German, French and English. Translations of the first two are available. As might be suspected the approach to the task is different in each case, hence the three histories supplement each other.

In 1932 Viktor Much, M.D. of Kiel, published a review of the world contact lens literature written in chronological order with references numbering 162.[1] There are no figures or tables.

Dr. John Griffin of the Southern California College of Optometry had the article translated into English -- and a fine translation it is. Copies of the original and the translation are also in the Indiana University Library and in the Technical Information Center of the Soflens Division of Bausch & Lomb, Inc.

In 1937 Emile Haas, M.D. of Paris, read his history before the Societe d'Ophthalmologie de Paris.[2] The paper is divided into four parts; Optics, Adherence (fitting), Realizations (accomplishments) and Case Histories. It is in fact a mini text book. There are 21 figures, numerous tables and charts, and 182 references. Among the figures are photos of the molding technique of Prister, the sclero-Keratometer of Helmbold and the hydrodiascope of Siegrist.

An excellent translation of the entire paper[3] (including figures, tables, charts and references) was published in Contacto.

Ida Mann, M.D., London, published a contact lens history in 1938.[4] In her paper she traces the evolution of contact lens concepts relating to optical properties, tolerance and fit, and indications. The third section is divided in turn into three parts, optical, treatment, and research. There are no figures or tables. She notes that there are over 200 references in the literature, but she lists only the most important among them (including of course, the papers by Much and Haas).

REFERENCES

1. Much, Viktor, "Uber Haftglaser, 1. Geschichtliches, Archiv fur" Augenheilkunde, 105, 390-414, 1932.

2. Haas, Emile, Les Verres de Contact; rapport presente a la Seance pleniere du 14 novembre 1937, Bulletin de la Societe d'Ophthalmologie de Paris, 1937.

3. Contacto 11, 14-32, 39-72, Sept. 1967 and 12, 38-47, 70-77, June 1968.

4. Mann, Ida, History of Contact Lenses, Trans. Ophth. Soc. of U.K., 58, 109-136, 1938.

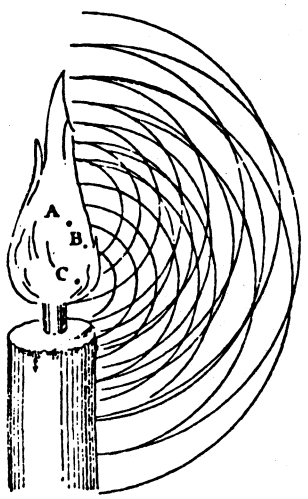
Biographical shorts available:

Pasco Scientific, 1933 Republic Avenue, San Leandro, California 94577, publishes free an occasional newsletter entitled Better Teaching by Design in which they frequently include a brief biography by Steven Janke of Colorado College with an artist's portrait of a physics scientist of renown. Twenty of the biographies and portraits are available as a free booklet to anyone who will send Pasco Scientific a clever "puzzler." Naturally I sent in one I had heard very recently at a cocktail party, "Why do spectacle wearers take off their glasses to see if the lenses are dirty? Can't they tell while the lenses are in front of the eyes?" Of course I sent the explanation too, but I would not insult the intelligence of O.H.S. readers by printing it here.

The 20 biographies include Galileo, Kepler, Newton, Franklin, Tyndall, and Michelson.

The portraits are also available in slides from the American Association of Physics Teachers.

Huygens' 350th anniversary:



Christiaan Huygens 1629-1695 was born 350 years ago this month. To mark this anniversary a committee of Dutch Scholars under auspices of the Royal Netherlands Academy of Sciences has organized an international symposium on his life and work. Papers will discuss his involvement with Dutch culture, mathematics, music, mechanics, astronomy, instrument making, measurement of time and longitude, light, the concept of matter, Cartesianism, and his influence on other scientists.

The Symposium will be held on August 22 to 25, 1979, in the conference rooms of the Zoological Gardens "Artis" in Amsterdam. The above illustration is the symbol for the event, imprinted on the letterhead, programs, announcements, and envelopes designed for the occasion.

Catalog browsing:

My colleague L.S. McClung, Professor of Microbiology, peruses many a catalog of old books for early publications related to his own field of study, which, of course, includes microscopes and microscopy. In so doing he frequently notices listings of books on optics which he correctly presumes to be of interest to me as an optometrist and then kindly lends me the catalogs in which these appear.

Now I personally am neither a buyer nor a collector, but I thoroughly enjoy and appreciate the existence of fine collections, and I utilize them unabashedly. Especially revealing to me are the catalogs themselves with their very succinct description of each book and its contents. Let me try to make my point merely by reproducing here a few of the entries in the Harriet Wynster Ltd. CATALOGUE OF BOOKS: THE HISTORY OF SCIENCE, TECHNOLOGY, AND THE APPLIED ARTS, 1978/3 (Address: 352 Kings Road, Chelsea, London SW3 500) as follows:

> 28 CHEVALIER (J-G-A-). LE CONSERVATEUR DE LA VUE,...suivi du Manual de l'Ingénieur-Opticien; Cotenant 1º. l'Exposition de l'art de fabriquer les Verres de Lunettes et de Microscopes, les Miroirs de Telescopes et Plusieurs autres Instrumens

d'optique, de physique et d'astronomie; la description des phénomènes de la Fantasmagorie et des moyen de les produire; une Instruction sur l'usage du Cadran solaire horizontal et universal. 2°. Une Dissertation sur le Baromètre, le Thermomètre, les divers Instrumens, d'Aréométrie, leur construction et leur usage. 3°. Une Notice sur le monument public, connu sous le nom de Tour de l'Horloge du Palais; un Dictionnaire analytique des termes de sciences employés dans l'Ouvrage; le Catalogue général des Instrumens qui se fabriquent et se vendent chez l'Auteur, avec leurs prix, ainsi qu'une Table des matières, 8vo, engraved title showing instruments, 17 plates, finely engraved, showing instruments, and two views of the author's shop. Two items are appended, "Extrait du Journal Royal...au rédacteur. Observations physiques et météorologiques sur l'hiver" and "Instruction sur l'hygromètre a Cheveux..." Cont. boards, worn, joints cracked. A very good copy of the third edition of this valuable work which provides much useful information on the construction of the instruments made by Chevalier, especially his microscopes, several of which are illustrated. Paris, 1815. £175.00

103 OPHTHALMIC HOSPITAL REPORTS and Journal of the Royal London Ophthalmic Hospital. Vol. III, 1860-61. ½ calf, worn, generally a good clean copy. Articles over a wide field by leading practitioners of the day. London, n.d. (1861). £25.00

126 SKIASCOPY. A Treatise on the Shadow Test in Its Practical Application to the Work of Refraction...8vo, 68 figs and 4 plates. With an interesting illustrated chapter on skiascopic devices and inventions. A good copy. Philadelphia, 1899. £20.00

169 DONDERS (F.C.). ON THE ANOMALIES OF ACCOMMMODATION AND REFRACTION OF THE EYE. With a Preliminary Essay on Physiological Dioptrics. 8vo, figs. in text, modern cloth. FIRST EDITION. Translated from the author's mss. by W.D. Moore, this book was never issued in Dutch as were Donders' other works. Garrison-Morton 5893 "This work is of the highest importance in the field of physiological optics." Rare. New Sydenham Society, London, 1864. £75.00

191 NEWTON (I.). OPTICKS: or, a Treatise of the Reflexions, Refractions, Inflexions and Colours of Light. 8vo, 11 folding plates. Cont. calf, rebacked, chafed. A good clean copy of the fourth edition, the last revised by Newton. An early impression with the typical darker type-face. London, 1730. £160.00

204 WRIGHT (L.) OPTICAL PROJECTION. A treatise on the use of the lantern in exhibition and scientific demonstration. 8vo, 232 ills, inc. many of instruments. Very good copy. London, 1891. £35.00

Now wasn't that interesting? I daresay you read parts of it twice.

In case the quoted prices add to your value judgement, let me remind the American reader that the pound (£) approximately equaled two dollars on the day I copied this.

As perceived by a management expert:

Dr. Henry Knoll calls attention to the following paragraph on page 180 of Technology, Management and Society, a book by Peter F. Drucker published in 1970 by Harper and Row (underlining by Knoll):

> Yet, until very late--1850 or thereabouts--there was no organized or predictable relationship between scientific knowledge and medical practice. The one major contribution to health care which the West made in the Middle Ages was the invention of spectacles. The generally accepted date is 1286; by 1290 the use of eyeglasses is fully documented. This invention was, almost certainly, based directly upon brand-new scientific knowledge, most probably on Roger Bacon's optical experiments. Yet Bacon was still alive when spectacles came in--he died in 1294. Until the nineteenth century there is no other example of such all but instantaneous translation of new scientific knowledge into technology--least of all in medicine. Yet Galen's theory of vision, which ruled out any mechanical correction, was taught in the medical schools until 1700.

Drucker's international renown, incidentally, is well documented in Who's Who in America and in numerous other biographical listings.

Contact lenses prior to 1937:

Entitled "The History of Contact Lenses" is a 1967 English translation of a French paper by Emile Haas, M.D., published in 1937 by the Societe d'Ophthalmologie de Paris under the title "Les Verres De Contact." The translation was published in Contacto: International Contact Lens Journal, the first installment in Vol. 11, No. 3, Sept. 1967, pp. 13-32, 39-55, and 57-72, and the second in Vol. 12, No. 2, June 1968, pp. 37-47 and 70-77.

The article is in fact a review of the contemporary state of the contact lens art in 1937 with only a perfunctory coverage of its history per se. By 1967 of course the 1937 review was in effect history and presumably for that reason was then so titled. Unlike the usual history article, therefore, it is written without the author's advantage of knowing subsequent developments.

The article is subdivided into four parts, 1, Optical Theory of Contact Lenses, 2, Physical Conditions of Adherence, 3, Realizations, and 4, Applications of Contact Lenses and their Principles. The last part is an extensive series of variously published case reports. The references total 182!

Briefly noted biographies:

"As I remember: Edward Vail Lapham Brown" by Benjamin Milder appeared in the December 1975 issue of the EENT Monthly, Vol. 54, No. 12, pages 465-467. Milder reports that long before the word "paramedical" found its way into our vocabulary, E.V.L. Brown, M.D., (1867-1953) was engaged in the training of clinical technicians. It is also said of Dr. Brown that he insisted that every resident (at the University of Chicago Eye Clinic) "perform correctly 90 out of 100 consecutive retinoscopies within an accuracy of one-quarter diopter in each principal meridian" before allowed to perform unsupervised retinoscopies. Dr. Brown did exhaustive studies of refractive errors in large populations.

"Über Daniel Bernoulli" (Concerning Daniel Bernoulli) by F. Rintelen appeared in the January 1976 issue of Klinische Monatsblätter für Augenheilkunde und Augenärztliche Fortbildung Vol. 168, No 1, pages 100-103. Rintelen draws many parallels in Bernoulli's life, 1700-1782, to that of Helmholtz more than a century later. Known best to physicists, Professor Bernoulli nevertheless devoted a great share of his career to medical physics (iatrophysics). His contributions of optometric interest included a study of muscle contraction demonstrated on the external rectus muscle of the eye and a precise perimetric determination of the blind spot.

Bernoulli was born in the Netherlands but spent the greater part of his life in Basel, Switzerland, where he died.

Incidentally, Daniel Bernoulli rated more than 10 double-column pages in the recently published Dictionary of Scientific Biography.

"Julius Hirschberg (1843-1925) als Ophthalmologe und Medizinhistoriker" (Julius Hirschberg, ophthalmologist and medical historian) by H.M. Koelbing appears in the same aforementioned issue of Klinische Monatsblätter für Augenheilkunde und Augenärztliche Fortbildung, pages 103-108. Hirschberg is most appreciated for his nine volume, 4700 page, history of ophthalmology, "Geschichte der Augenheilkunde" published during 1899-1919, tracing ophthalmological developments from the ancient Egyptians to 1900. His writings were greatly enhanced by his mastery of Greek, Latin, and Arabic as well as several modern languages.

Especially familiar to us is Hirschberg's test to estimate a strabismic deviation by the displacement of the corneal reflex.

And on and on and on:

Under a heading which I find a bit too figurative to translate literally, Herr Emil-Heinz Schmitz continues to unfold optical and spectacle history from time to time in the pages of Augenoptiker, a prominent and popular German optometric journal. The heading is "Licht lebt in Glas - Vom Lavaglas zum Laserstrahl" (Light lives in glass - From molten rock to laser beam). The series is extremely well and profusely illustrated, and the reference citation numbers have now (as of December 1978) reached 848!

I have been keeping track of the issue numbers and pages for several years, but, having almost lost my note sheet a few days ago, I decided to play safe by listing here the ones I have. If you can read German and enjoy looking at

excellent illustrations, here they are:

Vol. 28, 1973, No. 9, pp. 35,37,39 & 41
No. 11, pp. 54-57
No. 12, pp. 43 & 45-48
Vol. 29, 1974, No. 2, pp. 35,37,39,41 & 43
No. 4, pp. 51,53,55 & 87
No. 5, pp. 29,31,33,35,37 & 39
No. 6, pp. 45 & 47
No. 9, pp. 31,33, 35,37 & 39
No. 11, pp. 56,58,60,62,64 & 65
Vol. 30, 1975, No. 2, pp. 54,56,58 & 60
No. 3, pp. 64,66,68 & 70
No. 4, pp. 63,65,67,68 & 69
No. 8, pp. 40-45
No. 9, pp. 64-67
No. 10, pp. 37,39,41 & 43
No. 11, pp. 39,41,43 & 45
Vol. 31, 1976, No. 2, pp. 148-151
No. 6, pp. 606,608,610 & 612-615
No. 9, pp. 897,899,901 & 903
No. 10, pp. 1029,1031,1033,1035,1037 & 1039
Vol. 32, 1977, No. 2, pp. 62,64,66,68,70 & 72
No. 3, pp. 62-64
No. 6, pp. 54-57
No. 8, pp. 49-51
No. 10, pp. 79-81
Vol. 33, 1978, No. 2, pp. 57-59
No. 3, pp. 63,65,67 & 69
No. 4, pp. 55 & 57-59
No. 8, pp. 57-59
No. 9, pp. 46-47, 49 & 51
No. 11, pp. 55-57 & 59
No. 12, pp. 49,51 & 54-56

The usually intermittent pagination is due to the interposing of advertisements, not unlike our television commercials. Without these, of course, this valuable documentary might never have been published. I presume, and hope, that eventually the series will appear in a separate offprinted volume.

A century of spectacle-making in Italy:

The deed of incorporation of the first Italian venture in spectacle making in the 19th century is dated March 15, 1878. The factory was established by Angelo Frescura, a comb and spectacle peddler, and his brother Leone Frescura and Giovanni Lozza in Calalzo di Cadore. Calalzo is in northeastern Italy, about 120 kilometers (70 miles) north of Venice and 40 kilometers (25 miles) from the Austrian border, in the Dolomite Alps region. True, there had been thriving spectacle manufacturing in Venice in the late 1600's and the first half of the 1700's, but competition from other countries subsequently eliminated it from Italy for many decades, for almost a century.

The history of this venture and of the subsequent growth of the ophthalmic optical industry in Italy is told in a special supplement to issue No. 5, 1978, of VEDERE INTERNATIONAL entitled CENTENARIO DELL'INDUSTRIA ITALIANA DELL'OCCHIALERIA 1878-1978.

In recognition of the occasion the national association of ophthalmic optical manufacturers (Associazione Nazionale Fabbricanti Articoli da Occhialeria, or A.N.F.A.O.) prepared a special exhibit for the annual Italian optical fair called MIDO. This exhibit, much of which is reproduced in the VEDERE INTERNATIONAL supplement, is now on permanent display at Calalzo.

An archivist's nightmare:

Mr. J. Harold Bailey, the retired administrative director of the American Optometric Association who served under 25 successive presidents, had this to say about one of the 25 who is presently confined to a nursing home:

"(He) was a powerhouse in his day and was the president who insisted that I send him only 'flimsies' in correspondence. He had a unique filing system. He read all his mail while sitting on the john and then flushed them when he was through. I told Maria one time that one of the truly great archives in optometry was in the cesspool behind (his) 150 year old home in Fostoria!"

Theological optics:

Seventy-five years ago Mary Baker Eddy stated in her book, "Science and Health with Key to the Scriptures," p. 479, "An image of mortal thought, reflected on the retina, is all that the eye beholds." So reports Noel D. Bryan-Jones in his article "OF PURER EYES" in the December 1978 issue of The Christian Science Journal, Vol. 69, No. 12, pp. 634-635.

He points out that the prophet Habakkuk (1:13), circa 600 B.C., in his Old Testament book of the same name, knew that God was "of purer eyes than to behold evil"; that Isaiah (32:3), circa 765-800 B.C., stated the devine dictum that "The eyes of them that see shall not be dim," and that Moses, circa 1200 B.C., lived to the age of 120 years and "his eye was not dim" (Deuteronomy 34:7).

The Bryan-Jones article was thoughtfully sent to me by OHS member, J.J. Abrams, O.D.

It feels so good:

How can a visually impaired person appreciate the contents of an art museum when the ubiquitous and indeed tactless signs say "DO NOT TOUCH." From this question the concept of tactile art was first explored during the 1950's by Allen H. Eaton. The concept grew into a collection entitled Objects of Beauty for the Sighted and the Blind. A permanent Mary Duke Biddle Gallery of the North Carolina Museum of Art was established with Eaton's help in 1966.

Then in 1978 Miss Sarah Cooke, a young student at Earlham College in Richmond, Indiana, decided to organize a Tactile Art Show as a project for a course in art appreciation in which she was enrolled. Rounding up help, support, and cooperation from well over two dozen local, state, and national agencies, donors, clubs, foundations, firms, artists, and even The American Council of the Blind of Indiana, she opened the show at the McGuire Art Galleries in Richmond during March and April, 1979. Special guides were trained to assist not only visually impaired persons but also sighted persons who were willing to wear blindfolds during the tour.

The excitement was something to behold. Art objects included stone and plaster statuary, ceramics, sculpture in clay, rope, wire, wood, and leather, and variously composed fabric and manipulatable mechanical models.

All this was very recent, but history it now is, and very touching.

A series from East Germany:

Another interesting historical series on spectacle history, "Uber die Geschichte der Brille," is appearing in irregular instalments in Augenoptik. Part 1, subtitled "Hat Kaiser Nero eine Brille getragen?" (Did Emperor Nero wear glasses?), appeared in issue No. 3 of Vol. 91, pages 66-67, and Part 2, subtitled "Frühe Optische Erkenntnisse weisen den Weg" (Early optical knowledge paves the way), appeared in issue No. 4 of Vol. 91, pages 98-99, both in 1974. Then during 1976 appeared Part 3, "Die Brille wurde in Italien erfunden" (Spectacles must have been invented in Italy), in issue No. 4 of Vol. 93, pages 110-111 & 116, and Part 4, "Herstellung und Bearbeitung des Brillenglases" (Production and processing of ophthalmic glass), in issue No. 6 of Vol. 93, pages 170-171. Part 5, "Die Brille wurde allmählich bekannt" (Gradually spectacles came to be acknowledged), was included in the January-February 1977 issue, Vol. 94, No. 1, pages 19-20. None appeared during 1978.

The author is Dr. Wolfgang Münchow, the chief physician for the history of ophthalmological science collection at the eye clinic of the Heinrich Braun district hospital in Zwickau, East Germany, about 70 kilometers south of Leipzig.

Another optometrist memorialized:

The Dr. Geraldine J. Sherman Scholarship Fund was recently established at the Southern California College of Optometry, Fullerton, California.

H.W. Hofstetter, Editor