

NEWSLETTER
OF THE
OPTOMETRIC HISTORICAL SOCIETY
(243 North Lindbergh Boulevard, St. Louis, Missouri 63141, U.S.A.)

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Annual call for nominations:

The board member whose five-year term will expire at the end of this year is James Tumblin, O.D. He informed us last year that due to several other long range commitments he could not allow himself to be renominated for another term.

Nominations for his replacement for a five-year term are hereby requested for placement on the ballot in October. They may be submitted to Henry Hofstetter, 2615 Windermere Woods Drive, Bloomington, Indiana 47401, U.S.A.

By all means do not hesitate to include yourself as a candidate if such responsibility challenges you. Remember, self-nominated volunteers founded the O.H.S., and unpaid volunteers have kept it going.

Origins of an Association:

Discovered in the old files of the Indiana State Board of Optometry is a carbon copy of a six-page single-spaced typewritten paper entitled A HISTORY OF THE INDIANA ASSOCIATION OF OPTOMETRISTS. Of almost flawless grammar, virtually free of typographical errors, and in fine literary style, it seems to have been prepared for publication, but where I do not know. The author is unknown, as is also the date except that it would not be before 1920.

Though ostensibly a history of Indiana's Optometric Association, it clearly reflects circumstances that must have prevailed throughout a large part, if not the whole, of the United States around the turn of the century. The full text follows:

On December tenth, 1896, a number of opticians from various parts of the State of Indiana, who had a keen interest, not only in their individual work, but also in the advancement of the profession as a whole, came together for a meeting at the capital city, Indianapolis. This meeting, which was held in a little room at the Denison Hotel, was called to order by John Wimmer, of Indianapolis, now deceased. A medicinal bill having been introduced into the Indiana State Legislature, which, upon investigation, proved to be adverse to the opticians, all of the men present felt the need of an organized and effective body to advance their profession and disseminate knowledge concerning it. After some discussion, a motion was carried to form an organization to be known as the Indiana Optical Society, composed of the following charter members: John Wimmer, I. M. Rowe, G. W. Conner, and H. E. Woodard of Indianapolis, William E. Houston of

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INDIANA UNIVERSITY

Greenfield, G. M. C. Bartmus of Clinton, Ed Shipley of Green-castle, Eugene Collings of Franklin, J. H. Arnold of Columbus, J. D. Taylor of Logansport and D. S. Whitaker of Lebanon. Four officers were then elected for the ensuing year:

President-	John Wimmer
Vice-President-	William E. Houston
Treasurer-	I. M. Rowe
Secretary-	C. W. Conner
Assistant Secretary-	H. E. Woodard

After the installation of officers, a motion was carried that the executive committee should meet on the following day, December eleventh, 1896, at ten o'clock in the morning. At this session of the executive committee, a motion was discussed and carried that Mr. Albert J. Beveridge be employed as attorney for the Indiana Optical Society, and that he be paid fifty dollars as a retainer fee.

Under the direction of the Society, Mr. Beveridge drafted a bill defining and regulating the practice of optometry which was introduced into the legislature of the session of 1897 by Senator Hugg. This bill, as read, was referred by Dr. Newton of Bartholomew County to the Committee on Public Health in the House of Representatives. Although the bill was favorably reported on in both the House and the Senate, because of the similarity of the medical bill and the optical bill, it became necessary to effect a compromise. Through the efforts of Mr. I. M. Rowe and Mr. Beveridge, an amendment was added to the medical bill, which amendment read "that the said medical bill was not to be construed to apply to opticians." The optometry bill was then withdrawn.

This was a triumph for the society and a speedy reward and justification of its formation. Its fame spread abroad and in the same year of 1896, announcement was made in the Optical Journal that opticians in Ohio, Pennsylvania, New York and other New England states had met to form state societies for the advancement and protection of their profession. This activity caused the following favorable comment by Mr. L. B. Hilburn of New York which appears in the Optical Journal in 1897:

"It is very encouraging to observe the number of optical societies springing up."

A similar society was organized in Illinois on September fifteenth, 1898.

Since no business arose after this first meeting of the Indiana Optical Society in 1897, which urgently required action on the part of the members, the society did not again function actively until 1901. Two years before this date, the medical bill had again appeared before the legislature to be amended. Without the knowledge of the Indiana Optical Society, the clause was left out which said "that the bill was not to be construed as applying to opticians." As a result of this, the society again came together on January twenty-ninth, 1901, and adopted the name of the Indiana State Optical Society. They were ready for instant and effective action. The meeting was well attended, representatives being present from all parts of the state. An interesting article appeared in the Keystone of March, 1901, giving an account of the proceedings as follows:

"After a general greeting, the meeting was called to order by President Wimmer, who stated its object and invited the non-members present to join the society. After electing a number of new members, the society proceeded with the election of officers with the following result: E. Shipley of Greencastle, president; J. H. Arnold of Columbus, Vice-President; G. M. C. Bartmus of Clinton, secretary; I. M. Rowe of Indianapolis, treasurer; Miss Stella Rogers, assistant secretary. The executive committee consists of E. O. Collins, Franklin; C. M. Jenkins, Richmond; O. M. Ridgeway, Sheridan; Paul E. Hulsman, Indianapolis; W. H. McDougal, Indianapolis. A committee was appointed to revise the constitution and by-laws of the society as follows: C. M. Jenkins, Richmond; M. C. Klein, Crawfordsville; J. D. Taylor, Logansport."

The medical bill was then discussed at length and a committee appointed to confer with and employ an attorney, if necessary. The Hon. John L. Griffiths was retained to look after the interests of the society."

After due consideration, it was deemed urgent to issue a call for all the opticians of the state of Indiana to meet on February twenty-first, 1901, to enlist in a movement to pass a favorable bill through the legislature and to defeat the hostile medical bill then up for consideration by the law-making body. This call read as follows:

"The object of this meeting is to confer with our attorney and formulate a plan by which we can defeat the passage of the 'Medical Bill' now in the legislature. If you are alive to your interests, you will be present without fail, as the critical point is now here and we must act quickly, or be debarred from the practice of our profession by an innocent looking clause inserted by the 'occulist'. Would you permit a law to be passed against you to save five or ten dollars? If so, remain inactive and it is sure to come.

"Four years ago a very small per cent of the opticians in Indiana saved our necks by prompt action and liberal donations, while the other ninety per cent of the opticians saved their money and time by staying at home. The magnitude of the present danger cannot be described in this letter. Come and see for yourself. The comparatively few of us that are trying to surmount this obstacle are unequal to the emergency. Will you help us defend your interests and ours? This is not a scare call, but stern reality."

As a result of the splendid and vigorous efforts made by the members of the Indiana Optical Society, they brought about an amendment by the legislature which again read, "that the medical bill was not to be construed as applying to opticians."

The Society itself continued to actively concern itself in promoting its best interests and at the session of the legislature in 1907 a bill favorable to optometrists was passed both by the House of Representatives and by the Senate and was signed by Governor Hanly. This bill was favorably amended in 1913 and also in 1919.

From the above resume of the early functioning of the Indiana Association of Optometrists, known at different times by the names of The Indiana Optical Society, the Indiana State Optical Society, and The Indiana State Optometrical Society, it can be seen how the broad foresight, the clear vision and the tireless activity of its founders aided much in establishing optometry on its present satisfactory basis in the state of Indiana. The members who have come into the organization in recent years do not entirely realize, perhaps, what difficult problems had to be faced and solved by the society in its early days, handicapped as it was by small membership, much opposition, and the general ignorance which then prevailed on the subject of optometry, but nevertheless upheld and strengthened by unceasing earnestness, and a deep conviction of the real value of the principles for which it stood and for which it fought.

Thirteen persons have thus far held the office of president in the association, and have successfully guided it in its achievements. These persons are John Wimmer, Indianapolis; Ed Shipley, Greencastle, C. M. Jenkins, Richmond; John E. Ellis, Plainfield; Margaret J. Erisman, Lafayette; J. W. Thompson, Danville; W. T. McCullough, Indianapolis; C. D. Adair, Elwood; Omar C. DeSelms, Attica; Clara M. Sweitzer, Richmond.

On August fifteenth, 1901, the Indiana Association was honored by the election of John H. Ellis of South Bend as president of the American Optical Association.

Of the eleven charter members of this society two are deceased; Mr. G. M. C. Bartmus of Clinton and Mr. John Wimmer of Indianapolis, the first president of the association.

Mr. Wimmer was born in Cincinnati, Ohio, but came to Indianapolis in his early youth. After beginning business as an optometrist in this town in 1880, he suffered various reverses which caused him to discontinue his business career for a time. When he resumed it in the same location where he remained until his death at the age of fifty-two years, his business prospered with increasing success. By dint of energy, enterprise and business acumen, he accumulated a fortune of some two hundred thousand dollars. Throughout all of his business career, he worked faithfully and unremittingly for the success of the Indiana Association.

The second president, Mr. Ed Shipley, who was elected in 1901, was born near Baltimore, Maryland. He first established himself in business as an optician in Philadelphia, but after a few years, he moved to Greencastle, Indiana, where he is living at the present time. A short time after this move in 1887, he wrote to Doctor Bucklin of New York, asking him for his opinion on the establishment of ophthalmic schools for the education of opticians. Eleven years afterward, in 1898, the Keystone published an article which said in part:

"Dr. Bucklin favored the idea (i.e., ophthalmic schools), andstarted his school very shortly after this (i.e., Mr. Shipley's letter in 1887), and in less than two years, several schools were started, and all have done a good business. Today we have in this country no less than a dozen ophthalmic schools. Since the different colleges started, Mr. Shipley has attended and graduated from several of them. He not only makes his own examinations, but also grinds his own lenses."

The Indiana Association is indebted to Mr. Shipley for a great deal of interesting information concerning its origin and the early years of its existence.

Mr. H. E. Woodard was born February sixth, 1863, in Mannsville, New York. He graduated from the common school in 1880 and went to work on a farm and in a lumber camp. At the age of twenty-five, he met Dr. Allard from Syracuse, New York, who induced Mr. Woodard to study optometry with him. The first year he worked for Dr. Allard for ten dollars a month, the second year for fifteen dollars a month and by the time the third year rolled around, he was receiving the princely salary of twenty dollars a month.

Following his three years with Dr. Allard, Mr. Woodard went to New York and took a course in optics, then bought a test case, a stock of lenses and started out on the road as a full-fledged optician. During the summer months, he worked through northern

New York, and in the winter, traveled farther south. In the fall of 1893, he went to Chicago hoping to obtain a concession to sell spectacles at the World's Fair. Being unsuccessful and in need of money, Mr. Woodard then worked south as far as Danville, Illinois and crossed over into Indiana, living at Frankfort for a year and a half, and moving to Indianapolis in May, 1896. His first location in this town was with Horace Comstock's jewelry store on East Washington Street. Not meeting with great success there, he accepted a position with W. T. Marcy on West Washington Street and from there, Mr. Woodard moved to Massachusetts Avenue, where he established a business of his own, remaining there until 1908, in which year he moved into his present location.

At the annual meeting of the Indiana Association of Optometrists, Mr. Woodard was elected president. In 1912 he was appointed by Governor Goodrich to serve on the State Board of Registration and Examination. This position he held for five years, being secretary each year and at the expiration of his term of office, he was elected by the other members, to a life position. Mr. Woodard is believed to be the only exempt man in Indiana who has taken the State Board examination.

At the A. O. A. meeting at Providence, Rhode Island, Mr. Woodard was elected president of the National State Board.

Mr. Charles W. Conner, the first secretary of this society, who was the inventor of the one-piece bifocal lens, now known by the name of Ultex, was born in Bloomfield, Pennsylvania, in April 1868. A few years later he moved with his family to Indianapolis, where he later went into business as an optometrist. After remaining for over thirty years in this town, he moved away, continuing his business in Detroit and New York. In 1920, he again made a change, moving to his present home in Asheville, North Carolina.

Mr. J. D. Taylor, whom, as in the case of Mr. Woodard, Mr. Wimmer, Mr. Conner, and Mr. Shipley, Indiana can claim only as an adopted son, was born near Auburn, New York, on July twenty-seventh, 1860. In the fall of 1871, he came westward to Logansport and at that time he concluded to learn the jewelry business. In 1888, having had some trouble with his eyes, he consulted an oculist who loaned him a book on refraction. He became so interested that he decided to make it his life work. About this time the Julius King Optical Company was giving courses in this work at Cleveland, and Mr. C. L. Merry, who happened to visit Logansport at that time, induced him to attend. In 1896, Mr. Taylor took a course in the Chicago Ophthalmic College, then conducted by Dr. Martin, and having disposed of the jewelry department of his business in 1917, he took a post-graduate

course with Dr. Needles in Kansas City and became exclusively an optometrist. Mr. Taylor, who has been very successful in his work, may be quoted as follows:

"My greatest trouble in my early experience was to get people to sit in the chair and use the trial frame. They did not want to buy glasses that way. They just wanted to try them on. My experience is that a jeweler-optometrist is working at a disadvantage as he cannot give it the time it should have. He has no time to study."

Another of the charter members, Mr. I. M. Rowe, who was elected as first treasurer of the Indiana Association, was born in Grant County, Indiana on December first 1854, but spent his childhood on a farm in Missouri. In Early life he learned the painter and carpenter trade, but he never put it into practical use. He was a trader and stock buyer until he was almost thirty years of age. Then, because of reverses in this business, he took up the spectacle trade. Finding that this business was profitable, he continued in it and soon began jobbing spectacles to the trade. After four years of this, he began traveling, selling from samples, and at the same time took up the subject of refraction, studying this in all his spare moments. In 1894, he took a course at Parsons Polytechnic Institute at Peoria, Illinois. After his graduation, he established a business in Indianapolis, which he conducted successfully until 1919, at which time, he sold his business and retired from active work as an optometrist. Mr. Rowe expects, however, to re-establish himself in the business in the near future.

Mr. D. S. Whitaker was born in Scotland, Indiana, on November twelfth, 1854. At the time he was six years old, his parents moved to Indianapolis for a period of three years. When they moved again, this time going to Whitestown in 1863, he spent several vacation months working in a stove factory. In 1869 he and his parents moved to Zionsville, where he obtained a position in a dry goods store for a time and, later, in 1874, went into the jewelry business with Mr. Warren, father of Miss Annie Warren, whom he married. In 1879 Mr. Whitaker moved to Lebanon and, after acquiring experience in handling watches, he invested in a small stock of watches and other jewelry--the nucleus of a business as a jeweler and optometrist which he has built up with ever increasing success during the past forty-three years. In 1918, he took as a partner Mr. L. S. Sterling, also an optometrist and practical watch maker, who had been in his employ for fourteen years.

It is with much regret that biographical sketches of the life and work of four other charter members must be omitted, since the material was not available at the time of publication. Although it is therefore not possible to give detailed information

concerning these men, it is with much pride that the Indiana Association of Optometrists includes in its list of charter members such men as William E. Houston of Greenfield; Eugene Collins of Franklin; J. H. Arnold of Columbus and G. M. C. Bartmus, now deceased, of Clinton.

John C. Eberhardt of Dayton, Ohio was elected to Honorary membership on January 12, 1903, and L. W. Bugbee on January 13, 1920.

C. M. Jenkins was born in December 1854, at Dayton, Ohio. He was first interested in optics at the age of eight years, the subjects being two schoolmates with internal strabismus and congenital ptosis. These made such an impression on him that he selected for his declamation on the last day of school, a four-verse poem by some doctor, the substance of which was: Spectacles are made for old people to see to read and write and sew with, and near-sighted persons of any age to see with.

In 1873 he was employed with a firm on Main Street, Dayton, Ohio, and there with our friend, John C. Eberhart, delved into the mystery of lenses. He is a graduate of the Philadelphia School of Optics, the late C. H. Brown, M.D., being president.

In 1877 and 1878 he was a co-worker with Dr. Culbertson, oculist, their subject being eyes and artificial ear drums.

About 1880 he and Dr. Hobbs, oculist, jointly studied refraction and the fitting of eyes.

He served three years as President of the Indiana Association of Optometrist, one year as President of the Indiana State Board of Registration and Examination, as many years back as the writer recalls as Treasurer of the American Association of Optometrists and twenty-five years as counsel for our state Association.

Slit lamp biomicroscopy:

OHS member Henry A. Knoll has published a brief history of ocular biomicroscopy in the February 1983 issue of Contact Lens Forum, Vol. 8, No. 2, pp. 71 & 74-75, under the title "The Indispensable Slit Lamp". He identifies the 20's as the "Golden Age" of slit lamp biomicroscopy, with textbooks appearing in German, French, English, and Spanish. The various names credited with design contributions are Leonhard Koeppel, Manuel Troncoso, Alvar Gullstrand, Czapski-Zeiss, Otto Henker, Hugh Binstead, Henry Stockwell, Edgar Fincham, Hans Goldmann, and Alfred Vogt.

Hirschberg available in English:

Volume I of Julius Hirschberg's "History of Ophthalmology," mentioned on page 49 of the July 1982 issue of NOHS, is now available from Alan York, O.D., One Main Street, East Hampton, N.Y. 11937, the distributor for the U.S.A. Frederick C. Blodi, M.D., translated not only the German text but also all quotations which in the German edition are in the language of the original source, such as Greek, Latin, French, and Italian. Volume I contains the history of ophthalmology in antiquity in Egypt, Assyria, Babylonia, Israel, Persia, India, and Greece.

The first volume by itself is \$98.00, but if the entire series of about 11 volumes is ordered now, the price of each volume is only \$78.00.

OHS member York reports that his talk on "Collecting Antique Eyeglasses" at Optifair East drew an audience of about 30, a mixture of O.D.'s, M.D.'s, opticians, aides, and antique lovers.

In defense of our role:

OHS President Leeds kindly loaned me his copy of a 24 page, 21.5 x 14 cm, pamphlet, which I know he did not steal but which obviously derived from the British Optical Association Library as indicated by a somewhat smudged but still faintly legible rubber stamp impression on the front outside cover. Also on the front cover is imprinted the price of 1/-, i.e., one shilling.

The publication was the work of a special coalition committee appointed to respond in behalf of the whole optical (optometric) profession to what was known in England as "the Beveridge Report". In the British nomenclature of the era the designation optometrist was not used and therefore is totally absent from the text, but the issue deals historically with optometry in the most obvious sense of the word. The document is of course biased in its representation of the profession's role in public health insofar as that is its purpose, but its gratifying feature from a historian's point of view is its coverage of meticulously referenced historical details.

It therefore seems appropriate that the contents of this now rare publication be shared again with others, wherefore it is photographically reproduced in the following pages with a 25% increase of size to make the otherwise very small print a bit more legible.

THE PLACE OF THE OPTICAL PROFESSION IN THE HEALTH SERVICES OF THE NATION.

THIS STATEMENT

ON

THE PLACE OF THE OPTICAL PROFESSION IN THE HEALTH
SERVICES OF THE NATION

HAS BEEN DRAWN UP BY

THE MEMBERS OF AN AD HOC COMMITTEE CONSISTING OF
REPRESENTATIVES OF THE VARIOUS ORGANISATIONS IN THE
OPTICAL PROFESSION.

THESE ORGANISATIONS ARE AS FOLLOWS:

Examining Bodies

WORSHIPFUL COMPANY OF SPECTACLE MAKERS
BRITISH OPTICAL ASSOCIATION
NATIONAL ASSOCIATION OF OPTICIANS
SCOTTISH ASSOCIATION OF OPTICIANS

Non-Examining Bodies

INSTITUTE OF OPHTHALMIC OPTICIANS
JOINT COUNCIL OF QUALIFIED OPTICIANS
SOCIETY OF OPTICIANS
QUESTIONNAIRE COMMITTEE

ISSUED BY
THE BEVERIDGE REPORT (AD HOC) COMMITTEE
(OPTICAL PROFESSION),
65, BROOK STREET, LONDON, W.1

January, 1944

CHAIRMAN:
W. B. BARKER, F.B.O.A. (Hons.)

SECRETARY:
Miss I. PARNUM.

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DEFINITIONS

APPLYING TO THIS DOCUMENT

"OPHTHALMOLOGY" means that field of work concerned with the structure, functions, pathology and therapeutics of the eye.

"OPHTHALMOLOGIST" means one practising ophthalmology; an oculist or ophthalmic surgeon.

"OPHTHALMIC OPTICS" means the field of work concerned with the function and conservation of vision, the correction of visual anomalies due to anatomical and physiological defects and the appliances used for those purposes.

"OPTICAL PRACTITIONER" means one practising ophthalmic optics; also described as a sight-testing or ophthalmic optician.

The place of the Optical Profession in the Comprehensive Health Service.

INTRODUCTION.

1. For many years the optical practitioner has provided an essential part of the nation's health services. That he has done so efficiently and satisfactorily is scarcely open to question, for were it otherwise the great majority of the public would not continue to resort to him with their optical troubles (a), nor would he have been permitted to take the substantial part he does in the National Health Insurance Ophthalmic Benefit Scheme (b).

2. In view of this it might reasonably be supposed that the optical practitioner could confidently anticipate finding his accustomed place in the new and comprehensive health service the Government is considering as a result of its acceptance of Assumption B of the Beveridge Report.

3. There is good reason to know, however, that the just expectations of the optical profession in this, or, indeed, in any other direction will be most bitterly opposed, as they have always been, by organised medicine, which has for many years sought—unsuccessfully despite its power—to establish a monopoly of the nation's sight-testing work.

4. For a proper understanding of the position, it is perhaps desirable at this point to explain shortly the precise reason for this opposition, leaving a more detailed examination of the contentions of the

medical profession to a later part of this memorandum (c).

5. According to the medical view the optical practitioner should be permitted to do no more than make up spectacles in accordance with the instructions of a medical practitioner and in particular he should not be allowed to refract (i.e., test sight) or to prescribe for the correction of errors of vision. The reason given for this attitude is that the optical practitioner is likely to overlook a diseased condition of the eye, which would not then receive the necessary medical attention at the earliest possible stage.

6. For their part optical practitioners claim not only that they are fully competent to prescribe for errors of refraction—as their past record shows—but also that their training is such as to enable them to recognise and refer to an ophthalmic surgeon or physician those cases of organic deterioration or disease that call for medical attention. They add that under National Health Insurance arrangements they are required to refer such cases, which is, of itself, official recognition of their ability to detect them.

7. It has been made quite plain in a variety of ways that it is the intention of organised medicine to oust the optical practitioner altogether from sight-testing work or, as an intermediate measure, so to contrive matters that he is permitted to

(a) For comparative figures, see para. 66 (*infra*).

(b) It is estimated that optical practitioners

handle well over three quarters of all National Health Insurance optical work.

(c) See Appendix A.

carry it on only under complete medical control.

8. It is, therefore, the purpose of this memorandum to show that, apart altogether from the gross unfairness of such intentions, neither alternative is justifiable or desirable in the public interest and this it will seek to do by reference to the following propositions:

- i. That ophthalmic optics has developed as a distinct and individual field of work.
- ii. That, in the public interest, optical practitioners should continue as a separate and independent profession.
- iii. That full effect cannot otherwise be given to the three principles laid down by the Ministry of Health as those upon which the future health service will be based (cc).

(i.) To show that Ophthalmic Optics has developed as a distinct and individual field of work.

EVOLUTION OF OPHTHALMIC OPTICS.

(i.) From Early Times to 19th Century.

9. There is little doubt that the correction of errors of vision developed from experiments with lenses in general (d). The magnifying properties of convex lenses were known from at least A.D. 150 (e), but the application of them to the needs of the old and weak-eyed does not seem to have occurred to anyone until about the 13th century.

10. The man who was then responsible for this considerable advance was Roger Bacon, in whose *Opus Majus*, published in 1268, we find a substantial section devoted to optical science. Although he certainly possessed the requisite theoretical knowledge, he apparently did not get as far as the idea of spectacles, for he mentions only a lens of glass or crystal to be used actually resting on the reading matter to be magnified (f) and it is not until the end of the 13th century that we find any distinct mention of spectacles.

11. The physicians and surgeons of the day were then, as now, concerned with the relief of disease and illness and spec-

tacles were received by them with almost unanimous disapproval. Georg Bartisch (1535-1607), the father of German ophthalmology, at a somewhat later date dismissed them in the most uncompromising terms as useless (g) and those oculists who did not actively condemn them took no interest whatever in their use, at the most recommending patients to visit a spectacle maker and obtain the most suitable pair (h).

12. In spite of this more and more people began to discover the benefits of spectacles and to use them, especially after the invention of printing in 1440. The indifference of the oculists made it only natural for the fitting of spectacles to become increasingly the prerogative of those who sold them and during the years that followed a great deal of practical and valuable information about spectacles and lenses and their adaptation to individual requirements was accumulated by such men (i).

13. It was about this time that a group of London citizens engaged in the work of making and fitting spectacles to the "dim-sighted" petitioned Charles I for a charter of incorporation. This was duly granted to them on the 5th May, 1629, and the body thus created was known as The Worshipful Company of Spectacle Makers and was given powers of control "throughout the realm of England".

14. The Company forthwith embarked upon a full exercise of these powers and as its records show, used them very freely indeed for about a century-and-a-half after its incorporation. Persons suspected of "uttering hurtful wares" were visited by the Company's officers and, where appropriate, were punished by way of fines or the smashing of the offending spectacles or both.

15. For the next 150 years opticians continued to make steady progress and the development of spectacles and their adaptation to visual needs remained, as it had begun, almost entirely in the hands of non-medical men. In 1670 William Porter devised his optometer for the more accurate measurement of visual defects, while in 1682 Claude Comiers produced the first English publication devoted exclusively to the subject of spectacles (j). At the same time larger

(cc) These principles are, briefly: (i) best services for all; (ii) personal and professional freedom, and (iii) maintenance of health, not cure of disease alone.

(d) von Rohr, Thomas Young Oration, 1923, Trans. Opt. Soc., xxv.241.

(e) *Ibid.*, xxv.242.

(f) *Ibid.*, xxv.242.

(g) *Ophthalmologie* (1583).

(h) Sorsby, *Short History of Ophthalmology* (1933), p.56.

(i) *Ibid.*, p.72.

(j) *Spectacles for Assisting Sight*.

works of considerable importance were also appearing (k).

In 1777 Benjamin Franklin designed and wore the first pair of bifocal spectacles and a few years later similar glasses were made by Benjamin Weste, the then-president of the Royal Academy.

16. Prescribers were, however, considerably handicapped as they did not appreciate the existence or nature of the condition we now know as astigmatism and the more exact correction of eye defects could not, therefore, be developed to the full. It was not, in fact, until 1799 that W. Cary, an optician, communicated to Thomas Young, the eminent physicist, the results of his observations on the effects of astigmatism, which Young developed with his customary brilliance (l). Even Young's genius, however, does not seem to have led him to the means of remedying the condition and Sir George Airy, Astronomer-Royal, is usually regarded as the first person to have received the benefit of the correction of his astigmatism, which he estimated himself in about 1817 and for which the optician Fuller of Ipswich subsequently furnished appropriate sphero-cylindrical lenses (m).

17. For some reason, however, Airy did not publish his discovery for about ten years (n) and there are recorded instances of the relief of astigmatism by persons who had no knowledge of his investigations. Thus, prior to 1815—how long we do not know—an optician named Colborn came near to solving the problem. The correction of astigmatism requires lenses of irregular curvature and Colborn, complaining of the uneven sphericity of certain cheap lenses of his time, says: "But I must confess there are instances in which we not only tolerate, but are obliged to prescribe, such irregular lenses" (n).

In 1828, McAlister, a Philadelphia optician, who also knew nothing of Airy's work, prescribed and supplied cylindrical lenses for the astigmatism of the Rev. Goodrich (o).

18. The first recorded case of astigmatism in Scotland was in 1847 at the Edinburgh Eye Infirmary. Dr. Allen Thompson of Edinburgh University, diagnosed the condition but was not able

to measure its extent. He, therefore, sent the patient to John Adie, an optician of the same city, who prescribed for the case, supplying weak cylindrical lenses (p). According to Dr. Hamilton (p) this was only the second recorded case of corrected astigmatism in this country since Airy's discovery, though Adie himself claimed to have supplied cylindrical lenses to a woman patient some years previously.

19. In some medical quarters opposition to the use of spectacles continued almost to the middle of the century. Thus, in 1832, we find Weller, Sichel and others condemning the use of concave lenses on the ground that they caused myopia (short sight), presbyopia ("old" sight), deformation of the eye and a variety of other more or less unpleasant consequences (q). This attitude appears, however, to have been changing, for opticians were being definitely recommended both for testing and for the supply of spectacles by some of the most eminent oculists of the day, as, for example, Fredk. Tyrell (r), senior surgeon at Moorfields, T. Wharton Jones (s), professor of Ophthalmology at University College, and John Walker (t), of the Manchester Royal School of Anatomy and Medicine.

20. In fact, it is true to say that prior to 1869 opticians prescribed almost all the spectacles worn and even Moorfields Hospital sent out their refractive cases to opticians for testing until J. Soelberg Wells first advocated (u) the exclusive right of sight-testing for medical men.

21. As we have seen (paras. 17-18; *supra*), the developments made possible by the discoveries of Young and Airy were not immediate and it was not until 1864 that their full benefit began to be reaped. In that year there appeared the classic work of Frans Cornelius Donders, *The Accommodation and Refraction of the Eye*.

22. Donders, a modest and unassuming man, was professor of ophthalmology at Utrecht and claimed that he had done no more than follow the paths indicated by Young, Airy, Brewster and others. But, in fact, his own work was of such importance that it may be truly said of it that it pointed the way more clearly than any other of its time towards the place that

(k) As, e.g., Molyneux's *Dioptrica Nova* (1692), Smith's *Opticks* (1738) and Porterfield's *Treatise of the Eye* (1759).

(l) *Lecture on the Mechanism of the Eye* (1801).

(m) "Trans. Camb. Phil. Soc." (1827) 11.267.

(n) Cited by T. Wharton Jones, *Diseases of the Eye* (1847).

(o) *Am. Jnl. of Med. Sciences* (1827).

(p) Cited by R. Hamilton, *Monthly Jnl. of Med. Sciences* (1847).

(q) Sorsby, *Short History of Ophthalmology* (1933), p.74.

(r) *Diseases of the Eye* (1840).

(s) *Diseases of the Eye* (1842).

(t) *Oculist's Vade Mecum* (1843).

(u) *Treatise on the Diseases of the Eye* (1869).

the modern practice of refraction now occupies and it is largely to his credit that modern refractive technique is built upon a sound and scientific foundation.

(ii.) Modern Period.

23. We have given in the preceding paragraphs some account—necessarily brief—of the sources from which ophthalmic optics is sprung. The period covered is a long one and the advances made considerable, but the most intense development is that which has been concentrated into the last fifty years.

24. Towards the end of the 19th century we find the opticians of that time giving the clearest evidence of that particular form of professional consciousness that demands the regulation of the practitioner, the proper dissemination of technical knowledge and a due appreciation by all of their responsibility to the public in using that knowledge.

25. In 1895, therefore, the British Optical Association was founded and in the following year instituted qualifying examinations. Almost immediately afterwards the Worshipful Company of Spectacle Makers, whose old powers of control had lain dormant for many years, again became active and held its first diploma examination in 1898. These developments were followed by the creation of the Institute of Chemists-Opticians in 1906, the National Association of Opticians in 1910 and what is now called the Scottish Association of Opticians in 1921 (v).

26. The above are bodies primarily concerned with the examination of students and the issue of diplomas and it is only to be expected that in due course optical practitioners should have felt the need for some co-ordination in the organisational and representative sphere. Accordingly the year 1905 marks the creation of the Institute of Ophthalmic Opticians, followed in 1923 by that of the Joint Council of Qualified Opticians. Neither is an examining body but both are very much concerned—and always have been—with the organisation of a better and more comprehensive optical service through the encouragement of local associations (or branches of the parent bodies), research and technical improvement.

For the sake of completeness it may be added that at the present time matters are being taken a logical stage further by the fusion of the Institute of Ophthalmic Opticians and the Joint Council of Qualified Opticians into a single representative body.

27. On two occasions, namely, in 1906 and 1927, optical practitioners have sought fuller control of their profession in the form of state registration. Draft Bills were introduced in Parliament, but both failed, the first owing to the general disinclination of the legislature to interest itself in the matter and the second because of the very strong medical opposition it engendered.

28. The Departmental Committee appointed to consider the 1927 Bill advised against state registration (w) but in doing so was influenced by the medical profession's promise (x) that an efficient and comprehensive medical ophthalmic service would be available within a reasonable time. That was 16 years ago and the promised service is still quite incapable of handling more than a small part of the country's optical work (y).

29. All the organisations referred to above were, of course, formed purely voluntarily and are fairly illustrative of the earnest desire of the optical practitioner that his professional work should be properly and fully regulated. Another example of voluntary co-operative action of this sort was that which led to the formation of the Ophthalmic Benefit Approved Committee, a statutory body, reference to which is necessary to make complete this part of the memorandum.

30. Optical practitioners had taken part in the provision of ophthalmic benefit under the National Health Insurance Acts since its inception in 1921, but the absence of any universally applicable provisions as to the conditions on which they did so ultimately led to such chaos and divergences in procedure as between the different approved societies that a number of optical and approved society organisations decided in 1932 to form a joint committee to investigate and report on the whole position.

31. The resultant body, the Ophthalmic Benefit Joint Committee, was of a purely voluntary nature, without official standing

(v) It is perhaps interesting to note that no medical diploma in ophthalmology existed prior to that of Oxford University in 1910. The Royal College of Surgeons did not follow suit until 1920, and then not without some opposition from within the profession as the subject was apparently not thought important enough to merit a

separate diploma. See "Brit. Jnl. Ophth." iv.331 (1920).

(w) Cmd. 2999 (1927).

(x) *Ibid.*, pp. 18, 21 and 22.

(y) See para. 61 (*infra.*); for a fuller discussion of this and related topics, see Appendix A.

or recognition and therefore without any official mandate, but such, on occasion, is the value of voluntary co-operative action that the Committee carried its self-imposed task to a successful conclusion and the recommendations it subsequently submitted to the Minister of Health in 1934 were accepted almost in their entirety and embodied in statutory regulations (z), under which the Ophthalmic Benefit Approved Committee came into existence.

32. The new statutory body (consisting of equal numbers of approved society and optical representatives) was created "for the general purposes of the administration of ophthalmic benefit" and, apart from laying down a variety of standards and other conditions relative to the service, it was required by the regulations to compile and maintain a register of those optical practitioners it recognised as qualified to undertake National Health Insurance work. This register now includes some 7,000 practitioners and constitutes a measure of state recognition. No person is permitted to undertake National Health Insurance work unless his name is included therein.

33. It is, perhaps, interesting to add that at the time the Ophthalmic Benefit Joint Committee was being formed medical organisations were invited to participate. They declined to do so.

(iii.) Training, Qualification and Disciplinary Control.

34. As already mentioned the recognised examining bodies are:

British Optical Association.

Worshipful Company of Spectacle Makers.

Institute of Chemists-Opticians.

National Association of Opticians.

Scottish Association of Opticians.

35. The examinations vary a little in scope, but all conform to the standard specified by the Ophthalmic Benefit Approved Committee, which standard is based on the recommendations of Dr. L. C. Martin, D.Sc., of the Royal College of Science, who in 1934 and 1935 carried out an investigation of the examinations at the request of the O.B.J.C., having been nominated for that purpose by Dr. H. Spencer Jones, the Astronomer-Royal. No person is now admitted to the Committee's register unless he has obtained one or

more of the diplomas mentioned and is otherwise of satisfactory standing.

36. The examination syllabuses cover the following subjects:

- (i) Theoretical and practical physical optics and the theory of optical instruments.
- (ii) Subjective and objective methods of measuring errors of refraction and their correction.
- (iii) The principles, construction and use of all kinds of apparatus required for the complete external and internal examination of the eye, its fields of vision and other functions.
- (iv) Anatomy and physiology and, in particular, that of the organs of vision.
- (v) The abnormal and pathological conditions of the eye (a).
- (vi) The orthoptic or non-operative methods of correcting squint and related conditions in conjunction with errors of refraction that may be present.
- (vii) The design and construction of spectacle frames and lenses, the assembly of parts and the fitting and adjustment of completed appliances.

37. Each of the examining bodies admits successful candidates to Fellowship or Membership and grants diplomas. Certain of them also grant an honours diploma at a more advanced examination which may not ordinarily be sat until a year after the Fellowship examination.

38. The honours diploma of the British Optical Association is accepted by the University of Manchester for admission to a research course for the degree of Master of Science in the Faculty of Technology. Both it and the honours diploma of the Spectacle Makers' Company are also accepted by the University of London for admission to special courses at the Imperial College of Science and Technology, successful completion of which entitles candidates to the Diploma of the Imperial College (D.I.C.). In addition they are approved by the War Office in lieu of a university degree in connection with enlistment for certain scientific duties which may not be more fully referred to for security reasons.

(z) National Health Insurance (Additional Benefits) Regulations, S.R.&O. 1937 No. 973.

(a) It should be made quite clear that the object is not to enable the optical practi-

tioner to treat such conditions, but merely to recognise them so that he may refer them to an ophthalmic surgeon or other medical practitioner.

39. Courses of study for the examinations are provided at many technical colleges in various parts of the country, as e.g., the Northampton Polytechnic, London, the Manchester College of Technology (at both of which further facilities for research are provided) the Heriot-Watt College, Edinburgh, Cardiff Technical College, etc. Full-time courses are usually of 2 or 3 years' duration; part-time courses extend from 3 to 5 years.

40. A number of scholarships are available, including ten research scholarships tenable at the University of Manchester, the Imperial College of Science and the Northampton Polytechnic, London.

41. Clinical training and experience is provided by clinical classes at the recognised training colleges and in addition optical practitioners have by their own activities extended facilities in this direction by the foundation of refraction hospitals.

42. The London Refraction Hospital, the first of its kind in the world, was founded by the Institute of Ophthalmic Opticians in 1922. The Glasgow Refraction Hospital was opened in 1928 and, like its London counterpart, provides refractive and other treatment. Both are entirely staffed by optical practitioners and are supported by voluntary contributions and students' fees, together with such sums as the patients are able to afford. The London hospital is now administered under a scheme approved by the Charity Commissioners.

43. Clinical instruction in anatomy, physiology and pathology at the recognised training colleges is provided by medical school staffs or by medical men and the examination of candidates on behalf of the diploma-issuing bodies is also carried out by medical specialists.

44. Disciplinary control of optical practitioners is in the hands of the examining bodies and the Ophthalmic Benefit Approved Committee. Any departure from the code of conduct that has been laid down by the optical organisations may involve the offender in proceedings leading to the removal of his name from his examining body's register.

In the same way all optical practitioners who are registered by the O.B.A.C. are required to subscribe to certain conditions of service, infringement of which may result in the withdrawal of recognition. This renders a practitioner ineligible to undertake National Health Insurance work.

45. The position of the British optical practitioner is strangely in contrast with that of his professional colleague overseas, for while in this country the optical profession is subject to no state control (except in respect of National Health Insurance work), in almost all other English-speaking parts of the world Optometry Acts provide for a state register of practitioners and the due regulation of professional activities. To the lay reader it may seem almost unbelievable, but there is nothing in English law, as it now stands, to prevent any person, however ignorant or untrained, from practising optics and though the reputable practitioner is subject to strict control through the optical bodies we have already mentioned, this is solely because he has voluntarily submitted himself to it for the improvement and good governance of the profession as a whole.

In the U.S.A. Optometry Acts are in force in all 48 states of the Union and in the District of Columbia. In nearly all parts of the Empire the same is true by virtue of the following statutes:

AUSTRALIA

New South Wales:

Opticians' Acts, 1930/8.

Queensland:

Opticians' Acts, 1937/9.

South Australia:

Opticians' Acts, 1920/2.

Tasmania:

Opticians' Act, 1913.

Victoria:

Opticians' Registration Act, 1935.

BRITISH GUIANA

Opticians' Act, 1933.

CANADA

Alberta: Optometry Act, 1921.

British Columbia:

Optometry Acts, 1921/35.

Manitoba: Optometry Act, 1909.

New Brunswick:

Optometry Acts, 1921/36.

Nova Scotia: Optometry Act, 1921.

Ontario: Optometry Act, 1936.

Prince Edward Is.:

Optometry Act, 1922.

Quebec:

Optometrists' and Opticians' Acts,
1907/37.

Saskatchewan: Optometry Act, 1924.

NEWFOUNDLAND

Optometry Act, 1928.

NEW ZEALAND

Opticians' Acts, 1928/34.

WEST INDIES

Jamaica: Opticians' Law, 1926.

Trinidad:

Opticians' Registration Ordinance,
1933.

Perhaps the most striking anomaly is the fact that in some parts of the Empire, as, e.g., New Zealand, the West Indies, etc., a British diploma entitles the holder to admission to the state register, thus conferring on him privileges that are denied him at home.

(iv.) **The Work of the Optical Practitioner.**

46. In view of what has already been said on the subject of training and examination it is, perhaps, not necessary to do more than to summarise the present-day scope of ophthalmic optics under the following headings:

- (i) *Private Practice.* This forms the greater part of the optical practitioner's work, the preference of the public in this connection being well established.
- (ii) *National Health Insurance Practice.* As with private practice, the greater part of the insured population shows a preference for the services of optical practitioners, notwithstanding that a small number of approved societies compulsorily direct their members to a medical service and assume full responsibility for the fees thereof.
As already mentioned, this side of the work is controlled by the Ophthalmic Benefit Approved Committee and it is worth noting that in laying down its standards the O.B.A.C. adopted the principles already enunciated and applied some 5 years earlier by the Joint Council of Qualified Opticians. These principles voluntarily adopted by the profession for National Health Insurance work thus later became the accepted basis of the official scheme.
- (iii) *Visual Welfare in Industry.* Numbers of large industrial firms in the country are using the services of

optical practitioners in providing an optical service for their employees, thus enabling industrial eyesight to be dealt with against its proper occupational and environmental background.

This service has proved so satisfactory that it has been adopted by the Ministry of Supply for Royal Ordnance factories throughout the country. Practitioners undertake the refraction work, where necessary issuing a prescription to be made up by the employee's own optician. The fee for the examination is met by the Treasury.

In Royal Ordnance factories alone more than 30,000 workers have been examined by optical practitioners, who work in close collaboration with the factory medical officers.

Assistance has also been given in the protective field and in at least one instance a special goggle has been designed which must have saved hundreds of eyes from injury.

- (iv) *In the Forces.* Owing to medical opposition the optical practitioner is not recognised in his professional capacity in the medical branches of H.M. Forces.

In the Army and the Royal Navy he is permitted to act only as a dispensing optician with the rank of sergeant or petty officer. In the R.A.F. the scope of his duties is a little wider but he is graded only as an optician-orderly with the rank of sergeant, if establishment allows.

In all three services optical practitioners are in many cases carrying out refraction unofficially, but receive no recognition for this work.

In the non-medical branches of the Forces, where, of course, medical men are not in control, there is a marked contrast, for optical practitioners are used in a variety of scientific capacities for which their training suits them and commissioned rank has been granted freely to them.

The treatment of optical practitioners in H.M. Forces in this country is sharply at variance with

what obtains in the Australian and New Zealand Forces, where practitioners holding British qualifications are used in a professional capacity and accorded commissioned rank.

(v.) Research and Advances in Technique.

47. For the last 40 years the subject of research has increasingly occupied the minds of optical practitioners. It has been encouraged by the provision of scholarships, by collective efforts organised or sponsored by the optical associations and to no small extent by individual effort.

48. It is not possible to give here a full list of the published results of such research but for those who are interested a representative selection will be found in a later part of this memorandum (b).

49. In the field of instrumentation valuable contributions have also been made by optical practitioners and a selection of these, too, is given (b).

50. Optical practitioners are particularly proud of their contribution to the correction of squint. During the 18th century medical men were helpless to correct it (c), though Chevalier John Taylor a qualified but itinerant and unorthodox practitioner, undoubtedly put squinting eyes straight by surgical means, which probably involved severance of the tendons or muscles of the eye. His methods were naturally decried by orthodox medicine, yet in another 100 years tenotomy and myotomy, which he practised, had become the normal medical procedure.

51. Surgical measures alone are not, however, as a general rule, a true remedy and the first moves in the diagnosis and treatment of squint as we now know them came from Emile Javal (d), whose work was developed in England by Claud Worth, a surgeon (e). This technique was practised by medical men but in most cases with little or no improvement on the teachings of thirty years ago.

52. Optical practitioners have, however, been able to make considerable advancement. The London Refraction Hospital provided orthoptic treatment from its inception, but originally as part of the ordinary clinical arrangements. By 1926, however, the demand for this treatment

had become such that a separate orthoptic clinic was established—the first in any hospital in Great Britain.

Originally, the Worth technique was largely employed, but in about 1933 Walter Green introduced into this country the newer methods of Cantonnet and Filliozat, which, conjoined with the Worth teaching, were developed by Green and his colleagues at both Refraction Hospitals, where the modern psychological techniques have been practised with great success. From the clinical experience gained at these hospitals two textbooks (f) have been compiled and are used by medical and optical men alike. At the same time valuable research has been carried out at the Northampton Polytechnic's Orthoptic Clinic, some of the results of which may be found in H. H. Emsley's *Visual Optics*. The design of a number of the latest instruments (g) and their associated techniques have been developed largely from experiments carried out by optical practitioners.

CONCLUSIONS.

53. It will be seen from what has been said that ophthalmic optics has developed from the physical sciences.

54. It has developed on distinct and separate lines from quite early times because it is primarily concerned with the adequacy of healthy eyes, thus differing from ophthalmology which is traditionally occupied with disease. These constitute the essential differences between the two professions in their fundamental outlook and fields of work, which make it impossible to combine satisfactorily their respective functions within the same profession. It should be noted that for centuries nearly all medical men regarded glasses as either useless or definitely harmful.

55. The present high standard of efficiency has been achieved by means of voluntary action on the part of the optical profession and without the assistance of the State except insofar as certain of the training colleges are state-aided.

56. The field of ophthalmic optics is linked with that of medicine only where the detection of pathological conditions is studied, but this is done, not for the purpose of purporting to treat such conditions, but solely for that of recognising them so that they may be referred for the necessary medical attention.

(b) See Appendix B.

(c) Sorsby, *Short History of Ophthalmology* (1933), p.61.

(d) *Manuel Théorique et Pratique du Strabisme* (1896).

(e) *Squint, its Causes, Pathology and Treatment* (1903).

(f) Giles, *Manual of Practical Orthoptics* (1938) and *Practice of Orthoptics* (1943).

(g) e.g., those of Cole, Skewes, Green, etc.

(II.) To show that in the public interest Optical Practitioners should continue as a separate and independent profession.

57. As already indicated (paras. 3-7, *supra*) official medicine has for many years opposed the development of the optical practitioner with every force at its disposal, repeatedly urging that the danger of his overlooking a diseased or pathological condition of the eye is so great that he ought not to be permitted to carry out a sight-testing examination in any case or to prescribe for the correction of errors of refraction.

58. It is not proposed to dwell at this stage upon the weight of this argument, which is considered elsewhere (h), but as a corollary to it, it has long been the proposal of organised medicine that the optical practitioners should be reduced to the level of a dispensing optician, i.e., one who 'does no sight-testing and who only supplies spectacles in accordance with a prescription.

59. Notwithstanding such opposition it is an incontrovertible fact that ophthalmic optics has developed to a remarkable extent, particularly in the last half century and, perhaps because of this, a new or alternative attitude seems, more recently, to have been engrafted on to what we may term the traditional medical view. This is to the effect that if, as a temporary measure, optical practitioners are to be allowed to continue sight-testing and prescribing, then they should do so only under full medical control.

60. It is, therefore, the purpose of this part of the memorandum to shew that, quite apart from the question of equity, it would not be in the public interest that either alternative should be permitted and the matter is approached from the points of view of:

- (i) Efficiency of Service.
- (ii) Public preference.
- (iii) Development, past and future.

(i.) Efficiency of Service.

61. It is submitted that it cannot reasonably be doubted that the service provided by optical practitioners is adequate and satisfactory. If it were not, then there would scarcely be some 7,000 of them in practice, nor would they have

been permitted to participate in the National Health Insurance Ophthalmic Benefit Scheme to the extent they do, nor would the legislature have been prepared to grant the limited measure of state registration that is implied in the List maintained by the Ophthalmic Benefit Approved Committee.

62. Moreover, examples are not lacking of individual ophthalmologists having publicly stated their awareness of optical practitioners' capabilities. Thus, Sir George Berry, surgeon-oculist to His Majesty in Scotland, has stated (i), "... 95% of cases of eye trouble are of only optical defect. . . . In point of fact, the skilled optician is perfectly competent to undertake the correction of optical defects"(j).

63. The question of the efficiency of a service is to no small degree bound up with that of its availability, particularly in a geographical sense. From this point of view the optical practitioner provides a truly nation-wide service.

64. As further evidence of the fact that optical practitioners are officially regarded as performing a vital service satisfactorily it may be mentioned that their liability for military service under the National Service Acts is subject to a special scheme agreed between the Ministry of Health and the Ministry of Labour and National Service, the object of which is to ensure that no man shall be enlisted for service in the Forces if the optical facilities in the area he serves would thereby be reduced below what is regarded as a reasonable minimum. These arrangements are exactly similar to those applying to the medical and dental professions.

(ii.) Public Preference.

65. It has already been stated (para. 1, *supra*) that the majority of the public consult optical practitioners in the first place in relation to their eye troubles. Unfortunately it is not possible to prove precisely the extent to which this is done since no figures showing the number of refractive cases dealt with by the medical and optical professions, respectively, can be produced.

66. It is known, however, that there are about 1,000 ophthalmic surgeons and ophthalmic medical practitioners now available (k) (but see para. 91). As against this there are some 7,000 optical practitioners and, assuming for the moment

(h) See Appendix A.

(i) Optical Practitioners' (Registration) Bill, 1927: Debate on Second Reading, Hansard, 206.826.

(j) See also Appendix A, paras. 9-10.

(k) Per N. Bishop Harman, Annual Meeting, B.M.A., 10th September, 1942.

that medical and optical men handle on the average the same number of refraction cases each, we are led to the conclusion that medical refractionists deal with about one-eighth and optical practitioners about seven-eighths of the total amount of refraction work carried out. This does not, however, take into account that the medical men are required to deal with surgical and pathological work which naturally reduces the time available for purely refractive cases. Probably, therefore, medical men handle no more than one-tenth of the refractions done, the remaining nine-tenths being dealt with by optical practitioners.

67. It will thus be seen that the preference of the public is very marked indeed, notwithstanding the intensive publicity that has been carried on for nearly 13 years on behalf of medical interests and despite the fact that in the sphere of National Health Insurance a small number of approved societies compel their members to undergo a medical eye examination as a condition of their receiving benefit.

(iii.) Development—Past and Future.

68. It is submitted that the field of public health is now too wide to be covered adequately by a single profession and that so great is the knowledge needed in this sphere that its successful application has required, and must in the future require, the development of separate and complementary professions within the general fabric of the health service.

69. This is obviously appreciated in official circles for Sir Wilson Jameson, Chief Medical Officer of the Ministry of Health, in his speech to the Industrial Health Conference in 1943 (1), indicated the necessity for joint efforts by all concerned in the field of public health and said that in any planned effort to raise the standard of public health service, medicine had an important but by no means the only part to play.

70. In the two fields of ophthalmic optics and ophthalmology both the approach and outlook are fundamentally different, for while the former is based on the science of physics and its application to visual needs, the latter is primarily concerned with pathology. That is to say, ophthalmic optics is concerned with healthy eyes and the correction of their anomalies of vision; ophthalmology is concerned with unhealthy eyes and the treatment and cure of disease.

71. A recent statement of Professor John Ryle (m) supports this:

"The majority of doctors have been compelled to the belief that their first function is the treatment of disease or injury and not the maintenance of, or education for, health. Medical students are still largely bred in this belief; they learn little of the foundations, meaning or measurement of health and rarely examine a healthy subject. The public for the most part think of the doctor as someone to consult in times of sickness only."

72. Moreover, it is psychologically unsound to bring under the influence of medicine the large numbers of the public who are healthy subjects and whose visual efficiency has been, and can be, looked after by the optical practitioner. It is, of course, necessary that there should be adequate safeguards to ensure that cases of disease are sent forward for medical attention, but these safeguards already exist. Optical practitioners are trained and examined in the recognition of diseases by medical men and the fact that under National Health Insurance arrangements they are required to refer such cases surely constitutes official recognition that they are capable of identifying them.

73. Optical practitioners could, indeed, have reached proficiency in the recognition of abnormal conditions more easily if organised medicine had assisted in providing facilities. As it is the optical profession acknowledges with special gratitude the public spirit of those individual ophthalmologists who have helped it to become efficient in this sphere.

74. It is certainly true that no profession can live on its past but there are valuable lessons to be learnt from it and it has been thought expedient to give in earlier paragraphs some account of the history of ophthalmic optics to show the manner of and reason for its development as a separate field of work.

That development, despite medical opposition and indifference from the earliest times, has continued unchecked.

75. The present stage of advancement has been attained under the system of domestic professional control that still exists and which has amply justified itself by the fruit it has borne. The substitution of medical control—and, it must be remembered, this would mean control not only of practice, but also of training, ex-

(1) Reported in *The Lancet*, 17th April, 1943, p.500.

(m) *Brit. Med. Jnl.*, Editorial, 7th August, 1943, p.174.

amination and research—would, it is suggested, hamper continued development along the present very satisfactory lines because of the fundamentally different outlook and approach of the two professions.

76. Although ophthalmic optics is of early origin, the most intense period of its development has been the last 50 years; the major techniques of refraction are, therefore, modern and capable of vigorous growth and scientific extension so long as they are not stifled by an unsuitable form of control.

77. Moreover, it would seem illogical to hand control of the techniques optical practitioners have largely developed and are still developing satisfactorily to a profession which has not only aggressively opposed the just claims of the optical profession for many years but which did not see fit itself to cater for a public need which apparently "only became pressing when there was a probability that this field of practice would escape from the grasp of its members" (n).

78. In general the relationship of the British Medical Association to allied professions is a grave reflection on organised medicine itself, since its present activities and past history shew it to be much more fully concerned with its own interests than with those of the public as a whole.

79. It will be recalled that in 1911 organised medicine opposed in every way possible the introduction of the National Health Insurance Act—a measure which, with all its admitted anomalies, it cannot be doubted has been to the great and lasting benefit of the public as a whole.

80. Again, in 1937, there was the most intense medical opposition to the National Health Insurance (Additional Benefits) Regulations of that year. The object of these regulations was to improve and unify the administration of ophthalmic benefit to the advantage of the insured population and the necessity for such improvement was strongly urged by all approved societies and was fully recognised by the Minister of Health.

81. More recently, Lord Latham, Chairman, London County Council, referring to the Government's formulation of a comprehensive health scheme based on Assumption, B of the Beveridge Report said (o):

"Unfortunately, there are not wanting indications that many of the official spokesmen of the doctors are approaching the matter from a narrow profes-

sional—not to say selfish—point of view."

82. It may also be mentioned that although dentists and pharmacists are now both state-registered by virtue of their own acts of Parliament, medicine has nevertheless clung to its right to dispense and to practise dentistry notwithstanding that training in either now forms but a negligible part of medical school curricula.

CONCLUSIONS.

83. It is submitted that the continued existence of the optical profession as a separate entity is justified on grounds alone of its proven efficiency and of the very marked preference that the public shews for its services.

84. It is necessary, however, also to safeguard future development as a public health service along the best possible lines. So far as this is concerned it should be noted that its growth so far has been natural and has produced satisfactory results, but the substitution of some alternative or artificial form of control vested in another profession would militate against further development along the same beneficial lines.

85. To maintain the standards of a professional technique and to foster the requisite sense of corporate and individual responsibility, control of its work must rest with the profession itself, subject only to the over-riding supervision of the state.

86. Broadly speaking, the medical and optical professions should provide complementary services, relative respectively to the fields of pathology and refraction. Once ophthalmic optics is fully regulated by the state as a separate profession it would be a simple matter to provide suitable links with medicine within the general structure of the health services of the nation. Both the public and the professions—and, therefore, the state—must benefit if a sound relationship is established.

(iii.) To show that full effect cannot otherwise be given to the three principles laid down by the Ministry of Health as those upon which the future Health Service will be based.

87. It is now proposed to consider with particular reference to the optical profession three basic principles which, it is to be gathered from statements on behalf of

(n) Carr-Saunders and Wilson, *The Professions* (1933), p.474.

(o) Reported in *The Times*, 6th Oct., 1943.

the Ministry of Health, are those upon which the nation's comprehensive health service will be built. These principles are in substance as follows:

- (i) To provide the best services and provide them for all.
- (ii) To ensure personal and professional freedom.
- (iii) To aim at the preservation of health as well as the cure of disease.

(i.) Best Services for all.

88. The cardinal requirement of this principle is that the service should be efficient, and full consideration of what is efficient, in turn, requires that there should be taken into account the accessibility of the service, the established preference of the public and the best use of existing facilities, providing always that they are technically adequate.

89. It is at least doubtful whether the most efficient service can be provided by a single profession that attempts to cover too wide a field, especially when that field falls naturally into two parts springing from different technical sources.

90. Pure ophthalmology is already wide and rapidly developing. The same is true of ophthalmic optics and separation of the two techniques is, it is submitted, in the best interests of the public. The medical profession is not in a position to provide the best, or even an adequate, service in refraction if only through sheer lack of numbers, since according to the British Medical Association (p) there are now but 1,000 ophthalmic surgeons and ophthalmic medical practitioners to deal with the requirements of 45,000,000 people, including surgical and pathological work.

91. Moreover, of this 1,000 a substantial proportion consists merely of general practitioners who have been persuaded to work under the B.M.A.'s medical ophthalmic service, which was initiated in 1927 to block the Optical Practitioners' (Registration) Bill (q). In 1938, Mr. F. E. Preston, president of the Association of British Ophthalmologists, said at a conference of the Association at Oxford that, of a total of 902 medical men working the scheme, only 342 were consultants, the remainder being general practitioners (r). It seems fair to assume that the proportion is not now materially different.

92. Thus, despite the fact that in 1927

the medical profession was given an opportunity (at the expense of the optical profession) to provide what it then said was the best service (q), 16 years have passed and medical men are still dealing with only about one-tenth of the people requiring refractive attention (s).

93. The general position is fully appreciated in medical circles, as witness a recent editorial in the *British Medical Journal* which said, "... Doctors simply have not the time necessary to do their job with satisfaction either to the community or themselves" (t). The same article quotes and supports Sir Farquhar Buzzard (u) in saying, "The number of doctors must be increased or their work decreased. The first alternative is a melancholy and defeatist attitude; the second deserves more careful consideration than it has yet received."

94. A rather different point, but one that bears strongly on the question of what is the best service, is that the division of responsibility between the prescriber and the dispenser of glasses under medical arrangements is fundamentally unsound. A patient with an error of refraction needs to be supplied with an optical appliance that will correct that error and it should be the responsibility of the person who carries out the examination to provide him with it.

95. In this connection it is pertinent to quote the opinion of Dr. W. H. Crisp, the eminent American ophthalmologist (v):

"Nor should it be forgotten that an important part of refractive technique lies in the proper adjustment of frame and lenses, and that a good refractive diagnosis may be spoiled, so far as the result to the patient is concerned, by neglect as to centering and angling of the lenses or as to the distance from the eyes."

Moreover, any subsequent adjustments that may be needed can be effected by the refractionist with full knowledge of the condition shewn by his examination. Separation of the practice and the application of refraction is artificial and illogical. Nor is it in the best interests of the patient.

(ii). Personal and Professional Freedom.

96. By the expression "personal freedom" is presumably meant the freedom of

(p) Report of Annual Meeting, 10th Sept., 1942, cited in para. 66 (*supra*).

(q) See para. 28 (*supra*).

(r) Reported in *The Ophthalmic Bulletin*, January, 1939.

(s) See para. 66 (*supra*).

(t) Issue of 7th August, 1943, p.174

(u) Writing in *The Times* of 21st July, 1943.

(v) *Am. Jnl. Ophth.*, August, 1943.

the individual member of the public to obtain attention in the manner that most commends itself to him and from a practitioner of his own choice.

97. Organised medicine, in opposing the suggestion of a state salaried medical service, has already laid stress on the importance of this principle. The optical profession agrees that it is vital and has nothing to add save to point out that the public already enjoys in large measure freedom of choice in respect of optical facilities and that this freedom is exercised in a very marked manner in favour of optical practitioners (w).

98. In relation to professional freedom Mr. Ernest Brown, then Minister of Health, speaking at the Westminster Hospital Medical School (x), said that the true liberty of the professional man was freedom to exercise his knowledge and his skill according to his conscience and ability, without fear or favour.

99. It would be difficult to find better words for what the optical profession is claiming.

100. Professional freedom, it is evident, is closely connected with the provision of the best service. The greatest stimulus to advancement must always come from within the professions themselves and to this end it is important that each independent profession should be encouraged to retain the fullest measure of self-government, subject only to the over-riding authority of the state.

iii.) Preservation of Health, not Cure of Disease alone.

101. In any health service that purports to be comprehensive the need of ensuring the preservation of the health of the individual is obvious.

Many human ills are due to working conditions and environment and most of them are therefore avoidable and there is ample evidence of the economic losses sustained by industry and by the nation as a whole owing to the lack of a complete complementary social service of this kind.

102. The optical practitioner's work is largely preventive in nature, for by correcting refractive defects he is remedying a condition which, if unchecked, leads to

the all-too-familiar types of fatigue and inefficiency. The optical practitioner has not only recognised his share of responsibility in this direction but has also made positive attempts to neutralise the ill-effects of occupation on eyesight.

103. This is shown by his work in factories, which first began some 10 years ago and which is so satisfactory as to have been adopted by the Ministry of Supply. So far, however, only the fringe of the problem has been touched and the work of maintaining optical comfort and efficiency is capable of extension to an almost unlimited variety of visual tasks.

104. A wide sphere of development in this particular direction is therefore open and the optical profession will be found willing and anxious to co-operate loyally in whatever demands may be made of it in this or in any other phase of its professional work.

With regard to these wider issues we feel certain that the opportunity exists to establish an ophthalmic service which would be an outstanding model and which might favourably influence associated development in all parts of the world.

CONCLUSIONS.

105. It is submitted that the "best service" cannot be given to the public except by utilising to the full the existing facilities provided by optical practitioners. This, in turn, calls for the State regulation of the profession at the earliest possible moment, together with the provision of suitable liaison arrangements with the medical profession within the general organisation of the comprehensive health service.

106. The optical profession is already State regulated to some extent through the Ophthalmic Benefit Approved Committee.

The optical practitioner earnestly desires that State regulation shall extend to the complete protection of his professional title and function and although the present N.H.I. arrangements are perhaps not ideal for this particular purpose there can be little doubt that the experience gained under them would be found of the utmost value in setting up a full State register for the profession.

(w) See para. 66 (*supra*).

(x) Reported in *The Times*, 5th October, 1943.

APPENDIX A.

Medical Opposition to the Optical Profession.

1. The attitude of organised medicine towards the optical practitioner has already been referred to in various parts of the preceding memorandum and the essential nature of the differences between the two professions has been explained briefly. It is now proposed to examine a little more fully the contentions of the medical profession in this connection.

2. Before doing so however it would be as well to give some account of certain medical activities contemporary with the presentation in Parliament of the Optical Practitioners' (Registration) Bill, 1927.

3. That Bill was referred to a Departmental Committee, whose majority report (a) advised against State registration, the reason for this recommendation being, in the Committee's own words:

"... we are satisfied that there exists a movement on the part of the medical profession to provide treatment by oculists on terms which will make that treatment much more readily accessible to the public. We are assured, for example, that so far as insured persons are concerned, negotiations are at present being conducted by the British Medical Association with a view to the establishment in all the more populous districts of clinics . . . The setting up of a State register of opticians would not encourage and might indeed retard these movements" (b). "... we desire to emphasise that one of the principal reasons on which we base this opinion (i.e., against a State register) is our view that it is possible and probable that the medical profession will be able to provide insured persons . . . with the services of oculists at an early date . . . We hope also that such a service will be extended to the non-insured population. If, however, these hopes are not fulfilled within a reasonable time we do not wish our report to preclude the possibility of a reconsideration of the question in the light of the circumstances then existing" (c).

4. The negotiations referred to in due course resulted in the formation of the National Ophthalmic Treatment Board, an organisation which, under the name of the National Eye Service, provides examination by medical men and the supply of any necessary glasses through a number of firms of dispensing opticians associated

with the Board.

The Board, which consists of representatives appointed by the B.M.A. and by the Guild of British Dispensing Opticians, did not, however, commence operations until 1930, that is, until three years after the Optical Practitioners' (Registration) Bill had been rejected. This seems to make it quite certain that the negotiations mentioned had as their express object the blocking of the Bill, but for which the anxiety of the British Medical Association to make the services of oculists readily available to the public at fees within their reach might not have found expression.

5. In relation to medical opposition generally it will be remembered that the view put forward is that the optical practitioner should not be allowed to do more than make up glasses ordered by a medical man and that, in particular, he should not be permitted to test sight or to prescribe for the correction of errors of refraction.

6. The principal reason given for this is the danger—said to be a serious one—that an optician is likely to overlook a diseased or abnormal condition. This has, however, been enlarged upon and supplemented, as follows:

- (i) That though optical practitioners may claim to be trained to detect abnormal conditions, such training is utterly inadequate for the purpose.
- (ii) That the examination of eyes and the prescribing of treatment, whether in the form of corrective lenses or otherwise, are matters exclusively within the sphere of medicine, and
- (iii) That it is not desirable to combine in one person the professional function of prescribing with the commercial one of selling spectacles.

7. It is not proposed to comment on the bare assertion that the optical practitioner should not be allowed to test or prescribe, except to say that his ability to do so is fully recognised by the public and also by the Ministry of Health and the Government, by virtue of the part he takes in National Health Insurance and Royal Ordnance factory work. It is very necessary, however, to deal fully with the grounds upon which the assertion is supposed to be based.

8. The first such ground is the suggested inadequacy of the optical practice

(a) Cmd. 2009 (1927).

(b) *Ibid.*, p.17

(c) *Ibid.*, p.18.

tioner's training to detect disease. But any allegation of this sort by the medical profession in fact amounts to no less than a condemnation of the abilities of certain of its own members, for, as has already been stated, the training and examination of optical students in pathological subjects is carried out by medical men.

9. In this connection it is interesting to quote the views of Mr. Sydney Tibbles, the ophthalmic surgeon (d):

"In all fairness to the optician I must say that if they meet with any abnormality they are only too pleased to send the patient to someone . . . For years I have examined in one section out of five on abnormalities and diseases of the eye for the Institute of Chemists-Opticians. Last week I could only find one candidate out of six whom I could conscientiously mark below 70% in my section. I do not set the papers, which are under the supervision of officials of the University of London."

10. The opinion of Mr. G. Lindsay Johnson, another ophthalmic surgeon, is even stronger (e):

"Perhaps it may come as a surprise to many of your readers when I assure them that the examinations held by the Spectacle Makers' Company and the British Optical Association (at any rate, for honours) require quite as much hard study as is necessary to pass the M.B. or Conjoint examination at any of our medical universities and schools in Great Britain."

"I speak from personal knowledge, as I was one of the four examiners for 10 years for the Spectacle Makers' Company, in conjunction with Prof. Silvanus Thompson, F.R.S., Prof. Glazebrook, F.R.S. and Dr. Smith, F.R.S."

"On one occasion I handed the list of questions I had just set for the candidates of the Spectacle Makers' Company to the entire senior staff of the Royal London Ophthalmic Hospital and not a single one of the ten surgeons there could answer more than one or two or, at the most, three of the questions set."

In fairness to both sides, however, it is desirable to make two comments. The first is that Mr. Lindsay Johnson is referring to the papers of the examination as a whole and not merely to the "diseases" papers. The second is that since he wrote

the above 11 years ago all the optical examinations have been made of equal standard; moreover that standard has been appreciably raised.

11. To the above it is only necessary to add what has already been said, viz., that as, under National Health Insurance arrangements, optical practitioners are required to refer pathological cases for other attention, their ability to recognise them is implicit.

12. The second ground referred to in paragraph 6 (*supra*) is that the examination and treatment of the eye, including the prescribing of spectacles, is wholly within the medical sphere. So far as treatment of disease pure and simple is concerned, the optical profession is in complete agreement and it has, in fact, never attempted to trespass on what it regards as exclusively medical territory.

13. But whether prescribing for errors of refraction alone is a wholly medical concern, is a matter of opinion. Optical practitioners have been doing it for some hundreds of years longer than medical men and we have it on the authority of Mr. G. Lindsay Johnson, M.D., F.R.C.S., that, save in isolated cases, the latter have done so for no longer than 70 years (f). Thus, though there is apparently a suggestion that the activities of optical practitioners constitute an attempt to supplant medical men, the facts are the very opposite. This has already been shown in the short historical survey in Part I of the memorandum.

14. The third ground relates to the inappropriateness of combining the professional work of prescribing with the commercial activity of selling spectacles. But this hardly seems to differ from the supply of medicine by a doctor or dentures by a dentist; moreover, it is by no means unknown for doctors to provide glasses and, indeed, their right to dispense their own optical prescriptions has been asserted on many occasions (g). Presumably, in this respect, medical and non-medical refractionists are deemed to be subject to different rules and what is "commercial" in an optical practitioner becomes a right in the hands of a medical man.

15. The point is sometimes put by medical interests in a slightly different way, viz., that because the optical practitioner provides glasses, then he will generally take care that patients have them,

(d) *Brit. Medical Jnl.*, 26th Nov., 1937.

(e) *South African Medical Jnl.*, Feb., 1932.

(f) *South African Med. Jnl.*, Feb., 1932; also confirmed by authorities cited at page 5,

para. 19 (*supra*).

(g) As, e.g., *Ophthalmic Bulletin*, Jan., 1939: Medical Practitioners' Union's circular to members, 25th Nov., 1937.

whether strictly they need them or not. The presumption is a purely gratuitous one and even the Majority Report of the Departmental Committee on the Optical Practitioners' (Registration) Bill (h), which was preponderantly pro-medical in tone, said of this (i):

"We pass over any suggestion that in practising his craft he may be unduly influenced by the fact that a prescription of glasses involves a sale of his own goods, since that temptation only differs in degree from that which necessarily operates in almost all professions."

It is also to be remembered that persons who wear glasses generally do so unwillingly. Unnecessary prescribing by optical practitioners in the past would therefore have invited—and deserved—public disapproval. But no such disapproval exists.

16. In connection with a general charge of commercialism against optical practitioners, it is material to mention that ever since its creation the National Eye Service has been the subject of publicity of the most intensive type. Leaflets have been showered on approved societies and full-page advertisements have appeared in the national daily papers. The most recent circular supplied to approved societies for distribution to members contains, after the usual claim that only a medical man can properly examine eyes, the following:

"The work of the optician is of the utmost value. We look to him to prepare the lenses and frames that are necessary; he has the skill of grinding the curvature of the glasses to the prescribed degree and the capability of making metal into convenient and comfortable frames.

"But his work begins and ends there. To expect him to 'test eyes scientifically' would be like expecting the oil and colourman to be an artist just because he has skill in stretching canvases and mixing paints."

It seems that the National Ophthalmic Treatment Board's anxiety to press home its point is leading it into misrepresentations and errors of taste unworthy of a great profession.

17. The following observations on the National Eye Service may also be quoted from *The Ophthalmic Bulletin* (j), a medical journal and organ of the Association of British Ophthalmologists:

"... we are concerned that the N.O.T.B. has either failed or never attempted to achieve the objects for which it was formed . . . We maintain . . . that this scheme which was initiated for the purpose of providing an efficient industrial ophthalmic service . . . has degenerated into a purely commercial concern."

18. The attacks upon the optical practitioner's ability to detect abnormal conditions of the eye have not, however, been confined to mere assertions of incompetence. Attempts have been made to produce concrete evidence to show that the percentage of eye cases requiring medical attention is, in fact, very much higher than the percentage of cases referred for medical attention by optical practitioners and thus to infer either that the optical practitioner failed altogether to detect the condition, or that, having detected it, he failed to refer it.

19. To this end Mr. N. Bishop Harman, then Chairman of the Ophthalmic Group Committee of the B.M.A., caused to be made annually analyses of straight runs of 10,000 cases from the records of the National Eye Service and the published results for the five years 1934-1938 were (k):

Errors of refraction	32,295	63.65 %
Errors of refraction and other eye conditions	14,047	27.68 %
Other eye conditions only	4,008	7.90 %
No appreciable defect	391	0.77 %
	<u>50,741</u>	<u>100.00 %</u>

It will be observed that the total percentage of cases with "Other eye conditions" amounts to 35.58%.

20. Mr. Bishop Harman then ascertained from a group of approved societies having a membership of several millions that of all their members seeking ophthalmic benefit an average of only 3% was referred by optical practitioners for medical attention and, on comparison of this with the above figure of 35.58%, drew the inference he was seeking.

21. He did not, however, make any allowance for the important fact that a medical eye service would naturally receive a high percentage of cases calling for medical attention and, indeed, it is

(h) Cmd. 2999 (1927).

(i) *Ibid.*, pp.15-16.

(j) Issue of January, 1939.

(k) *Brit. Med. Jnl. Supplement*, 11th Feb., 1939; also circulated in pamphlet form to approved societies.

only surprising that the figure is not more than 35.58 %, because it would include:

- (i) Persons sent for medical examination by their approved societies or general practitioners because of known or suspected disease.
- (ii) Persons who themselves knowing of or suspecting disease chose to be medically examined.
- (iii) Cases which because of injury, pain or sudden diminution of vision were obviously medical cases.

22. The figures quoted in para. 19 were accompanied by an analysis classifying the cases under the various conditions encountered and though it is obviously not possible to make any full criticism without access to individual case records, certain conclusions may be drawn from the figures themselves. These conclusions and the figures extracted from the analysis to which they relate are as follows:

	Cases	%
(i) Injuries or effects thereof	503	.99
Diseases of the conjunctiva	3717	7.33
Diseases of the cornea	1140	2.25
(In all three categories the conditions, being as a rule visible and/or painful, would automatically be taken to a medical man).		
(ii) Myopia over 5 dioptries	1616	3.18
(Myopia, or short sight, is neither a disease nor a condition requiring medical attention, save in those rare cases where it is either rapidly progressive or malignant.)		
(iii) Constitutional diseases	2273	4.48
(i.e., ocular manifestations due to affections of other parts of the body. But the causative complaint would normally be receiving the attention of a general practitioner who would naturally send the patient to an oculist for any necessary specialist ophthalmic treatment.)		
(iv) Bad conditions of work	238	.47
(This involves no question of disease and the remedy is certainly not exclusive to the medical profession.)		

(v) Squint 3726 7.33

(Of these cases only a comparatively small number would be paralytic or would for other reasons demand medical attention.)

(vi) Other material conditions 1833 3.61

(Of the nature of these no information is given. It seems somewhat strange, however, that a miscellaneous category should—relative to the others—contain so many cases that did not justify more exact classification.)

It will be observed from the above that (i) and (iii), totalling 7,633 cases (or 15.05 %) may fairly be regarded as cases in which an optical practitioner would not normally be consulted at all; while (ii), (iv) and (v), totalling 5,580 cases (or 10.98 %), are for the most part conditions that do not require medical attention and with which an optical practitioner can quite properly and efficiently deal. One further point is that the quoted figures make no allowance for old or congenital conditions for which treatment is likely to be ineffective.

23. Mr. Bishop Harman's figures are not, therefore, fairly relevant for the purpose of proving what he set out to establish, for notwithstanding his assertion that "there has been no selection of cases" the very method of collecting these statistics automatically weighted the evidence in favour of the medical view.

In confirmation of this it is pertinent to refer again to the remarks of Sir George Berry, surgeon-oculist to the King in Scotland, during the debate on the second reading of the Optical Practitioners' (Registration) Bill, 1927. He said (1), "... 95 % of cases of eye trouble are of only optical defect. . . ." This figure is in substantial agreement with that given by the group of approved societies mentioned in paragraph 20 and in any case it is hardly credible that a distinguished ophthalmic surgeon would place before Parliament figures of which he was not reasonably certain.

24. In most medical dissertations on the shortcomings of the optical practitioner it is customary to quote copiously from the Report of the Departmental Committee on the Optical Practitioners' (Registration) Bill, 1927 (m), and to a lesser degree

(1) *Hansard* 206, 826.

(m) *Cmd. 2999 (1927)*.

from the Final Report of the Departmental Committee on the Causes and Prevention of Blindness, 1922. It is not possible in the space at our disposal to reproduce all the usual quotations, but as the former Report said in a variety of ways what may, in fact, be reduced to two propositions it will perhaps be sufficient merely to give the sense of them. They are:

- (i) That as an optical practitioner cannot treat disease he can at best provide only a partial service and that it would therefore be preferable for an oculist to be employed in all cases.
- (ii) That the training of optical practitioners in the recognition of abnormality is inadequate.

25. The second proposition has already been dealt with in paragraph 8 *et seq.* (*supra*). In relation to the first it is necessary to point out that the service provided by optical practitioners is "partial" to the extent of about 5% of cases only. Moreover, there is nothing inherently and necessarily bad about a partial service provided it is not so circumscribed as to be inadequate and provided its scope is reasonably clearly defined—conditions which, it is contended, are satisfied in the present case, thus enabling 95% of cases to enjoy all the benefits of a specialised service.

26. The sphere of medicine itself is subdivided in a score of ways and specialisation in particular branches of the work is so common as to call for only passing mention. Such specialisation is only natural and is of the essence of efficiency.

27. The Report to which such frequent reference is made by medical men is, in fact, a majority report only and there were, in addition, two minority reports, both of which supported the State registration of optical practitioners. In view of this the decision of the signatories to the Majority Report not to publish the evidence taken has been the subject of the following criticism (n):

"Since the committee failed to agree among themselves it is much to be regretted that they declined to recommend the publication of the evidence they took, for it is impossible to judge how far the different opinions had the weight of evidence behind them."

28. The following extract from the First Minority Report (o), coming as it does from persons who heard the whole

of the evidence before the Committee, is an interesting comment on the principal ground (see paragraph 3, *supra*, for full statement thereof) on which the Majority Report considered a State register undesirable:

"Evidence was submitted by medical witnesses that the numbers and distribution of members of the medical profession specially trained to deal with the eyes are quite inadequate for the needs of the public. . . ."

"We do not consider that the establishment of clinics, staffed by medical practitioners along the lines indicated by medical witnesses, is likely to afford any practical solution of the main problem before us. . . . The Majority Report specially stresses the fact that this fresh proposal from medical organisations has largely determined its opinion that a State register would not be, at the present time, in the public interest; we submit that the whole idea of these potential clinics has received an entirely false emphasis, since . . . such a scheme . . . could only hope to affect a small proportion of the population. . . ."

We consider it, therefore, unreasonable for the Majority Report to conclude that a State register is almost inevitable, and then to ride off from this conclusion on the strength of an unexplored promise from one of the interested parties (traditionally jealous of subsidiary professions bordering upon its own). . . ."

29. The second official document referred to in paragraph 24, the Final Report of the Departmental Committee on the Causes and Prevention of Blindness, was concerned only to a small degree (and that outside its terms of reference) with the State registration of optical practitioners, but it expressed the opinion:

". . . that it would be undesirable and a positive danger to the public for Parliament to pass any measure which might convey the idea that an optician, who is a person qualified to provide glasses prescribed by medical men, is further himself competent to examine the eyes of patients and to prescribe glasses for the correction of errors of refraction" (p).

But optical practitioners do examine eyes and they do prescribe for the correction of errors of refraction and thus, in these words the Report committed itself to the extraordinary view that, so far as

(n) Carr-Saunders and Wilson, *The Professions* (1933), p.142.

(o) pp. 21-22.

(p) pp. 105-6.

the welfare of the public is concerned, a "positive danger" that is not controlled by the State is greatly to be preferred to one that is; and despite the horror with which the Committee viewed the prospect, Parliament subsequently did pass a measure that recognised the right of the optical practitioner "to examine the eyes of patients and to prescribe glasses for the correction of errors of refraction," namely, the National Health Insurance Additional Benefits Regulations, 1930, and later confirmed it in the amending regulations of 1937.

30. The Committee next delivered itself of the opinion that if a register were established it would probably be difficult to prevent unscrupulous persons who might succeed in obtaining admission to the register from posing and advertising themselves as experts competent to treat diseases of the eyes and the danger to the public would be increased as they "would regard the register as an official guarantee that those whose names were included in it were competent not only to provide but to prescribe glasses, and generally to deal with defects of vision from whatever cause arising" (p).

31. But this series of suppositions altogether ignores the fact that "unscrupulous persons" may well exist whether there is a State register or not and that once there is such a register—and they are on it—they immediately become subject to the same measure of control as other practitioners. It is when these people are not registered that their supervision is a matter of such difficulty.

32. It is to be regretted that this part of the Report showed such obvious marks of bias, but its presence is not surprising, bearing in mind that a large number of the Committee's members were medical practitioners, that it included no optical representatives and that it declined altogether to hear any evidence from optical organisations (q).

33. Such then, is the opposition of organised medicine to the optical profession

and such are the reasons officially given for it. It is submitted, however, that the real reason—or at any rate the most important from the medical point of view—is one that is never given officially, but which can be clearly seen in the following quotation from the *Ophthalmic Bulletin* (r):

"It is a fact, however unfortunate for the surgeon and the optician, that approximately 80 to 90 percent. of the former's professional time is engaged upon this routine exercise of merely one facet of his professional skill (i.e., refraction) and he, therefore, is compelled to rely upon it for the main source of professional income."

34. It would appear that antagonism has developed principally from economic rivalry and instincts of self-preservation and there is ample evidence that in pursuit of the main object medical organisations have frequently shown scarcely any regard to the public interest. The following quotation from the 1938-39 Annual Report of the Council of British Ophthalmologists requires no comment in this respect:

"The North London Association of Ophthalmic Opticians approached the Medical Officer of Health of Kensington with an offer to train opticians to act at first-aid posts, casualty clearing hospitals, etc., for A.R.P. work. The opticians will be in charge of the eye cases. Action by the British Medical Association resulted in the offer being refused. It is felt that if opticians are recognised as being capable of giving these services the fact will not be lost sight of by their organisations, should they agitate again for recognition by Parliament."

35. It is now submitted and strongly urged that the medical and optical professions should work in harmony within the general structure of the nation's health services. Both professions and the public could not fail to benefit from such a relationship.

(p) pp. 105-9.

(q) Cmd. 2099 (1927), p.5.

(r) Issue of January, 1942.

APPENDIX B.

Representative Selection of Research Papers, Text Books and Instrument Design by the Optical Profession and the Staffs of its Teaching Institutions.

RESEARCH PAPERS, TEXT BOOKS, ETC.

DATE	AUTHOR	TITLE	PUBLISHER
1912	L. Laurance	*Visual Optics and Sight Testing	School of Optics Ltd
1912	H. L. Taylor	The Ophthalmic Significance of Facial Asymmetry	Proc. Opt. Convention
1914	L. Laurance and H. O. Wood	*General and Practical Optics	School of Optics Ltd
1919	L. Laurance	The True Action of Lenses in Ametropia	Inst. Ophth. Opticians (Ettles Memorial Lecture)
1920	O. Aves	Hyperphoria—Its Estimation, Treatment and Correction	Refractionist
1921	H. H. Emsley and E. F. Fincham	Diffraction Halos in Normal and Glaucomatous Eyes	Trans. Optical Society
1924	W. Swaine	*Ophthalmic-Optical Manual	Hatton Press Ltd.
1925	W. H. A. Fincham	Vertex Power and its Measurement	Trans. Optical Society
1926	W. B. Barker	The Problem of the Anisometropes	Proc. Opt. Convention
1926	H. L. Taylor	*Bifocal Lenses	J. & H. Taylor Ltd
1927	G. W. Colebrook	Stereoscopic Vision	Dioptric Bulletin
1927	A. J. Preston	*Physiologic Chemistry for Refractionists	London Refraction Hospital
1928	P. Freeman-Lee	A New Theory and Method of Neutralising and Transposing Oblique Cross Cylinders	Dioptric Bulletin
1928	J. R. Hamblin and T. H. Winsor	Resolution of Gratings by the Astigmatic Eye	Trans. Optical Society
1928	H. H. Emsley and W. Swaine	*Ophthalmic Lenses	Hatton Press Ltd.
1929	J. C. Meadley	An Investigation into the Posture of the Eye	Dioptric Bulletin
1929	H. Lowery and N. Taylor	Retinal Fatigue and Sensitivity to Flicker	Proc. Opt. Convention
1930	N. Taylor and G. S. Evenden	Fundamental Colour Sensations and Chromatic Sensitivity	Dioptric Bulletin
1931	L. A. Swann	*Ocular Muscles	Hatton Press Ltd.
1932	J. Adamson	Cyclo-Rotational Power of the Eye	Refractionist

* Text Books.

RESEARCH PAPERS, TEXT BOOKS, ETC.

DATE	AUTHOR	TITLE	PUBLISHER
1932	K. Smith	Interpretation of Persistency Curves with respect to the Factor of Fatigue	Brit. Jnl. Physiological Optics
1933	A. E. Turville	The Value of Refraction in the Treatment of Migraine	Inst. Ophth. Opticians (Ettles Memorial Lecture)
1933	W. Green	Orthoptic Treatment of Concomitant Strabismus	Trans. Opt. Congress
1934	E. F. Fincham	Observations on the Dynamic Refraction of the Eye	Inst. Ophth. Opticians (Ettles Memorial Lecture)
1934	C. Richards	The Microscopic Structure of the Eye	Refractionist
1934	W. H. A. Fincham	*Optics	Hatton Press Ltd.
1935	E. F. Fincham	Study of Accommodation by Photography of the Living Lens and Ciliary Body	Trans. Ophthalmological Soc.
1935	D. B. Barker	Eye Dominance and its Association with Hand Dominance	Brit. Jnl. Physiological Optics
1936	H. H. Emsley	Problem of Unequal Ocular Images	Inst. Ophth. Opticians (Ettles Memorial Lecture)
1936	W. R. Coates	Visual Acuity and Test Letters	Inst. Ophth. Opticians
1936	H. H. Emsley	*Visual Optics	Hatton Press Ltd.
1937	E. F. Fincham	The Mechanism of Accommodation	Brit. Jnl. Ophthalmology
1937	A.W.S. Raxworthy	The Stereoscope in Diagnosis and Practice—a New Approach	Refractionist
1938	E. W. Jones	Microscopic Examination of Gold-filled Spectacle Frames	Brit. Jnl. Physiological Optics
1938	G. H. Giles	*Manual of Practical Orthoptics	Hatton Press Ltd.
1938	D. G. Mackenzie	Heliotropism and the Eye	Brit. Jnl. Physiological Optics
1939	J. Adamson and E. F. Fincham	The Effect of Lenses and Convergence upon the State of Accommodation of the Eye	Trans. Ophthalmological Soc.
1939	W. Swaine	The Sagittal and Tangential Errors of Ophthalmic Lenses	Refractionist
1939	L. A. Swann	*Objective Refraction	Raphaels Ltd.
1940	G. H. Giles	Modification of Standards of Colour Vision	Brit. Jnl. Physiological Optics
1940	H. B. Marton	Observations on Refractive Convergent Strabismus	Brit. Jnl. Physiological Optics
1941	C. D. Barrett	The Reflex and its Influence on Accuracy in Retinoscopy	Brit. Jnl. Physiological Optics
1942	F. E. Martin	The Measurement of Angle Alpha	Brit. Jnl. Physiological Optics
1943	G. H. Giles	*The Practice of Orthoptics	Hammond, Hammond & Co., Ltd.
		* Text Books.	

INSTRUMENTS

DATE	DESIGNER	INSTRUMENT
1920	J. H. Sutcliffe	Micro-Keratometer.
1924	E. F. Fincham	Corneal Microscope with combined slit-lamp.
1925	A. J. Esdaile	Myophoriagraph.
1926	O. Aves	Deviograph.
1927	A. E. Turville & D. S. Stewart	Ophthalmoscope with combined slit-lamp and retino- scope.
1929	A. W. S. Raxworthy	Phoriascope.
1929	E. F. Fincham	Stereo-fixation apparatus for use with Bjerrum Screen
1929	W. Green	Improvements to the Synoptophore and other Orth- optic Instruments.
1930	H. H. Emsley & E. F. Fincham	"Anumbra" ophthalmoscope.
1930	J. A. Linfield	Kerascope.
1932	H. Courlander	Direct fixation scotometer.
1932	J. Cole & R. H. Blackburn . .	Clinometer.
1932	J. Rosen	Foriagraph.
1932	W. Green	Diploscope.
1933	E. F. Fincham	Coincidence optometer.
1933	A. E. Turville	Stereo-cinematograph apparatus for orthoptic training
1933	J. E. Skewes	Myoscope.
1933	H. Freeman	Scotometer.
1933	A. E. Turville & J. Pascal . .	Dynascope
1933	J. Cole & L. A. Swann . . .	Comparator for near vision test.
1934	C. R. Crofton	Focal line retinoscope.
1934	A. J. Esdaile & A. E. Turville	Equilibrium balance test.
1934	D. B. Barker	Projection apparatus for measurement of pupillary distance.
1935	G. H. Giles	Colour perception unit, 1938--improved R.A.F. model
1935	W. B. Barker	Eikonometer.
1936	G. H. Giles	Near Point Rule with accessories.
1936	J. Rosen	Ophthalmo-retinoscope.
1937	G. D. Hunt & G. H. Giles .	Infinity far point test.
1938	C. D. Barrett	Subnormal vision testing apparatus and monocular attachment.
1938	A. E. Turville	Infinity balance test.
1938	G. Collins	Electronic refractionometer.
1943	E. W. Godding	Adaptometer. Apparatus for testing night vision

A German reader writes:

New OHS member Dr. Günter Ueberschaar of Jena, East Germany, wrote a brief note acknowledging receipt of the January issue of NOHS. He says (translated) "It pleased me very much, and I am most appreciative. I was especially pleased that our professional journal Augenoptik was reviewed so generously. Its editor of course deserves the great share of credit."

History sans documentation:

In a 50 page, 11 x 17 cm paperback booklet entitled INTRODUCTION TO OPHTHALMOSCOPY by G. E. Arrington, Jr., M.D., dated August 1964, but copyrighted 1966 by the Propper Manufacturing Company, Inc. and printed in Germany, appears the following chronology without any supplementary comment or detailing of references.

HISTORICAL CHRONOLOGY OF THE OPHTHALMOSCOPE:

- 1600 Johannes Kepler: Studied the optics of the eye.
- 1600 Christopher Scheiner: Studied the optical image on the retina through a scleral window.
- 1704 Jean Mery: Observed fundus of cats eyes under water. Believed that the water filled in "unevenesses" on the corneal surface.
- 1709 de la Hire: Correctly explained that the water eliminates the refraction of the cornea so that light emerging from a point on the fundus leaves the eye divergent, not parallel.
- 1796 Fermin: Noted luminosity in albino's eye.
- 1800 Thomas Young: Studied astigmatism and accommodation.
- 1816 Scarpa: Noted reflection from retina.
- 1817 Beer: Termed the disease producing this reflection "amaurotic cat's eye".
- 1823 Purkinje: Noted his observation of the "beautiful orange color of the pupil" when light cast from his concave spectacles entered a dog's eye and returned into his own.
- 1847 Babbage: Invented a plane mirror with a peep hole scraped in silver backing.
- 1851 Helmholtz: *Description of an Eye Mirror*, Berlin, 1851. The most precise description to that date of a means to study the interior of the eye. (This work was not published until 1854)
- 1851 Czermak: Invented orthoscope for viewing fundus under water.
- 1852 Ruete: Used a concave mirror with a clear portion in the center (indirect ophthalmoscopy) with a convex lens.
- 1852 Rekoss: Invented an instrument consisting of a plane mirror and lens in a variable frame.
- 1861 Giraud-Teulon: Introduced the demonstration ophthalmoscope and the binocular stereo ophthalmoscope.
- 1863 Heymann: Introduced auto-ophthalmoscopy.
- 1863 Liebreich: Invented ophthalmoscope with clip to hold correcting lenses for refracting.

- 1869 Loring: Invented the first practical ophthalmoscope designed for refraction for glasses.
- 1874 Loring: Invented refracting ophthalmoscope with hinged tilting mirror and Rekoss disks containing 23 lenses in one disk on 2 concentric circles, thus expanding the instrument's usefulness.
- 1883 Morton: Substituted a continuous chain holding the series of lenses. This is said to make the instrument fit the examiner's orbit better. Morton modified Couper's (1883) ophthalmoscope.
- 1884 Marple: Introduced a metal mirror with a U-shaped segment cut out of the top to eliminate the black shadow in the lower portion of the fundus.
- 1885 Dennett: Electrified the hand ophthalmoscope.
- 1886 Reid: Designed an electric ophthalmoscope with prismatic reflector and a micrometer scale.
- 1886 Juler: Devised an electric ophthalmoscope.
- 1899 Thorner: invented a reflexless ophthalmoscope.
- 1902 Ophthalmoscopic photography: Denimer 1902
Wolff 1903
Thorner 1909
- 1903 Wolff: Introduced the microophthalmoscope.
- 1910 Gullstrand: Perfected the large reflexless ophthalmoscope.
- 1912 Ohm: Invented ophthalmoscope for viewing both fundi at one time (binophthalmoscope).
- 1913 Crampton: Introduced the battery handle.
- 1915 Charles May: Substituted a total reflecting prism in the form of a rod with a condensing lens ground into the lower end over an electric bulb.
- 1928 Friedenwald: Introduced reflexless ophthalmoscope.
- 1959 Heine: Invented the bifocal ophthalmoscope for altering the focal distance of the ophthalmoscope to view the fundus (at infinity) and the surface and anterior portions of the eye (at near). Also introduced the hemi-spot to eliminate reflections.

Yellow but useful:

Research into low-pressure sodium gas discharge lamps started in the 1920s. The first commercial application was a road lighting installation that was put into service on a section of road in the south of The Netherlands on 1 July, 1932.

So starts an article on "Low-pressure sodium lighting--the past, present and future" by S.H.A. Begemann and W.J.M. van Bommel in the June 1983 issue of Lighting Design & Application, vol. 13, no. 6, pp. 25-33.

Not a kind of illumination to be used where color rendition is important, it nevertheless has a more than 50 year history of increasing use for a variety of other reasons with which this article deals in technological and pictorial detail.

Apotropaic tritanopia:

From Jerusalem via Mount Scopus, "we drive through Arab villages where flat-roofed houses are trimmed with blue to ward off the evil eye, past Bedouin camps, and within half an hour we had dropped 3,900 feet to the shimmering, pale green Dead Sea. An hourly bus service covers that route."

So wrote Pam Hobbs in the February 26 Globe and Mail of Toronto, Canada, excerpted in the May 1983 issue of World Press Review, page 63.

How or why blue wards off the evil eye is not explained in the article. However I was told by a young American rabbi who spent some months in Israel that the blue above the front door symbolizes heaven, which evil spirits are presumed to avoid, and that this tradition dates back centuries among both Arabs and Jews of the area.

Rainbow theory and the I.O.O.L.:

"Le mystère de l'arc-en-ciel" is the title of an article in French in the April 1983 issue of Der Schweizer Optiker/L'Opticien Suisse/L'Ottico svizzero, vol. 59, no. 4, pp. 51-55, about the historical attempts to explain the rainbow. Among the theorists were Aristotle, Descartes, Newton, Kepler, and very recently, Hans Pauly, who included the phenomenon within the domain of the atom.

Also in this issue is an article in German by F. Buser entitled "Die Gründung der IOL" (the founding of the International Optometric and Optical League) on pages 14-16, with special emphasis on the role played by Herr Ecker, the first Swiss delegate.

Early South African optometry:

The March 1983 issue of The South African Optometrist/Die Suid-Afrikaanse Oogkundige, vol. 42, no. 1, includes two items of history. One, on page 1 and 7, is a commentary entitled "Voice from the past" in which editor D.H. Reynolds reports having unearthed an advertisement by optician I.H. Noble (or J.H. Noble) in the February 28, 1862 issue of The Natal Mercury of Durban, South Africa. The advertisement showed Mr. Noble's first initial to be "I." in one part and "J." in another. It included the information that he had had 15 years experience with Dolland of London, and that he had received a shipment of merchandise by way of the barque "MARIETTA". He offered for sale, "Binocular (sic) Field or Night Glasses; Pocket Telescopes; Reconnoitring Telescopes, with Sling Laces; A 3.5 ft Telescope, with Table Stand and Rack and Pinion Motion; Microscope

and Objects; Hydrometers, Saccharometers, & Thermometers; A few choice Stereoscope Slides; Pocket Sun Dial for Natal; A large Assortment of Spectacles".

He also offered Neutral Tint Spectacles and Goggles "as recommended by the London Oculists". He further begged "to caution the public against using improper spectacles or purchasing spectacles from inexperienced persons."

In a subsequent advertisement, says Reynolds, Mr. Noble offered "pocket magnifiers for Botanical and Cutaneous purposes, sugar boiler thermometers, and double joint gold spectacles." He also included the fact that a recent rifle competition had been won by a Mr. Newling who was wearing his spectacles.

The other historical item in the same issue of the South African Optometrist is a detailed article entitled "The legal and educational history of Optometry in South Africa" by Selwyn Super on pages 21, 23, and 27-28, reprinted from the March 1974 issue. Included is the establishment of the South African Optometric Association, initially as the Optometric Association of the Transvaal, in 1924.

The Theunissen museum:

OHS member Irving Bennett, O.D., calls our attention to a museum item on page 53 of the February 1983 issue of Vedere Contact International, the International Journal of Contactology, vol. 7, no. 1, a bimonthly serial in four languages published in Milan, Italy. Described is the museum owned by Jan Theunissen on the floor above the Theunissen-Reyner optical firm at Rechtstratt 61, Eindhoven, Holland. The collection of a wide variety of items of optical interest, chiefly from the 18th and 19th centuries, includes some 10,000 spectacles.

A unique feature of the museum is that most of the exhibited items are for sale. Also, Mr. Theunissen, who speaks German, is most likely to show visitors around personally.

History of an optometry school:

Illinois College of Optometry traces its origins to three institutions. The earliest was the Chicago College of Ophthalmology and Otology in 1872. The second was the Needles Institute of Optometry in 1907 in Kansas City. The third was the Monroe College of Optometry in 1938 in Chicago. Following a series of name changes and mergers the present institution and title became effective in 1955.

A chronology of these and numerous other landmarks in its history appeared in the Spring 1983 issue of IMAGE, the ICO Alumni Newsletter, vol. 4, no. 2, page 3.

Soft lenses have a history too:

In response to a brief acknowledgement to Robert Morrison, O.D., I received the following comment from his Office Manager Peggy Drewett:

"I saw your nice note to my boss, and I thought I would take the liberty of writing.

"It often occurred to me that the history of optometry should include the unusual work that my boss did with the Czechs. I don't think that it's commonly known that in the early days of soft lenses in America every lens was made in our laboratory here in Harrisburg. This was before Dr. Morrison and National Patent sold the patent rights to Bausch and Lomb. There is lots of interesting history here, and I think it is good for optometry to have it properly acknowledged.

"If I can help further, please let me know."

Early ophthalmological papers:

On page 3 of the April-May 1983 issue of National Library of Medicine News the Library's History of Medicine Division reports two unusual acquisitions as follows:

"Dominique Anel's Suite de la nouvelle methode de guerir les fistules lacrimales Turin, 1714. This is a supplement to his original work on the subject, an ophthalmological classic acquired by the Library more than 100 years ago. Anel developed the first lacrymal syringe which influenced the development of other small syringes in the twentieth century."

"Another work of ophthalmological importance is an Arabic manuscript written by an Egyptian probably in the last half of the fourteenth century. An extensive analysis of the work was made in 1905, but apparently the text has never been published. It has been described as 'remarkable for its comprehensiveness and relative originality.'"

Librarian Carol Tullis thoughtfully called our attention to these.

Another spectacle collection:

Two complementary articles on spectacles appeared in the February 1983 issue of MD, vol. 27, no. 2, an elegantly composed monthly publication of MD Publications, Inc., New York. The one entitled

"The Perpetual Spectacle" is by Allen J. McGill on pages 275-277 & 280. The other, "The Pollacks' Spectacular Spectacle Collection" is by Jessica Klein on pages 281, 284, & 287.

Mentioned in the first article are contributions to optical history by Aristophanes, Pliny, Seneca, Nero, Alhazen, Bartisch (credited with the term "four-eyes"), Franklin, Harold Lloyd, P.G. Wodehouse, Dorothy Parker, and even the 1760 optician Benjamin Martin who is credited with saying "No further progress is possible. We've reached the peak of perfection."

The second article describes the hobby of cardiologist Albert Pollack, M.D., and his wife Ruth, who works in university and hospital administration. They started collecting spectacles in 1960. Their collection now includes more than 200 spectacles as well as antique optical testing equipment, glass eyes, opticians' signs, and posters and prints about eyeglass history.

Ignis fatuus:

In a sepia-colored paperback of 150 standard 6" x 9" (15 x 23 cm) pages, optician and history buff Harold S. Stewart tells 36 anecdotes in yarn-like style. The book is titled OPTICAL ANECDOTES and published in 1981 by the Society of Photo-Optical Instrumentation Engineers, 405 Fieldston Road, Bellingham, Washington 98225, USA. The anecdotes have such fascinating chapter titles as "The Greatest Authority on Optics in the Middle Ages," "A Seventeenth-Century Concept of Light," "The Napoleonic Influence," "Young and the Rosetta Stone," and "Brewster's Optical Toy," to mention a few. The numerous illustrations include Ibn al-Haitham's experiment with the camera obscura, a German etching of Galileo in prison in 1638, Newton's cottage, and Marcel Minnaert sketching some manifestations of light and color. The antics, idiosyncrasies, and legends, as well as the strengths, accomplishments, and contributions of perhaps two hundred or more persons whose names are familiar in optical history are woven into the anecdotes. Exemplary of the author's entertaining style is his review of the nature of light as understood in the 1780 edition of Encyclopedia Britannica, citing the observations of the "poor old woman" of Montpelier in 1641 that a cut of putrescent meat in her room at night emitted a (phosphorescent) light. Supplementing this anecdote is a cartoon depicting the phenomenon of ignis fatuus in a cemetery.

One more makes eleven:

Responding to an item in the January NOHS, Dean Frederick W. Hebbard of The Ohio State University has written as follows:

I wish to point out that Ethel Jean Babbitt, among the people listed as having something to do with the Dartmouth Eye Institute, is also an optometrist. I believe that she is a

Columbia graduate. She is a Fellow of the American Academy of Optometry, and lives at 852 Arlington Avenue, Berkeley, California 94707. I have not been in touch with her since I came to Ohio State more than 26 years ago, but, as far as I know, she did not practice optometry after coming to California in the early 1950's. I am not even sure whether she obtained a license in California, but I believe that she may have been a part-time clinical instructor at Berkeley for a brief period. In any event, Dr. Stoddard had at least visited the Dartmouth Eye Institute, and told me of Ethel Jean's former association with it. So I was not surprised to see her name when Ogle's book came out in the 1950's.

She was married, and I believe that her husband was a physicist at the U.C. Radiation Laboratory. He had a Ph.D., at least, and she was the mother of at least several children. However, she used to attend the quarterly or somewhat irregularly scheduled meetings of the Bay Area Chapter of the American Academy of Optometry, which were usually held at the School of Optometry Building at Berkeley.

Two slightly hazy phenomena:

In part two of his article on "The sesquicentenary of Wolfgang von Goethe" (actually Johann Wolfgang von Goethe) in the April 16, 1982, issue of The Optician, Vol. 183, no. 4736, pp. 23-24 & 26, OHS member Colin B. Fryer cited a passage from Goethe describing the so-called "Elizabeth Linnaeus phenomenon". Fryer reports the phenomenon to have been "discovered by the daughter of the famous botanist and subject of a whole series of learned treatises, which until then had been thought electrical in origin." In the cited passage Goethe describes strolling in the garden with a friend at dusk on June 19, 1779, and observing that immediately subsequent to fixating a brilliant flower, e.g., an oriental poppy, and upon fixating elsewhere, such as on the gravel walk, a momentary after-image of complementary color would be induced.

Mr. Fryer's source for some of this information was M. Minnaert's 1954 book entitled "Light and Colour in the Open Air," Bell & Co. Ltd., page 128.

The original German passage may be found on page 55, section 54, of "Goethes Farbenlehre," published by Im Insel-Verlag, Leipzig, 1937. It is also included in the classic translation entitled "Goethe's Theory of Colours" by Charles Lock Eastlake, London, John Murray, 1840, page 23. I have checked both the German and English versions and find no mention of Ms. Linnaeus by Goethe himself. Also Goethe's "with a friend" phrase in the original German is "mit einem Freunde," the masculine form, rather than "mit einer Freundin," the feminine form.

In Mr. Fryer's above-mentioned article he also described the "Verdun phenomenon" which Goethe is said to have discovered in 1792 near Verdun in northeastern France while talking to a squad of soldiers resting beside a fresh water pond. It seems that Goethe noticed that the fish in the pond exhibited a series of changing colors as they swam about, blue and violet towards the sun, red and yellow away from it. Mr. Fryer's source in this instance was W. Emmott in an article entitled "Goethe as a Physical Scientist" in the September 5, 1964, issue of The Ophthalmic Optician, Vol. 4, no. 17, pages 907-910. Unfortunately, author Emmott did not identify any of his several references as his source for this phenomenon.

Wishing to write reliable definitions for these two phenomena for the Dictionary of Visual Science I scanned the two above-mentioned Goethe books page after page for the terms "Linnaeus" and "Verdun" with no luck. I also searched the American edition book entitled "Goethe's Color Theory" arranged and edited by Rupprecht Matthaei and translated and further edited by Herb Aach, Van Nostrand Reinhold Co., New York 1971. All I gained from it was a genuine appreciation of a comment by Aach that some of Professor Matthaei's editing "is to compensate for Goethe's longwindedness"!

If I write any more on this I may well be accused of the same, but I cannot refrain from appealing for help from anyone who reads this. I hesitate to help perpetuate the existence of two namesake-identified phenomena whose origins and interpretations are so vague.

The devil was not an optometrist:

"Watch Out for the Devil's Work" is the title of a Sunday feature article by O.H.S. member Arol Augsburger, O.D., in the April 17 issue of The Columbus (Ohio) Dispatch. The "Devil's Work" in this instance refers to the early fears that anything like spectacles must surely be the work of the devil. Dr. Augsburger cites numerous other early superstitious fears and remedies for visual defects, but concludes that, "We know that the improvement in vision with today's complex spectacle lenses is far from being the devil's work. Indeed, it is merely the natural outgrowth of what Roger Bacon told us 700 years ago."

Lucille M. Babcock (1911-1983):

The above clipping was sent to us by Mrs. Joseph M. (Lucille) Babcock only a few weeks before her death on May 30. She was a long-time member of OHS and the contributor of the extensive organizational files of Joseph M. Babcock, O.D., to ILAMO. These files are the nucleus of the Babcock Archives of ILAMO.

A spectacle spectacular:

No less than four persons called my attention to the March 1983 issue of Smithsonian, Vol. 13, no. 12, in which appeared two historical articles involving spectacles. The first "Around the Mall and Beyond," by Edwards Park, pp. 28, 30, 32, & 34, related a "moment of theatricality" employed by General George Washington when he met with the discouraged officers of the Continental Army in March 1783. Washington had been almost desperately trying to quell a movement from within his army to take over the reins of government, which included even the suggestion that Washington become king--George I of America--to "start running a proper government with the power to tax." Washington feared the possibility of military dictatorship. In his talk to more than 600 officers he hammered at the ideal of separated military and civil powers, with little effect on his audience of war-toughened faces. Then:

"The general digs in a pocket to produce a letter from a member of Congress. This, he says, will indicate what they're trying to do down there in Philadelphia, and how hard it is to do it. He starts to read. He stumbles over a word or two, and then stops. The officers suddenly hold their breaths: What can be wrong with their old commander?

"Then Washington goes for another pocket and pulls out a pair of spectacles. He had them made recently in Philadelphia, and few people have seen them before. Now he puts them on, explaining quietly, 'Gentlemen, you must pardon me. I have grown gray in your service and now find myself growing blind.'

"He reads the letter, but he doesn't have too. For years, these officers have known their general and honored him as a sort of father figure, an iron man who never gave in to weakness, who held their impossible enterprise together against all odds, and finally won. Now, seeing him suddenly aged and mortal, they cannot keep the tears from welling; they cannot break old bonds of loyalty and affection.

"General Washington walks out, tucking his spectacles back in a waistcoat pocket. This moment of theatricality has turned the trick. His officers quickly repudiate the plan and express renewed faith in the shaky Congress."

The second article "What a spectacle! Eyeglasses, and how they evolved" by Dora Jane Hamblin, pp. 100-102, 104, 106-108, 110-111, and 188, is a delightfully readable and entertaining anecdotal account of incidents, persons, things, and attitudes associated with spectacles, their design, wear, and fashions. The numerous illustrations, most in full color, could well be cut and mounted as a collage for an optometrist's reception room.

The article offers no new information on spectacle history, but it does provide something of a kaleidoscopic review of centuries of development.

42 years of Auxiliary effort:

In April 1983 the Indiana Optometric Association acknowledged the often taken for granted organizational role of its members' spouses by honoring the Auxiliary to the Indiana Optometric Association, Inc. with the "OUTSTANDING SERVICE IN THE PUBLIC INTEREST" award. The documents in support of the nomination of course emphasized the public interest aspects of this organization of a very few hundred spouses, and among the documents was a chronology of its "Public Information Highlights." There is every reason to presume that this interesting history has its parallel in dozens of other organizations of optometrists' spouses, but it also seems likely that nowhere is such an example recorded in the public literature, if only to illustrate an easily overlooked phase of optometric history and its identification with the circumstances of the times. Here it is.

The Women's Auxiliary to the Indiana Optometric Association had its beginning on Sunday, January 5, 1941--during the 44th annual convention of the Indiana Optometric Association at the Severin Hotel, Indianapolis, Indiana.

1941 - Their first activity was a motorists' visual testing clinic in Indianapolis. Their first state wide project, in August, 1941, was a campaign to make parents realize the importance of an eye examination before children returned to school in the fall.

1942 - During "Save Your Vision Week" the Auxiliary sponsored a poster contest "Guard Your Eyes." It was open to high school students in Marion county. Prizes were three War Savings Stamps--\$15, \$10, and \$5. In August, their campaign was "Send Your Whole Child to School"--again publicly stressing the importance of a visual examination.

1943 - This year, the "Save Your Vision" poster contest included four cities, and nine high schools participated. Again, War Savings Stamps were the prizes.

1944-45 - The Auxiliary set up a gold scrap fund to be used for Optometry in Indiana.

1946 - Auxiliary state dues were raised from \$1 to \$2. The gold scrap fund was continued.

1948 - The Auxiliary set up a fund of \$300 to be used in establishing a Library in the anticipated School of Optometry at Indiana University. On March 11th, during "Save Your Vision Week," Mrs. Roy Denny and Dr. John O'Shea spoke to the nation on a 15 minute program given by Columbia Broadcasting System on "The Visually Handicapped Child."

1950-52 - The Auxiliary distributed the pamphlet "What is School Doing to Your Child's Eyesight."

1953 - Increased the Library fund for Indiana University to \$500.

1955 - Started the project to send used eyeglasses to the Philippines through a missionary there.

1956 - Auxiliary spent \$600 to furnish the clinic waiting room in Jordan Hall at the Indiana University School of Optometry. Sponsored a state-wide Highway Safety Program in Indiana.

1957 - Established a \$1,000 Emergency Loan Fund for students at the Optometry School.

1958 - \$200 scholarship for an Optometry student was established. National added \$50 to increase it to \$250. Distributed the pamphlet "Your Baby's Eyes." Donated a file cabinet to Indiana University.

1959 - The Auxiliary supported a research project in a diabetic camp.

1961 - Northeastern Society distributed the pamphlet "Do You Know These Facts About Vision and School Achievement."

1963 - Gave \$300 towards the purchase of a desk and chair in the Dean's office at Indiana University.

1967 - Annual Scholarship was increased from \$250 to \$300. The Auxiliary gave \$1,000 toward the furnishing of the new Indiana Optometric Association central office. The Auxiliary gave \$2,000 to help furnish the lounge at the School of Optometry.

1969 - The Auxiliary purchased its first film "Miracle of Vision" to be shown to schools, organizations, service clubs, etc.

1970 - Established an Eye-Education Poster Project. Posters were distributed throughout the state. Voted to start a film library, and a second film "Eyes on the Road" was purchased.

- 1971 - Scholarship was increased from \$300 to \$500. "Let's See" activity books were distributed to first and second graders throughout the state. Purchased the film "O.D. Vision Care Specialists." "Eye Opener" safety bookmarks were distributed.
- 1972 - Auxiliary members volunteered to help man the Indiana University Eye Mobile. "Seymour Safely" flyers and "Let's See" activity booklets were distributed throughout the state.
- 1973 - The theme this year was "Highway and Pedestrian Safety." Every third grader in the state received a folder and two inches of reflective tape pinned to "Halloween Tips for Trick or Treaters." This was timed for Education Week and Halloween. The Auxiliary made three TV appearances on children's TV programs and there was extensive newspaper coverage. "Bike Basics" and "I Didn't See" pamphlets were distributed. The film "Step Lightly" was purchased for our film library and was shown in local societies, schools, and service organizations.
- 1974 - \$500 was given towards new furnishings at the Indiana Optometric Association central office. This year the Auxiliary took on the "Seymour Safely" puppet show project. 144 puppet shows, which stressed "protect your eyes, take care of your vision," reaching approximately 4,000 children were given during the year throughout the state. There were TV appearances and newspaper publicity on the project. \$500 was given to help defray the cost of a postage meter for the central office.
- 1976-1977 - Seymour Safely was expanded to several different puppet shows and was continued in Indiana. 5,000 children saw the puppet show "Hush Puppies Bright Ideas." Farm Bureau women from 82 counties and Women Highway Safety Leaders saw both "Hush Puppies Bright Ideas" and "Seymour Safely's Bike Basics." Seymour Safely appeared on Cowboy Bob's Children's TV show as well as other TV and radio programs around the state. A booth was set up for Indiana State Teachers Institute with handouts to teachers for ordering Optometric Brochures for their classes and "Teachers Guide to Vision Problems". "Hush Puppies Bright Ideas" film was shown continuously. A booth was set up for the Children's Festival at Lafayette Square Shopping Center with Seymour Safely posters shown and bookmarks distributed. The Governor of Indiana signed a Proclamation for Save Your Vision Week as did the Mayor of Indianapolis and mayors of other cities.
- 1977-1978 - The Auxiliary funded the Emergency Contact Lens Removal project to a sum of \$2,000 and emergency posters reached all counties and at least one Emergency Medical Technicians unit in each county in Indiana. Subsequent training programs were held in several local locations for emergency medical technicians.

Through the county health nurses via the Indiana State Board of Health, Emergency Contact Lens Removal Posters were placed in over half of the schools in half of the counties in Indiana. 2,000 posters were placed in Indiana.

1978-1980 - Outreach to Older Americans was adopted as a state project. \$2,000 was initially spent for slides, literature, and presentations. The Auxiliary reached all 92 counties in Indiana through coordination with the Governor's Commission on Aging. Presentations were given at nutrition centers, senior citizens clubs, nursing homes, etc. We were invited to be participants at the Governor's Conference on Aging where we were able to reach 50 area agencies as well as participating senior citizens. Approximately 8,000 in all. The Outreach program was televised via WIPB in Muncie. Reached a potential viewing audience of 1/2 million people in east or central Indiana and west central Ohio. Jay County was the pilot project for 4-H Eye Care education in Indiana, and as a result of continued implementation, the Indiana 4-H council adopted Eye Care Education as a state project. The Auxiliary provided awards to champions at the county fair and awarded a \$175 stipend to send a 4-H person to a specialized Health Awareness Leadership Forum in Washington, D.C. The Auxiliary also helped apply for an Eye Care Education Grant which is given through the 4-H Council by the American Optometric Association. It was not received at this time, but Indiana continued to apply and in 1982, received a grant for \$1,200.

1981 - First year for the billboard project during Save Your Vision week. Limited to Marion County. 100 copies of the book "Arthur's Eyes" were sold to Optometrists for use in their office, schools, libraries, etc. Outreach to Older Americans was continued. OD's were invited to do glaucoma testing through the Salvation Army and the 82 State Fair booths.

1982 - The billboard project for Save Your Vision Week was expanded state wide. 83 billboards were posted at a cost of \$3,298.84. The scholarship was increased from \$500 to \$1,000. 7,000 Halloween Safety fliers were distributed to elementary students at a cost of \$75. 150 Drug Abuse posters were distributed to Junior High and High Schools at a cost of \$150. 5,000 In-Office Promotional Items have been sold to OD's for use in their office. Outreach to Older Americans, Seymour Safely, and 4-H Eye care are being continued at this time.

Few remember how dark it was:

Some of us older ones who may have visited Buffalo, New York, in our youth will recall the peripheral flicker of the electric lights powered by the hydroelectric generators of low frequency alternating current at Niagara Falls. Fewer can recall the ubiquitous prevalence of darkness before the advent of electric lights. A reminiscent paragraph by Herman B Wells (born June 7, 1902) in his autobiography, "Being Lucky," Indiana University Press, 1980, page 5, is a rare statement of this experience, as follows:

Niagara Falls was an especially strong magnet for honeymooners in 1901 because of the Pan-American Exposition in Buffalo. The feature of the exposition was millions of small, twinkling electric light bulbs illuminating the fairgrounds. Most of the visitors had not seen electric lights before, nor would they soon again see them used on such a scale. The memory of that occasion remained vivid in the minds of my parents throughout their lives. In her later years, when we would drive through the countryside at night and could see the electric floodlights in the barnyards of brightly lighted houses in between the glare of passing automobiles, my mother would frequently remark on how much lighter the world was then than it had been when she was young. In her youth the country roads had been pitch-black at night, the darkness broken only by an occasional feeble glow from a farmhouse or by the light of a swaying lantern on a buggy.

What is oral history?

From time to time the term "oral history" pops up in the NOHS and elsewhere without explanation. Oral history is not a case history recorded by a dentist, nor is it the oral reading of a history book. You will not find it in old dictionaries, nor in some new ones. If you do not happen to be active in a community with strong academic leanings you may well not be quite certain what the expression entails. Here then is an easy to read, plagiarized, and adapted paragraph which defines it briefly and precisely:

Oral history is a method of research which attempts to probe human memories and retrieve information not usually documented anywhere else. Relying on the informed interviewer and the tape recorder, oral history is more than an attempt at recording memories. The best oral history results from a combination of trained interviewers who have thoroughly researched the backgrounds of their subjects and respondents who are willing to peel back the layers of their own memories. The interview is ideally a shared project of historical research and conceptualization and human recollections about events personally experienced. During

the past decade, oral history has emerged as a useful method not only in traditional history subjects, but as a means of generating a unique historical perspective in fields such as business, medicine, sociology, and optometry.

H.W Hofstetter, Editor

CONSIDER

Whether you are an optician in Soochow, an ophthalmist in Irkutsk, a retiree on Pitcairn Island, or an optometrist in Huntsburg, Ohio, or even Middlefield, it is your privilege to join the Optometric Historical Society, for whatever reason. The phenomenal cost is five U.S. dollars per year, or free for the rest of your life if you amend your will to provide a one thousand dollar legacy to the Society.

If you are not already a member, give this a moment's thought.

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