

# HEALTH FRAUDS AND QUACKERY

---

HEARINGS  
BEFORE THE  
SUBCOMMITTEE ON FRAUDS AND MISREPRE-  
SENTATIONS AFFECTING THE ELDERLY  
OF THE  
SPECIAL COMMITTEE ON AGING  
UNITED STATES SENATE  
EIGHTY-EIGHTH CONGRESS  
SECOND SESSION

---

Part 4B.—Washington, D.C.  
(Eye Care)

---

APRIL 6, 1964

---

Printed for the use of the Special Committee on Aging



U.S. GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1964

31-1350

---

For sale by the Superintendent of Documents, U.S. Government Printing Office  
Washington, D.C., 20402 - Price 35 cents

## SPECIAL COMMITTEE ON AGING

GEORGE A. SMATHERS, Florida, *Chairman*

PAT McNAMARA, Michigan	EVERETT MCKINLEY DIRKSEN, Illinois
CLAIR ENGLE, California	BARRY GOLDWATER, Arizona
HARRISON A. WILLIAMS, Jr., New Jersey	FRANK CARLSON, Kansas
MAURINE B. NEUBERGER, Oregon	WINSTON L. PROUTY, Vermont
WAYNE MORSE, Oregon	KENNETH B. KEATING, New York
ALAN BIBLE, Nevada	HIRAM L. FONG, Hawaii
FRANK CHURCH, Idaho	E. L. MECHEM, New Mexico
JENNINGS RANDOLPH, West Virginia	
EDMUND S. MUSKIE, Maine	
EDWARD V. LONG, Missouri	
FRANK E. MOSS, Utah	
EDWARD M. KENNEDY, Massachusetts	
RALPH W. YARBOROUGH, Texas	

J. WILLIAM NORMAN, Jr., *Staff Director*

JOHN GUY MILLER, *Minority Staff Director*

---

## SUBCOMMITTEE ON FRAUDS AND MISREPRESENTATIONS AFFECTING THE ELDERLY

HARRISON A. WILLIAMS, Jr., New Jersey, *Chairman*

MAURINE B. NEUBERGER, Oregon	KENNETH B. KEATING, New York
WAYNE MORSE, Oregon	WINSTON L. PROUY, Vermont
FRANK CHURCH, Idaho	HIRAM L. FONG, Hawaii
EDMUND S. MUSKIE, Maine	E. L. MECHEM, New Mexico
EDWARD V. LONG, Missouri	
EDWARD M. KENNEDY, Massachusetts	
RALPH W. YARBOROUGH, Texas	

WILLIAM E. ORIOL, *Professional Staff Member*

GERALD P. NYE, *Minority Professional Staff Member*

NOTE.—Four hearings on health frauds and quackery were held and they are identified as follows:

Part 1. San Francisco, Calif., January 13, 1964.

Part 2. Washington, D.C., March 9, 1964.

Part 3. Washington, D.C., March 10, 1964.

Part 4A }

Part 4B } Washington, D.C., April 6, 1964. (Eye Care.)

# CONTENTS

## CHRONOLOGICAL LIST OF WITNESSES

William F. Callahan, director, Fraud and Mailability Investigations Division, Bureau of the Chief Postal Inspector.....	Page 413
Maurice G. Poster, chairman, Contact Lens Committee, New York City.....	415
John C. Neill, optometrist, American Optometric Association.....	423
William R. Baldwin, dean of the College of Optometry, Pacific University, Forest Grove, Oreg.....	471
E. C. Nurock, O. D., chairman, Advisory Law Committee, International Association of Boards of Examiners in Optometry.....	475
William P. MacCracken, Jr., counsel, American Optometric Association.....	482
Dr. N. J. Rogers, optometrist, Beaumont, Tex.....	490

## STATEMENTS

Ferree, John W., M.D., executive director, National Society for the Prevention of Blindness, Inc.....	515
Graham, Robert L., Jr., counselor at law, Pennsylvania Optical Co. memorandum.....	517
Guild of Prescription Opticians of America, Inc.....	522
Neill, Dr. John C., American Optometric Association.....	425
Nurock, E. C., O.D., chairman, Advisory Law Committee, International Association of Boards of Examiners in Optometry.....	475, 523
Soper, Joseph W., president, Contact Lens Society of America, Inc.....	516

## ADDITIONAL INFORMATION

Billups, Richard A., Jr., attorney, International Association of Boards of Examiners in Optometry, Inc., letter dated Mar. 30, 1964.....	479
Kendall, David N., Ph. D., director, Kendall Infrared Laboratories, letter dated Mar. 23, 1964, to Dr. M. G. Poster.....	418
<i>New Mexico</i> case, brief filed by American Optometric Association.....	486
Peckham, Robert H., Ph. D., exhibit B, re ready-to-wear glasses.....	520
Report on cases involving malpractice in the fitting of contact lenses.....	479
Rowe, Galen E., Jr., O.D., president, National Association of Optometrists & Opticians, Inc., letter dated Apr. 6, 1964.....	521
Scillieri, John, M.D., exhibit A concerning the definition of optometry.....	519
"Soaking Solutions Lessen Chance of Infection," article, Guild Guide, September 1963.....	417
Types of contact lenses in use today, with bibliography.....	430
"Wearing Contact Lenses Safely Is Up to You," article by Texas State Optical.....	499

## HEALTH FRAUDS AND QUACKERY

MONDAY, APRIL 6, 1964

U.S. SENATE,  
SUBCOMMITTEE ON FRAUDS AND  
MISREPRESENTATIONS AFFECTING THE ELDERLY  
OF THE SPECIAL COMMITTEE ON AGING,  
*Washington, D.C.*

The subcommittee reconvened at 2:15 p.m., in room 6202, New Senate Office Building, Senator Harrison A. Williams, Jr. (chairman of the subcommittee), presiding.

Present: Senators Williams, Neuberger, Yarborough, and Keating.

Also present: William E. Oriol, professional staff member; Gerald P. Nye, minority professional staff member; Patricia Slinkard, chief clerk; and Marion Keevers, minority chief clerk.

Senator WILLIAMS. Mr. William F. Callahan, do you want to say a few words at this point?

Mr. CALLAHAN. Yes.

Senator WILLIAMS. What is your title, Mr. Callahan?

**STATEMENT OF WILLIAM F. CALLAHAN, DIRECTOR, FRAUD AND  
MAILABILITY INVESTIGATIONS DIVISION, BUREAU OF THE  
CHIEF POSTAL INSPECTOR**

Mr. CALLAHAN. I am Director of the Fraud and Mailability Investigations Division in the Bureau of the Chief Postal Inspector.

Senator, the Chief Postal Inspector, Henry B. Montague, asked me to express his appreciation for your invitation to him to be represented here and also his regrets for his inability to appear at this time. Unfortunately, he is tied up on administrative matters to which he had prior commitments. He has been very much interested in the testimony concerning the mail-order glasses.

I would like to say that in past years the Postal Inspection Service has proceeded against mail-order glasses in many instances. Our jurisdiction, of course, depends upon showing a violation of 18 U.S.C. 1341, the criminal mail fraud statute, or 39 C. 4005, the administrative mail fraud statute.

A new element has been introduced in these mail-order eyeglasses which makes it extremely difficult to prove fraud and intent under the mail fraud statutes. I think that if I could borrow one of the exhibits which I saw on the board there I could show you just what I have in mind.

Senator WILLIAMS. Very good.

Mr. CALLAHAN. I might say also that we have proceeded against numerous books which purported to give a person the ability to see

without glasses, also against many vitamin and mineral products which purported to improve the eyesight, so we have not been at all inactive in this field, I can assure you.

Soon after the actions which I have mentioned took place, and I think to some extent as a result of these actions these people began to place the following notation in their literature:

The use of our eyeglass selector is limited to persons of approximately 40 years of age or over. Our glasses are not intended to replace the services of an oculist, eye physician, or optometrist but only for magnification. They are not intended for children or those who have astigmatism or other abnormalities of the eyes or for diseased eyes. In such cases we advise that an eye physician be consulted.

Now, in the cases which we prosecuted in prior years we were able to show through our test correspondence and through medical testimony that these people did accept money and did actually attempt to treat diseases such as astigmatism, glaucoma, myopia, and various other types of eye diseases.

You can see, however, with the decisions of the court today where they have protected themselves by limiting their services in the manner in which they have, which I understand does comply with the Federal Trade Practices Act. It makes it extremely difficult for us to show an intent which is requisite to our proceedings.

I might say also that we have not in recent years had any eyeglass cases brought to our attention. We would be happy to consider any of these. We have to see if they would come reasonably within the purview of the mail fraud law, but the advertising which we have seen in recent years has been so hedged that while they may in fact be violating the law it would be extremely difficult to show that there was no other reasonable explanation for their actions than an attempt to defraud, and that is what we are confronted with in our proof.

That about covers what I had to say about it, Senator.

Senator WILLIAMS. The effect here is they are asking people to diagnose their condition.

Mr. CALLAHAN. I think it is a very dangerous thing. It certainly encourages self-diagnosis and self-treatment.

I know in our investigations in years gone by it was shown conclusively that people allowed conditions to deteriorate while attempting to treat themselves.

Senator WILLIAMS. I realize that when you have to prove all the elements of fraud there are slippery words that can slide in and take them away from the penalties.

Mr. CALLAHAN. As an attorney, you can see what a defense counsel will do with this because in a test case to be responsive to this ad you would have to exclude all of the elements which normally would make up the fraud and this is the difficulty with which we are confronted.

If there are some that possibly for some reason were not within this category, we certainly would be happy to attempt to handle them.

Senator WILLIAMS. Well, this is not the forum to discuss specific ways we might deal with it, but we are glad to have your statement of interest, as well as your description of the hardship that faces you in these areas where there is certainly deception even if there are not all the elements of legal fraud.

Thank you, Mr. Callahan.

Mr. CALLAHAN. Thank you very much.

Senator WILLIAMS. All right.

Dr. CHAPMAN. Senator Williams, we are pleased to present to the committee a statement by Dr. Maurice Poster who is chairman of the A.O.A. Contact Lens Committee from New York City.

Dr. Poster will now give his statement to you.

**STATEMENT OF MAURICE G. POSTER, CHAIRMAN OF THE CONTACT LENS COMMITTEE, NEW YORK CITY**

Dr. POSTER. Thank you.

Senator, my name is Maurice G. Poster. I am a doctor of optometry and practice my profession at 71 Park Avenue, New York City, N.Y.

For the past 3 years I have served as chairman of the American Optometric Association's Committee on Contact Lenses.

I received my bachelor of arts degree from New York University, my professional education in optometry from Columbia University and the Pennsylvania State College of Optometry. From the latter institution, I received my doctorate in optometry.

For the past 7 years, in the capacity of department chairman, I have directed the Contact Lens Department of the Optometric Center of New York, a nonprofit, tax-exempt teaching clinic and research institution chartered by the Board of Regents of the University of the State of New York. In this institutional responsibility, I have been responsible for the clinical, postgraduate education and research efforts of the institution in the field of contact lenses.

I am also president of the New York Academy of Optometry, a fellow of the American Academy of Optometry and a diplomate in the Contact Lens Section of the American Academy of Optometry.

I am pleased to have the opportunity to appear before this body to offer testimony relating to contact lenses.

Recent newspaper, magazine, radio, and television scare stories have caused considerable alarm among the public regarding the wearing of contact lenses and this is a matter of deep concern to us. These scare stories were based on material which allegedly appeared in an unpublished report of Dr. William Stone made to the Food and Drug Administration in September 1963. After a 3-year study, Dr. Stone reportedly found 14 cases of blindness among contact lens users. Most of the news stories, unfortunately, failed to clarify the fact that most of the cases reported involved negligence on the part of the patient or improper fitting.

This reinforces the long-standing position of the American Optometric Association that unlicensed, untrained laymen should not be permitted to fit contact lenses or instruct patients in their use, handling, and hygiene. It is imperative that only well-trained, competent, licensed optometrists or qualified physicians prescribe and adapt contact lenses: All persons cannot wear contact lenses and it takes a well-trained eye specialist to know who should and should not wear them.

Furthermore, the fitting of a person for contact lenses is a complex, tedious situation, requiring from 5 to 20 visits to insure a proper fitting and return visits thereafter at least once a year.

Aside from the question of competence, a person who depends for his livelihood on the sale of merchandise is unlikely to have the time or inclination to give the patient the attention which is required to instruct and supervise the patient.

In all 50 States and the District of Columbia, only optometrists and physicians are licensed to prescribe contact lenses. In actual practice, however, unlicensed and untrained and unsupervised laymen are fitting contact lenses for a staggering number of patients. We think this constitutes a health hazard to the public.

The professional examination for contact lenses involves much more than that for spectacles. No two eyes are alike. Not only do eyes differ from person to person, but it is exceptionally rare when a person's own two eyes are alike. The differences may be measurable only in thousandth parts of an inch. Consequently, contact lenses must be made individually for each eye according to carefully worked-out details of a prescription of an optometrist or qualified physician.

Because the eye is such a delicate organ, the utmost care must be taken to insure that high quality lenses are prescribed and adapted by a licensed eye doctor, and that patients who wear contact lenses must be very careful in the handling and hygiene of their lenses.

The news stories also reported that some cases of blindness were believed to be attributable to methacrylic acid in the plastic of the lenses. This conclusion is not consistent with the collective experience of optometrists in prescribing contact lenses for millions of patients. For the information of this subcommittee, about 600,000 persons are fitted with contact lenses each year. It is estimated that from 5 to 6 million Americans now have contact lenses, about 1 out of every 23 persons with eyewear.) We have found no cases of blindness which can be directly attributed to the use of contact lenses.

Furthermore, we have had overwhelming evidence from respected authorities in plastic chemistry that the plastic used in contact lenses is safe beyond any reasonable doubt.

In fairness to the manufacturers, professional eye practitioners and wearers of plastic contact lenses, articles such as those referred to previously should not be released for publication unless a thorough investigation by qualified persons has been made of the results.

I have a letter written by Dr. George H. Butterfield, of Portland, Oreg., which is typical of the dozens of letters which we have received in the past few weeks. Dr. Butterfield says:

I have been in the plastic contact lens field as both manufacturer and fitter for 22 years. I have fitted thousands of contact lenses and our laboratory has supplied hundreds of thousands for the optometric and medical professions throughout the United States and many foreign countries. I have traveled extensively in the United States and Canada lecturing and teaching contact lens theory and fitting. I have never seen or heard of anyone being blinded or partially blinded from acid being drawn out of plastic contact lenses.

Similarly, Anthony Salvatori, president of Obrig Laboratories, one of the pioneers in the field of contact lenses, commented on the Stone report by pointing out that during the 25 years Obrig has produced and sold over 2 million plastic contact lenses to several thousand practitioners and not one of them has ever reported any damage to the eyes resulting from the plastic.

The Wesley-Jessen Organization, another manufacturer of contact lenses, reported recently that of the millions of lenses it has supplied to the profession, not a single one has been found to be chemically harmful to the patient wearing it.

As a matter of fact, even if the 14 cases referred to by Dr. Stone did result from the use of contact lens—and this, in our opinion,

has not been substantiated—this small number among the more than 5 million users indicates an extremely high degree of success in the contact lens field.

I would like to add the following quote from an article:

In the July 1963 issue of the American Journal of Ophthalmology, however, appears a study by Jerome W. Bettman, Jr. of the Department of Microbiology and Surgery of the Cornell Medical College. In part, Mr. Bettman's work was financed by a grant from the National Council To Combat Blindness. His report suggests strongly that there is less infection in the eyes of persons who use soaking solutions for their contact lenses than there is in the eyes of those who use tap water or who store their lenses in a dry state. Indeed, the "soakers" have a lower incidence of bacterial environment than was found among a control group that did not use contact lenses at all.

I would like to make this article a part of the record.

Senator WILLIAMS. That may be done.

(The article referred to follows:)

[From the Gull & Gulde, September 1963]

#### · SOAKING SOLUTIONS LESSEN CHANCE OF INFECTION ·

An article by Dr. H. F. Allen of Boston in the Archives of Ophthalmology last year has provoked a further study of the overnight storage of contact lenses. Dr. Allen had suggested that "Soaking solutions carry a hazard to health that should be understood by all ophthalmologists \* \* \*. They may be inactivated by contact with rubber or fabric and become contaminated with organisms \* \* \*. Assuming that grease and abrasives can be avoided, it appears sufficient, on taking out the lenses at night, to rinse them with sterile water, dry them with a soft tissue, and place them in a small, clean, dry container overnight. The following morning they can be inserted without further sanitization or wetting."

In the July 1963 issue of the American Journal of Ophthalmology, however, appears a study by Jerome W. Bettman, Jr., of the Department of Microbiology and Surgery of the Cornell Medical College. In part, Mr. Bettman's work was financed by a grant from the National Council To Combat Blindness. His report suggests strongly that there is less infection in the eyes of persons who use soaking solutions for their contact lenses than there is in the eyes of those who use tap water or who store their lenses in a dry state. Indeed, the "soakers" have a lower incidence of bacterial environment than was found among a control group that did not use contact lenses at all.

Cultures taken from the corners of the eyes of persons using soaking solutions were 82 percent sterile; cultures similarly taken from those who used dry storage were 42 percent sterile while the experience with those who used plain tap water showed only 13 percent sterile. Interestingly enough, among the controls, the persons who did not use contact lenses, the incidence of sterility was 52 percent.

The bacteriologist, however, was most disturbed by what he found in the storage cases; he found one example of contamination with *Pseudomonas aeruginosa* in the case of a patient who did not use soaking solution, one example in the case of a patient who did use soaking solution and two examples in the cases of patients who used plain water. This organism is known to be able to destroy vision in a 24-hour period.

The comparison is, nevertheless, more striking when the storage cases were examined for the presence of staphylococci; this is the organism known to cause sties. Twelve of the "dry" cases were so contaminated, two of the cases of the users of soaking solution were contaminated with the organism but no staphylococci were found in the cases where plain water was used.

Dr. POSTER. However, because we believe that even one case of blindness is one too many, the Committee on Contact Lenses of the American Optometric Association—in spite of the overwhelming evidence already available which we feel warrants complete confidence in plastic contact lenses—retained the services of Dr. David Kendall, an eminent research chemist to conduct a new and impartial study of the methacrylic acid content of plastic contact lenses. I am submitting



herewith a copy of Dr. David Kendall's report as it was presented to me 8 days ago.

Senator WILLIAMS. That will be made a part of the record.  
(The report referred to follows:)

KENDALL INFRARED LABORATORIES,  
New York, N.Y., March 23, 1964.

Re telephoned request of Dr. A. Haffner on March 20, 1964. Samples received March 20 and March 22, 1964. Report No. 4357.

Dr. M. G. POSTER,  
New York, N.Y.

DEAR DR. POSTER: Following is report No. 4357 done at the telephoned requests of Dr. A. Haffner of March 20, 1964, and your telephoned request of March 21, 1964, covering investigational work on contact lenses made of poly-(methyl-methacrylate)—(PMM), received in person from Dr. R. J. Houston on March 20, 1964, and by mail from Dr. W. Policoff on March 22, 1964:

Subject: Contact lenses made from PMM, methacrylic acid content of.

Object: To assess and to determine, to the extent possible without quantitative standards, the methacrylic acid content of contact lenses made from PMM; to determine from study of the literature the likelihood that PMM used in the preparation of contact lenses contains methacrylic acid or polymethacrylic acid; to assess the likelihood that any acid present could be released from the contact lenses by any fluids present in or introduced into the eye, assuming any methacrylic acid or polymethacrylic acid is present.

Investigation method employed: Qualitative infrared spectroscopy; search and study of the literature; and conclusions from personal experience with homopolymers, polymers, copolymers, and terpolymers of PMM and other natural and synthetic polymers.

Description of samples: Submitted in person by Dr. R. J. Houston on March 20, 1964, were the following:

About 16 specimens of contact lenses of varying radii of curvature of the posterior ocular surface, varying diopters, and varying center thicknesses.

Received from Dr. W. Policoff on March 22, 1964, were eight samples of contact lenses with thicknesses as follows: two, 0.1 mm. thick; two, 0.2 mm.; two 0.5 mm.; and two 1.0 mm.

These latter specimens were made by Dr. W. Policoff using cast sheets of Rhom and Haas Plexiglas, military, ultraviolet absorptive grade.

#### Results

1. The PMM contact lenses made from cast rods and sheets show no evidence upon infrared examination of being any different chemically than other PMM samples previously examined by the writer.

2. PMM is well known to be very resistant to dilute alkalis and dilute acids. It is thus extremely unlikely that any mild alkali or any mild acid would produce any breakdown of PMM to polymethacrylic acid or methacrylic acid.

3. No one can determine the percentage of methacrylic acid present in a contact lens of PMM without preparing standard samples having known percentages by weight of methyl methacrylate monomer and methacrylic acid. For any quantitative analysis, one must have known quantitative standards. For accuracy, one must have a minimum of three standards and preferably more.

4. Any methacrylic acid monomer used or formed in the production of PMM would have to exist as lone molecules or extremely low molecular weight molecules trapped within the interstices of the PMM chains. Since PMM is a linear atactic thermoplastic, lacks stereoregularity, and has bulky side groups, it is amorphous and the assumed methacrylic acid monomer or extremely low molecular weight polymer would be trapped within the polymer network and would be extremely unavailable to the fluids present in or introduced into the human eye. Since these are mildly alkaline or neutral, they would have no significant effect on PMM.

5. PMM is well known to be resistant to alkaline saponification. Thus there is no significant likelihood that any of the PMM present in a contact lens can be changed into polymethacrylic acid or methacrylic acid monomer by the action of the mildly alkaline eye fluid of a normal human individual or the neutral surfactant often used in insertion of a contact lense.

### Conclusions

The content of methacrylic acid present in the PMM of a contact lens is extremely minute and, even if present, is chemically unavailable to harm the human eye.

### Recommendation

Quantitative standards suitable for analytical work should be prepared by both Rohm & Haas and Du Pont. Each supplier of contact lens raw material should make up some PMM, starting with MM monomer, or low molecular weight MM sirup, to which has been added known percentages of known purity methacrylic acid monomer. We suggest the following: One sample containing 0.001 percent by weight methacrylic acid, another 0.005 percent by weight, and a third 0.01 percent by weight. Both Rohm & Haas and Du Pont should each make up a set of these three standards. With standards at hand, we can then set up a quantitative method for determining the percentage of methacrylic acid in contact lenses. This can be done by quantitative infrared microtechniques. Until such is done, no one knows the percentage by weight, if any, of methacrylic acid in PMM.

It is up to your committee to decide whether this further accurate quantitative work is warranted.

### Details

An uncut blank prepared from a cast rod of Rohm & Haas No. 44-A Paraplex prepared with catalyst and accelerator, received March 20, 1964, from Dr. Houston, was placed in an adaptor and scanned versus air in the rock salt infrared. The scan was only from 2 to 4 microns, since the absorbance was infinite at 2.5 microns. The sample was too thick. Contact lens sample 816-625 was placed in the adaptor and scanned from 2 to 15 microns in the rock salt infrared versus air. Owing to the thickness of the contact lens, the sample was completely absorbing near 3.5 microns, from 5.65 to 6 microns, from 6.15 to 9.5 microns, from 10 to 11 microns, and from 11.6 to 12.2 and 13 to 13.5 microns. Reasonable transmittance was observed between 2 and 3.3 and between 3.55 and 5.6 microns. However, the strongest absorption in PMM is the ester carbonyl absorption at 5.77 microns, which was totally absorbing. In addition, the acid carbonyl absorption, the very strong band in methacrylic acid and in PM acid would be seen at 5.90 microns. This region, also, was completely absorbing.

Since it was evident that the samples supplied by Dr. R. J. Houston were too thick, he was requested to obtain contact lenses having a thickness of about 0.05 millimeter, or as thin as possible.

Dr. W. Policoff supplied me, on March 22, 1964, with two specimens each of contact lenses having thicknesses of 0.1, 0.2, 0.5, and 1.0 millimeter. Dr. Policoff reported that the 0.1-millimeter thickness contact lens was the smallest he could make from cast sheet, Rohm & Haas Plexiglass, military ultraviolet absorptive grade. Dr. Policoff reported he prepared the cast sheets from a monomer-polymer methyl methacrylate sirup.

One of the 0.1-millimeter contact lenses was scanned in the rock salt infrared from 2 to 15 microns versus air, the lens being held in the adaptor so that it would be at the beam focus of the infrared spectrophotometer. While the resulting spectrum was more satisfactory than that from contact lens 816-625, the material was still totally absorbing in several regions and most particularly from 5.70 to 5.95 microns, exactly the carbonyl regions of the PMM and methacrylic acid and polymethacrylic acid in which we are most interested.

Thus, in order to do accurate quantitative determination of the methacrylic acid or polymethacrylic acid content of the PMM used in making contact lenses, it will be necessary to have special films prepared of 0.05-millimeter thickness. We suggest that the principal suppliers; namely, Du Pont and Rohm & Haas, should be willing to prepare such samples. We would recommend that each supplier of PMM supply three known standards: one would contain 0.001 percent by weight, the second 0.005 percent by weight, and the third containing 0.01 percent by weight methacrylic acid monomer. The remainder of the material would be, of course, principally PMM or monomer-polymer sirup of known quantitative composition. These three standards should be prepared to have a film thickness of 0.05 millimeter and any deviation from this should be in the direction of thinness. With such standards at hand, an accurate quantitative method can be set up for determining methacrylic acid. Infrared could do this adequately using microtechniques. There are perhaps other quantitative analytical methods

which could be used, but it seems to the writer that IR microtechniques would be best, considering all factors.

We therefore suggest that any further work be held in abeyance until such standards are supplied. It is, of course, up to you as to whether this additional accurate quantitative work is warranted.

Intensive literature study and comparison of the contact lens infrared spectra against spectra of samples of PMM run over the last 10 years were made. Study was made of the chemistry of the processes for producing PMM and of the chemical effect of various substances on PMM.

A separate billing is enclosed. It is a pleasure to be of service.

Very truly yours,

DAVID N. KENDALL, Ph. D.,  
*Director.*

Dr. POSTER. Briefly, the conclusion of the Kendall report is that the—

content of methacrylic acid present in the PMM (polymethyl-methacrylate) of a contact lens is extremely minute and, even if present, is chemically unavailable to harm the human eye.

Recent extraction tests were also conducted by E. I. du Pont de Nemours & Co. Forty contact lenses, which together weighed 1.2310 grams, were placed in 100 milliliters of distilled water. The closed jar containing them (together with a similar control jar containing no lenses) was kept at 100° F. for 2 days followed by 3 days' standing at room temperature. The water was titrated potentiometrically using 0.001 nitrogen sodium hydroxide. It was not possible to detect any acidity in either the test or control.

The method used would have been able to detect 10 parts per million of methacrylic acid if this had been present.

It is apparent, Mr. Chairman, that not a scintilla of evidence has shown any substantiation of the charge of methacrylic acid damage to the eye from contact lenses.

The American Optometric Association, as well as the profession generally, accepts its awesome responsibility to the public in establishing and adhering to the highest standards possible in the eye care field. We have a continuing program of insisting that manufacturers improve their standards as new discoveries of materials and techniques are made. I might say at this point that better plastics for contact lenses are continually being developed. A constant program of surveillance and research, in which the optometric profession is proud to play a leadership role, is conducted to insure progress in the field of contact lenses.

We have met with officials of the Food and Drug Administration and have offered our complete cooperation in this and all other matters. We are also sponsoring a joint meeting of the AOA Contact Lens Committee, FDA officials, and contact lens manufacturers.

The following are minimum standards for acceptance of contact lens material used by members of the American Optometric Association:

1. Each lens container must be labeled as to—
  - (a) Material used to determine inertness to ocular tissue;
  - (b) Ingredients that go into the makeup of the finished product;
  - (c) Lab lots to be established and identified.
2. Lenses should be labeled "Caution, must be used as directed by optometrist or physician."
3. All lenses packaged free of impurities.

4. There must be a statement as to the place of manufacture and the type of lens manufactured (whether molded, pressed, cast rod, et cetera). The manufacturer's name and address to be listed.

5. All lenses must be properly inspected and meet the following tolerances:

(a) Base curve: within plus or minus 0.12 diopter, or plus or minus 0.02 millimeter.

(b) Power: within plus or minus 0.12 diopter; no unwanted cylinder and no more than 0.25 prism diopter of unwanted prism.

(c) overall diameter: within plus or minus 0.05 millimeter.

(d) Optical zone: within plus or minus 0.05 millimeter.

(e) Width of bevel: Within plus or minus 0.05 millimeter.

(f) Thickness: Within plus or minus 0.02 millimeter.

(g) Edge finish: Shaped as specified and highly polished; plastics free of strain, stress, contamination, or any other contaminating products.

(h) Surfaces: Shall be smooth, well polished, with no flaws.

6. The method in which contact lenses are to be shipped and the vehicle to be used must be known to the professional consumer and meet acceptable standards.

Standards of purity for physiologically inert methyl methacrylate should be required of all manufacturers of plastic used in contact lenses. We recommend the use of cleaning and polishing agents and solvents suitable for contact lens manufacture which leave no harmful residue on the plastic. We insist also that manufacturers cure their plastic completely before distributing them and maintain the tightest possible quality control and inspection procedures.

Optometrists have for many years adhered to a set of minimum standards in prescribing and fitting contact lenses for our patients:

1. The lens must be capable of being worn comfortably by the patient during most of his waking day without danger.

2. The patient must be able to see as clearly as optically possible with the lens in place and the optics of the lens must remain stable.

3. The lens must not fall out of the eye, or become displaced under any circumstances.

4. The lens must be capable of any optical correction deemed necessary, including prisms and cylinders, and of being accurately centered.

5. The lens must be so designed that it can, with reasonable ease, be altered to the optics and haptics by the fitter.

6. It must be of the "fluidless" type, yet completely clear the cornea.

7. The lens must be large enough to be easily handled and sturdy enough to provide protection to the eye in the case of accident.

8. The lens must be capable of being fitted by an orderly, organized, sensible procedure based on accurate measurements, and means of making these measurements must be available.

9. Wearing of the lens must not bring on hazing or veiling.

10. The lens and its wearing qualities must be consistent.

These "minimum standards" are possible to attain, not so much with a lens, as by the knowledge and skill of the optometrist or ophthalmologist.

We have also established standards for our patients:

1. Never wear a cracked or damaged lens.

2. Remove the contact lens and reinsert it if it is uncomfortable. If it continues to be irritable consult your practitioner.

3. Always readapt your eyes gradually to your lenses when you have gone without them for more than a day or two.

4. Keep an up-to-date pair of spectacles handy for emergency use.

5. Avoid rubbing your eyes while wearing contact lenses.

6. For comfort and to safeguard vision, visit your optometrist or ophthalmologist at least once each year for a routine examination.

7. Always wash your hands before inserting your lenses.

8. Never moisten your lenses with saliva.

9. Upon removal, lenses should be rinsed, cleaned and placed in the container recommended by your vision specialist.

10. They should never be wiped with any material which might scratch them.

11. Lenses should be removed, cleansed, and reinserted when the patient experiences sudden discomfort, haziness, or fogginess or increased awareness resulting in stinging, burning, feeling of roughness, etc.

12. Wearing time should be consistent from day to day, but the eye can best maintain its normal healthy state if left uncovered for at least part of each day.

13. In cases of doubt, call your optometrist or ophthalmologist.

The contact lens, no matter how carefully and correctly it is fitted, is a new substance irritating to the eye.

Any device that is worn next to the body that does not irritate the tissue adapts itself sensationwise. Examples are our lack of awareness of dentures, clothing, jewelry, and properly fitted contact lenses. When first worn, our conscious mind is continually reminded of them but gradually our alertness to them fades away into our subconscious. Consequently, the patient adapts to this device just as one adapts to wear dentures and other prosthetic devices.

The vision specialist must make frequent inspections of the lenses and the patient's eyes to insure that everything is satisfactory. One or more adaptations, or even complete changes in the lenses, may be necessary before comfort is achieved.

In summary, the Contact Lens Committee of the American Optometric Association has reviewed thoroughly approximately 30 years of optometric experience in fitting and observing plastic contact lenses made of methyl methacrylate and the committee is unanimous in asserting that it has found absolutely no evidence to support the claims recently made that methacrylic acid results in blindness.

The experience of optometrists with more than 5 million contact lens patients indicates conclusively that, although irritation of the eyes may result from poor hygienic conditions or wearing the lenses for abnormally long periods of time, it is not a result of any chemistry involved in the manufacture of the plastic contact lens.

Mr. Chairman, again, let me say that we are very grateful for the privilege of appearing before this subcommittee and I want to assure you of our desire to cooperate with you in every way possible.

Thank you.

Senator WILLIAMS. Thank you, Dr. Poster.

Are all contact lenses made of plastic?

Dr. POSTER. I would say practically all contact lenses are. There are some places in the world other than the United States where there are a few lenses of glass as a possible substitute.

Senator WILLIAMS. How long has the experience been in contact lenses? They came on the scene within our time; did they not?

Dr. POSTER. If I could refer this to Dr. Neill who is a pioneer and one of the first men in the United States in the field, I am sure you could get an answer.

Dr. Neill.

Dr. NEILL. Mr. Chairman, if it meets your approval, I can give it to you in my formal presentation.

Senator WILLIAMS. I don't want to duplicate anything.

Why don't you proceed?

#### STATEMENT OF JOHN C. NEILL, ON BEHALF OF THE AMERICAN OPTOMETRIC ASSOCIATION

Dr. NEILL. Senator Williams, my name is John C. Neill.

I have been a practicing optometrist in Philadelphia for 40 years. I also serve as professor of contact lens practice at the Pennsylvania State College of Optometry.

There is a prevalent notion among laymen that contact lenses are a new invention, but actually the first known report on a contact lens was made in 1508 by Leonardo da Vinci. Over the intervening centuries there has been very little progress up until our present century.

Now, in my formal presentation here, I have a lot of this historical background but in order to expedite matters I would like to skip over most of it and come to the meat of what I want to say.

Senator WILLIAMS. All right.

Dr. NEILL. The forerunners of today's modern contact lenses were the all-glass scleral lenses introduced by the Carl Zeiss Optical Co., of Jena, Germany, about 1929. My interest in these lenses first came about in 1931 through the visit of a patient who suffered from the condition known as conical cornea. Conical cornea is not amenable to correction with ordinary spectacles but can be corrected perfectly with contact lenses.

In order to help this patient, it was necessary for me to purchase a fitting set of the Zeiss lenses and to delve into the intricacies of contact lens fitting of that day. It was only after many sessions in my office and the addition of many more fitting lenses to my original set that I was eventually able to fit my patient satisfactorily.

I might say that my office and home in Philadelphia are together. My children were quite young at that time and they frequently went through the waiting room in going into the home and they got to know my patient so well they called him Uncle Malcolm. He made over 200 visits at that time to be fitted with this first pair of contact lenses. This patient has worn his lenses ever since 1932, although he was refitted with lighter weight plastic lenses in 1947. Only a few months ago I had occasion to see this patient again and found that he is still enjoying good vision through his lenses at the age of 69 years.

Since fitting my original patient with contact lenses, I have continued to specialize in contact lens practice and have devoted considerable time to study and research in this field. Over the years, I have fitted all of the different types of contact lenses in existence.

In 1953, three optometrists, Wilhelm Soehnges, of Munich, Germany; Frank Dickinson, of St. Annes, England, and I introduced the microlens. This lens has completely revolutionized the fitting and wearing of contact lenses. Now nearly all people who have a need for glasses to see clearly at a distance can be fitted with contact lenses and can expect to wear them comfortably all day long. I, personally, have successfully fitted many thousands of these lenses in my office and in the clinics of the Pennsylvania State College of Optometry. I might say that I know of no cases of blindness which resulted from the wearing of contact lenses.

In 1935, as a member of the faculty of the Pennsylvania State College of Optometry, I introduced the first formal undergraduate course in contact lens practice. This course, considerably amplified today, is an integral part of the optometric curriculum of all colleges of optometry. The course in contact lens practice embraces didactic, laboratory, and clinical sessions. It is given during the third and fourth years of the professional curriculum in optometry. Prior to taking this course, the student must have completed courses in anatomy, physiology, chemistry, pathology, and microbiology. Only a person so trained is qualified to fit contact lenses.

Following graduation, but prior to being allowed to practice, the optometrist will take the examinations of the National Board of Optometry and individual State board examinations. Included in these examinations are questions concerning contact lens practice. Only after successful completion of these examinations will the applicant be granted a license to practice optometry.

Because the gift of sight is so precious to every human being, we believe that the fitting of contact lenses should not be permitted by unlicensed, untrained laymen.

Contact lenses which have been properly fitted by trained profession practitioners and are worn and cared for according to his instructions, can be worn safely without harm to the eye throughout the waking day. Properly fitted contact lenses sometimes actually guard the eye, as they offer it a mechanical cover for protection from flying particles.

Every year, many persons wearing spectacles suffer permanent injury or loss of sight from slivers of glass flying with force from a broken spectacle lens. A person who wears contact lenses is free from this danger.

Modern contact lenses are fabricated from polymethyl methacrylate, a plastic material which is clearer than glass and transmits more light. It also weighs only 40 percent as much as glass. When properly polymerized, it is pure and chemically inert. Rarely is anyone allergic to this material. Among the many thousands of persons I have seen wearing these lenses over the years, I have found but two persons who appeared truly allergic to polymethyl methacrylate.

I have seen cases where the cornea has been scratched or otherwise abraded as a result of contact lenses. Usually the cause of such a scratch or abrasion has been found to be careless handling of a lens by the patient or the wearing of a poorly fitted lens. As a rule, such scratches and abrasions will heal uneventfully within 12 to 48 hours.

An optometrist with his thorough knowledge and training in contact lens practice will indoctrinate his patient thoroughly in the care of contact lenses and in the proper procedure for their insertion and

removal so that such accidents are unlikely to occur. Also, the optometrist's patients are instructed to report immediately, day or night, in the case of any irritation.

Dr. William Stone was recently reported to have made a survey by means of a questionnaire sent to a large number of ophthalmologists to determine the number of cases where vision has been reduced or lost by persons wearing contact lenses. It would be interesting to compare Dr. Stone's figures for 14 contact lens wearers who lost vision with the figures of the National Safety Council on the number of persons, not wearing contact lenses, who annually lose their sight as the result of infection following cuts, foreign particles, and other such everyday injuries of the eye.

Today, in my private practice, about one out of every three people who consult me with regard to obtaining contact lenses already have such lenses, but they are unable to wear them satisfactorily. In most instances, these lenses were fitted by untrained laymen or by advertising "quickie" outfits.

Morgan R. Raiford, M.D., writing in *International Ophthalmology Clinics* of September 1961, says:

In the final analysis, a successful contact lens patient is the result of an attentive and careful refractionist. This applies as much to the followup investigations as to the initial examination. The refractionist must master the fundamentals of all phases of contact lens management. Its scope, clinical indication, and complications should never be left to less than expert hands.

Thank you, Senator, for affording me the privilege of being here. I will be happy to answer any questions.

(Text continues on p. 464.)

PREPARED STATEMENT OF DR. JOHN C. NEILL ON BEHALF OF THE AMERICAN OPTOMETRIC ASSOCIATION

My name is John C. Neill. I have been a practicing optometrist for many years in Philadelphia, Pa. I also serve as professor of contact lens practice at the Pennsylvania State College of Optometry.

I appreciate the opportunity to appear before this committee today. We have with us today some material which illustrates the history of contact lenses.

There is a prevalent notion among laymen that contact lenses are a new invention, but actually the first known report on a contact lens was made in 1508 by Leonardo da Vinci. He sketched and described elementary forms of contact lenses and conducted extensive studies in vision and optics and described in detail a number of devices whereby refractive power of the cornea could be neutralized and a new and more regular refracting surface substituted for it. Some of his devices were small and quite simple and suggested the principle upon which modern contact lenses are based. In 1636 Rene Descartes illustrated the principle of a contact lens as "a way of perfecting vision" and he was the first one to suggest placing a lens on the cornea. He applied to the eye, a tube full of water, on the end of which was ground a segment of glass shaped like the cornea. Had Descartes shortened his tube so that only a capillary film of water lay between the cornea and the glass end, thus eliminating the tube, he would have had a glass corneal contact lens. It is surprising that Descartes used the water tube so long. If the water layer were a thin film, such as a tear film, it would have been a typical contact lens. About 300 years after the contact lens, crudely devised by Descartes, it became possible for plastic to be used as a practical means of correcting faulty vision.

In 1827 Sir John F. W. Herschel, an eminent British astronomer and physicist, in discussing the problem of correcting the vision of a person possessing an irregular cornea, suggested the adaption of a lens to the eye "of nearly the same refractive power as the cornea." He proposed that a lens should be adapted to the eye and recommended that the inner surface be a facsimile of the irregular cornea while the outside should have the same general curve of the cornea. In



exceptionally bad cases he suggested that some substance such as a transparent animal jelly be placed between the lens and the eye.

Another famous British physicist, Sir Thomas Young, who is noted for his work on the astigmatism of the eye, is believed to have used a form of contact lens to eliminate the astigmatism of his own eye.

In 1887 F. A. Muller, of Weisbaden, a manufacturer of artificial eyes, is credited with producing the first "contact lens" to be worn successfully for any length of time, but it really was not a lens because it had no refractive power. In effect, it was a glass shell fitted over an eye whose lid had been surgically removed because of malignancy. The patient reportedly wore the lens in comfort until his death 21 years later.

In 1888, A. E. Fick, a Zurich professor, and E. Kalt, a Frenchman, presented papers describing their experiments with glass corneal contact lenses on animals and on themselves for short periods of time. Fick called his device a "tiny glass bowl." It floated on the cornea without touching the sclera, similar to the corneal lenses in use today. Kalt's first lenses were made from segments cut from the bottom of test tubes. Unlike Muller, Kalt, and Fick were actually trying to improve sight.

Most of the lenses I have described so far were of the type which rested on the cornea. They were made of glass and were very heavy. They were held in place on the cornea by capillary adhesion. Undoubtedly the principal difficulties which made these lenses impractical were their thickness and weight.

About 1909 Muller, of Weisbaden, produced a contact lens in the form of a blown shell. The lens had a clear central corneal portion and a translucent outer portion which was milky in color and similar in appearance to the sclera. These lenses were designed so as to have the scleral peripheral rim of the lens rest on the patient's sclera while the clear central portion spanned the patient's cornea without touching it. Before being placed on the eye, these lenses were fitted with a salt solution which served optically to neutralize the cornea of the eye. The outside surface of the central portion of the contact lens then served as the wearer's cornea. Since this lens was produced by the art of glass blowing, it lacked optical regularity and frequently did not give good vision. A large number of Muller's blown lenses were sent to the Zeiss Co., of Jena, with the idea of having the corneal portion ground so as to give the lenses better optics. All of the lenses were broken during the grinding process. Despite the disadvantages, many people were fitted with Muller blown type contact lenses during the 1920's and 1930's.

The forerunners of today's modern contact lenses were the all glass scleral lenses introduced by the Carl Zeiss Optical Co., of Jena, Germany, about 1929. My interest in these lenses first came about in 1931 through the visit of a patient who suffered from the condition known as conical cornea. Conical cornea is not amenable to correction with ordinary spectacles but can be corrected perfectly with contact lenses.

In order to help this patient, it was necessary for me to purchase a fitting set of the Zeiss lenses and to delve into the intricacies of contact lens fitting of that day. It was only after many sessions in my office and the addition of many more fitting lenses to my original set that I was eventually able to fit my patient satisfactorily. This patient has worn his lenses ever since 1932, although he was refitted with lighter weight plastic lenses in 1947. Only a few months ago I had occasion to see this patient again and found that he is still enjoying good vision through his lenses at the age of 69 years.

Since fitting my original patient with contact lenses, I have continued to specialize in contact lens practice and have devoted considerable time to study and research in this field. Over the years I have fitted all of the different types of contact lenses in existence. In 1953, three optometrists, Wilhelm Soehnges, of Munich, Germany, Frank Dickinson, of St. Annes, England, and I introduced the microlens. This lens has completely revolutionized the fitting and wearing of contact lenses. Now nearly all people who have a need for glasses to see clearly at a distance can be fitted with contact lenses and can expect to wear them comfortably all day long. I personally have successfully fitted many thousands of these lenses in my office and in the clinics of the Pennsylvania State College of Optometry since their introduction. I might say that I know of no cases of blindness which resulted from the wearing of contact lenses.

In 1935, as a member of the faculty of the Pennsylvania State College of Optometry, I introduced the first formal undergraduate course in contact lens practice. This course, considerably amplified today, is an integral part of the optometric curriculum of all colleges of optometry. The course in contact lens practice embraces didactic, laboratory, and clinical sessions. It is given during the third and fourth years of the professional curriculum in optometry. Prior to taking this course, the student must have completed courses in anatomy, physiology, chemistry, pathology, and bacteriology. Only a person so trained is qualified to fit contact lenses.

Following graduation, but prior to being allowed to practice, the optometrist will take the examinations of the National Board of Optometry and individual State board examinations. Included in these examinations are questions concerning contact lens practice. Only after successful completion of these examinations will the applicant be granted a license to practice optometry.

Because the gift of sight is so precious to every human being, we believe that the fitting of contact lenses should not be permitted by unlicensed, untrained laymen.

Contact lenses which have been properly fitted by trained professional practitioners and are worn and cared for according to his instructions, can be worn safely without harm to the eye throughout the waking day. Properly fitted contact lenses sometimes actually guard the eye, as they offer it a mechanical cover for protection from flying particles.

Every year many persons wearing spectacles suffer permanent injury or loss of sight from slivers of glass flying with force from a broken spectacle lens. A person who wears contact lenses is free from this danger.

Modern contact lenses are fabricated from polymethyl-methacrylate, a plastic material which is clearer than glass and transmits more light. It also weighs only 40 percent as much as glass. When properly polymerized, it is pure and chemically inert. Rarely is anyone allergic to this material. Among the many thousands of persons I have seen wearing these lenses over the years, I have found but two persons who appeared truly allergic to polymethyl-methacrylate.

I have seen cases where the cornea has been scratched or otherwise abraded as a result of contact lenses. Usually the cause of such a scratch or abrasion has been found to be careless handling of a lens by the patient or the wearing of a poorly fitted lens. As a rule, such scratches and abrasions will heal uneventfully within 12 to 48 hours. The only danger here is from infection. Because of this danger a person suffering from such an injury should be immediately treated by a physician. An optometrist with his thorough knowledge and training in contact lens practice will indoctrinate his patient thoroughly in the care of contact lenses and in the proper procedure for their insertion and removal so that such accidents are unlikely to occur. Also, the optometrist's patients are instructed to report immediately day or night in the case of any irritation.

Improvements in the evolution of today's contact lenses has been such that 96 percent of patients who need an ophthalmic correction for constant wear can be fitted satisfactorily with contact lenses. Although cosmetic considerations are often the motivation behind the patient's desire for contact lenses, there are often sounder reasons for prescribing them. While such conditions as keratoconus, irregular astigmatism, corneal scarring, aniridia, and monocular aphakia represent only a small portion of the total number of people needing an ophthalmic correction, the use of contact lenses in these conditions often affords a dramatic improvement in vision not possible with ordinary spectacles.

It is estimated that about 8 percent of the wearers of contact lenses are over 40 years of age. Probably the most important reason why more older patients do not wear contact lenses is the falling off of the cosmetic incentive as one grows older. Undoubtedly, another important reason for the smaller percentage of patients over 40 years of age using contact lenses is the unwillingness, or even the inability of the older patient to put up with the inconveniences involved in adapting oneself to contact lenses. A failure to appreciate fully the optical and physical advantages of contact lenses is a factor, and another deterrent is the fact that older people are presbyopic and, therefore, must use a convex spherical lens in addition to their distance lenses whenever they desire to read or see clearly at near. At least five types of bifocal contact lenses are offered today by the manufacturers.

The present situation in the field of bifocal contact lenses still makes it necessary for the contact lens practitioner to advise his older patients that, if they desire the advantages of contact lenses, they will still have to use spectacles as an adjunct to their contact lenses for reading.

As the great mass of younger contact lens wearers of the present day reach the age of presbyopia, we can expect that they will more or less willingly accept spectacles as an adjunct to their contact lenses for near work. This will be the situation unless a satisfactory bifocal contact lens is perfected before that time.

The cataracts most frequently encountered are those of the senile type. Therefore, it follows that most aphakic patients are over 45 years of age. Such patients can be greatly benefited by contact lenses since such lenses are generally superior to spectacle corrections for aphakia. This is so for a number of reasons. All high-plus spectacle lenses, even those of the so-called corrected curve type, display increasingly annoying aberrations as the line of sight passes from the optical center to the periphery of the lens. All of the aberrations inherent in spectacle lenses are practically eliminated by contact lenses because the eye does not move behind the lens. The lens moves with the eye. From an appearance viewpoint, contact lenses are vastly superior to the heavy, thick, convex spectacle lenses required by the aphakic patient since the eyes and eyelids do not appear magnified by the contact lenses.

The older patient who wears a bilateral aphakic spectacle correction is thus presented with a very difficult problem—that of relearning to judge distances. The wearing of contact lenses for the correction of bilateral aphakia poses little or no problem to the patient of relearning to judge distances because such lenses cause only slight changes in retinal image size.

Aphakic spectacle corrections must necessarily be thick and heavy, causing great discomfort to the nose and ears of the older patients, particularly in warm weather. Contact lenses on the other hand are light in weight and usually quite comfortable to the patient after he has become used to them. As a rule, the older aphakic patient adapts himself to contact lenses more readily than some of the younger aphakic patients.

Contact lenses have been used as the ocular of a telescopic system for correcting subnormal vision. The value of contact lenses in visuotherapy is dramatically illustrated in cases of anisometropia and antimetropia, vision disabilities which, before the advent of contact lenses, were beyond the scope of even the most skilled practitioner since spectacles could not offer the quality of retinal image equalization necessary for the successful application of training procedures. Other practical reasons for older persons wearing contact lenses are set forth in the material we are making available to the subcommittee, and especially in the book, "Vision of the Aging Patient" in which I was privileged to write the section on contact lenses.

In addition to the cosmetic and pathologic reasons for wearing contact lenses, there are other valid reasons for wearing them. They don't steam up and they give a 15 percent wider field of vision than spectacles. Drivers who wear contact lenses can see more of the road than those who wear spectacles. The occupational performance of many persons is enhanced by wearing contact lenses. Besides actors, musicians, models, and athletes, the advantages to whom are obvious, policemen, seamen, and other outdoor workers find contact lenses more satisfactory because they do not steam up in cold weather and, unlike spectacles, they do not streak even in a pelting rain or snowstorm. Because contact lenses are unaffected by condensation and perspiration and stay in place better than spectacles, many surgeons find them of significant benefit. In addition, some persons with special eye conditions receive unique corrective value from contact lenses. In cases of extreme nearsightedness, these tiny lenses often provide better vision than thick spectacles. When the cornea is cone shaped and protrudes abnormally, contact lenses often bring dramatic improvement. In many cases, persons declared legally blind often receives sufficient vision from contact lenses to enable them to function normally.

Generally speaking, older patients display less dexterity in inserting and removing contact lenses than do younger patients. More patience and time is required in teaching older patients to handle the small microcontact lenses. It has been my experience that the dexterity of the average patient in the handling of contact lenses decreases markedly with age, but every effort should be made to encourage the older patient to keep practicing the insertion and removal techniques until he has mastered them.

To be successful in providing contact lenses for his older patients, the eye specialist must exercise great care in selecting the patients whom he will fit. Not everyone can wear contact lenses. Only a careful eye examination can determine this. For a large number of people contact lenses are the only means by which optimal sight improvement can be brought about. In some cases they restore sight without surgery, where otherwise corneal transplants would be needed. As more and more people are fitted with contact lenses, more older people will come to understand them better and will accept them. Then, too, the present younger contact lens wearers will, in time, enter the older age group and increase today's low 8 percent figure of contact lens wearers over 40.

Dr. William Stone was recently reported to have made a survey by means of a questionnaire sent to a large number of ophthalmologists to determine the number of cases where vision has been reduced or lost by persons wearing contact lenses. It would be interesting to compare Dr. Stone's figures for 14 contact lens wearers who lost vision with the figures of the National Safety Council on the number of persons, not wearing contact lenses, who annually lose their sight as the result of infection following cuts, foreign particles, and other such everyday injuries of the eye.

There are cases on record where a spectacle frame has contributed to the development of cancer of the skin of the nose. There are also numerous cases on record where an ill-fitted denture has been cited as a contributing factor to the development of cancer of the mouth. In introducing any substance into the body the person assumes some risks but compared with the benefit derived this is infinitesimally insignificant. This risk is made negligible when the device meets acceptable standards, is intelligently prescribed by a properly trained and licensed professional, and the individual using the device after thorough instruction in its use, exercises care and good judgment.

Today, in my private practice, about one out of ever three people who consult me with regard to obtaining contact lenses already have such lenses, but they are unable to wear them satisfactorily. In most instances these lenses were fitted by untrained laymen or by advertising "quickie" outfits.

It is my opinion that only optometrists and ophthalmologists should be permitted to fit contact lenses and then only when they have been properly qualified by graduate courses in contact lens practice.

Morgan B. Raiford, M.D., writing in *International Ophthalmology Clinics* of September 1961, says: "In the final analysis, a successful contact lens patient is the result of an attentive and careful refractionist. This applies as much to the followup investigations as to the initial examination. The refractionist must master the fundamentals of all phases of contact lens management. Its scope, clinical indications and complications should never be left to less than expert."

Thank you, Mr. Chairman, for affording me the privilege of appearing before this subcommittee.

## TYPES OF CONTACT LENSES IN USE TODAY

Contact lenses may be broadly grouped into two categories:

1. Scleral (Haptic) lenses: those which span the cornea and have their bearing area on the sclera.
2. Corneal lenses: those which are positioned solely on the cornea. The former are discussed first since there are only a few basic types while the latter comprises a multitude of variations.

Previous to 1943, all of the contact lenses available were of the fluid-scleral type (i.e. lenses which were filled with a buffer solution before insertion into the eye). For some patients these lenses were highly successful but for the majority, wearing time was poor due to the appearance of Sattler's Veil of Fick's Phenomenon. This symptom was manifested as misty vision and colored halos around lights because of corneal edema. The lack of the buffer solutions to correctly stimulate the natural tears and/or the inability to keep new fluid circulating under the lens was thought to be the main cause. In spite of this limitation, the lenses were in wide production. Among the available types were the following:

1. Zeiss - a two curve crown glass lens. Overall diameter was 20 mm; Corneal diameter - 12 mm; Scleral radius - 11-13 mm; Corneal radius - 6-9 mm; thickness - .5 - 1.0 mm. This was the first practical contact lens. (1920)
2. Feinbloom - several different lenses (glass and plastic)
  - a. One of the first trial sets with toroidal shells.
  - b. Tangent Cone Lens - Variables included the cone angle, scleral radii, corneal size, and overall diameter. A temporal flange was incorporated in this lens.
  - c. ABC Lens - an improved cone principle lens.
3. Muller-Welt - blown glass lenses
4. Kollmorgen - molded glass lenses
5. Obrig - molded plastic lenses

Although other manufacturers had lenses available, the above were the most widely used.

The more modern fluidless scleral lens evolved during the 1940's when it was discovered that less veiling appeared as a bubble was introduced into a fluid scleral lens. Norman Bier advanced the transcurve

principle of fitting which advocated a minimum clearance of the cornea, a scleral bearing surface, and perilimbal clearance. Natural flow of tears provided the fluid and this circulation was enhanced by the use of small holes or vents in the lens. The basic construction of the lens consists of a corneal radius, a scleral radius, and a transition zone (the point at which the two curves meet). The diameters average 13 mm for the optic (corneal) zone, 2 mm for the transition zone, and 23 mm for the overall diameter. The corneal zone is decentered nasally so that the temporal flange is wider than the nasal flange. Fitting is achieved by either of two methods: 1. Molding - taking an impression of the patient's eye and fabricating a lens from this mold. 2. Trial lenses - using shells of known radii for both corneal and scleral zones and through the use of fluorescein and ultraviolet light, watching the pattern until an optimum fit is reached. The lens is then ordered from these observations. By either method, when the final lens is received, mechanical adjustments on the practitioner's part are necessary for a satisfactory fit. This lens (and its variations) is in wide use and production today, mostly in Europe and England. Obrig and Muller-Welt are two of the largest manufacturers in the U.S.

Variations in scleral lenses are changes in either the front or back surfaces. The latter involves the use of toric corneal and/or scleral curves to fit patients who have amounts of corneal astigmatism and/or aspherical sclerae which prevent the achievement of minimum clearance by the use of spherical curves. Most modifications take place on the front surface of the corneal zone and include:

1. Cylindrical Correction - used in cases of residual astigmatism. The desired cylinder is ground in plus cylinder form into the optics of the lens.
2. Prismatic Correction - used in cases of binocular imbalance. Prism is ground into optics of the lens and carefully blended.
3. Cosmetic Changes - used to hide disfiguring scars of the cornea and sclera or to achieve special theatrical effects. They may vary from only a colored tint in the entire lens to completely masking the patient's sclera and cornea. In this latter case, a new iris and sclera is painted on the outside surface and laminated under a sheet of plastic.

Venting affects both surfaces and involves the use of small holes in the lens usually in the area of the transition zone.

All of the above refinements enjoy wide useage today.

Special types of scleral lenses include the following:

1. Wide Angle - This lens is similar to standard types except for the transition zone. Instead of a blended area where the corneal and scleral curves meet, the Wide Angle lens utilizes an internal flat transition whose sides, if extended form a cone. Variables include the cone angle, optic radius, scleral radius, and the lens size. Constants are the optic zone width (11.5 mm) and the limbal zone (16 mm). Development of this lens is attributed to George Nissel (1946) and more recently to Solon M. Braff. It is extensively used in England.
2. Underwater - a modified wide angle lens designed specifically for skindivers. It consists of the regular lens plus a plastic buildup on the outer surface to form an air space and miniature plano "face plate." Undistorted underwater vision and wider field of view are the result due to elimination of the diver's mask. This lens is in very limited production and will be available to a few practitioners in 1964.
3. Forknall Offset - More of a fitting technique than a special lens. Basically it is a lens with an eccentric transition zone designed to maintain uniform corneal clearance during ocular rotations.
4. Bifocals
  - A. Williamson-Noble - a monocentric system with the near prescription centered in the distance segment. This lens is in very limited use due to the problem of pupil constriction and resultant loss of distance vision.
  - B. Feinbloom - a bicentric system with the near segments inferior to the optical center of the distance portion. This lens was to be available in bi, tri, and multifocal form but was never in wide production. It was patented in 1936 and was a fluid lens.
5. Telescopic - A fluid type scleral lens so designed as to form a Galilean system. It consists of a central biconcave ocular on the inner surface, an air space, and a positive objective on the outer surface. This lens was patented in 1940 by Feinbloom but was not used successfully due to thickness and other problems.
6. Para-scleral lens - a preformed plastic scleral lens having two raised areas called "islands" on the posterior surface of the

scleral section of the lens. In moderate use. Now out of production.

7. Types Where Vision Is Not The Chief Concern

A. Diagnostic

- (1) Gonioscope Lenses - used in conjunction with a microscope or slit lamp to examine the anterior chamber of the eye particularly the angle.
  - (a) Goldmann Type - uses the mirror principle
  - (b) Koepe Type - a short focal length plus lens
  - (c) Troncoso - also a short focal length plus lens
  - (d) Allen-Thorpe Gonioprism - a prism in which the apex has been curved to fit against the cornea in gonioscopy.
- (2) Deep Vitreous - high plus lens used with a slit lamp to examine the vitreous fluid in the posterior chamber of the eye.
- (3) X-ray localizing lenses

B. Treatment Lenses

- (1) Therapeutic - medicine is placed in concavity of lens and is held against the cornea.
- (2) Ptosis - lens used to support the upper lid.
- (3) Protective - lens used to protect the cornea against entropion, trichiasis, trachoma, and other conditions where danger exists.

An intermediate type of lens which should be mentioned is the Semi-Scleral-Corneal-Flange Lens that has been developed by Herbert L. Moss and William Feinbloom. It is basically a corneal lens with a superior scleral flange designed so that both surfaces are tangent to the cornea and the sclera in the area of the superior limbus. Theoretically this arrangement gives a more stable lens in which front surface cylinder, prism, and bifocals may be incorporated. This lens was described as early as 1959 but presently is mainly an experimental lens.

As a preface to the corneal contact lens section of this paper it should be stated that because of the multitude of lenses in use today, each type will be described as briefly as possible. Little mention will be made of method of fitting. Controversy will be avoided by not discussing the merits or demerits of the lenses. Furthermore, the contact lens field is moving so rapidly that new types may be announced before this paper can be published.



I. Monocurve Lenses

- A. Wohlk = an experimental corneal lens in the 1940's and 50's  
 Overall diameter = 8-10 mm  
 Center thickness = .20 mm  
 Fitted 1.5 to 2.5 diopters flatter than "K" & thus central  
 Wearing and peripheral clearance  
 No longer in use and never in wide production
- B. Microlens = Attributed to Neill, Dickinson and Soehnges in 1954  
 Overall diameter = 9-10 mm  
 Center thickness = .20 mm  
 Fitted 3 to 5 diopters flatter than "K" and thus central  
 Wearing and peripheral clearance  
 Was in wide production but seldom used today.

II. Monocurve Lenses With Bevel=single curved lenses with a bevel of standard radius.

- A. Sphercon = Manufactured by the Plastic Contact Lens Co.  
 Overall diameter = 8.2 - 9.5 mm  
 Center thickness = .20 mm  
 Bevel radius = 12.25 mm  
 Bevel width = 0.4 mm  
 Fitted on K or steeper than K and thus minimum central  
 and distinct peripheral clearance.  
 In wide production and still in use today.

III. Bicurve Lenses = those in which both curves are variable

- A. Tuohy = First patented corneal contact lens (1950)  
 Overall diameter = 11-12 mm  
 Optic zone width = 8-9 mm  
 Secondary Curve width = 1.5 mm  
 Center thickness = .25 to .35 mm  
 Base curve fitted 1.5D flatter than K and secondary  
 curve 0.9 to 1.2 mm flatter than K to give central  
 touch and peripheral clearance.  
 Was in wide production but no longer in use today.
- B. Concentra=Obrig Laboratories  
 Overall diameter = 9.0 - 9.5 mm  
 Optic zone width = 8.5 mm (avg.)  
 Secondary Curve Width = 0.3 mm (avg.)  
 Center thickness = .20 mm (avg.)  
 Base curve fitted on K and secondary curve fitted 1 to  
 4 mm flatter than K to give minimal central clearance

and distinct peripheral clearance.

In wide use and production.

C. Moas Contour = Overall diameter = 9.7 mm

D. Bier Contour Optic zone width = 6.5 - 7.5 mm

Secondary curve width = 1.35 mm

Center thickness = 0.20 mm

Base curve fitted on K; secondary curve 0.4 to 0.7 mm

flatter than K to give minimal central clearance

and distinct peripheral clearance.

In wide use and production.

E. Morrison Bicurve - Overall diameter = 9 - 10.5 mm

O. A. width = 6.5 - 8.0

Secondary curve width = 1.35 mm

Center thickness = 0.14 to 0.48

Base curve fitted on K to  $\frac{1}{2}$  D flatter

Secondary 1.0 to 1.7 mm flatter than K

Gives minimal central clearance with distinct

peripheral clearance.

In moderate use and production.

F. Bier Bicurve - Overall diameter = 9.7

(apical clearance) Optic zone = 6.5

Secondary curve width = 1.60 mm

Center thickness = 0.15 to 0.50

Base curve fitted 0.25 to 0.50 diopters steeper than K

Secondary 0.7 to 0.9 flatter than K

Apical clearance, touch in inter area, peripheral clearance

In wide use and production

#### IV. Tricurve Lenses (Bicurve and Bevel)

A. Tricurve Overall diameter = 2.3 mm plus corneal radius

Optic zone width = 7.0 mm

Secondary Curve width = depends on Overall Diameter

Center thickness = 0.5 to 0.50

Width of bevel = 0.5 mm

Base curve = on K

Secondary = 0.50 flatter than K and bevel = fixed at

12.25 mm to give minimal central clearance and

definite peripheral clearance.

In limited use and production

- B. Haynes Tricurve Overall diameter = 9.5 to 10.5  
 C. Tricon(Muller-Welt) Optic zone width = 7 to 8  
 D. Conforma Secondary curve width = depends on Overall  
 Bevel width = 0.4 to 0.6 mm  
 Center thickness = 0.15 to 0.50  
 Base Curve = on K to 0.50 flatter, Secondary =  
 0.7 to 1.5 mm flatter, Bevel = 11 to 12.5 mm  
 to give minimal central clearance and definite  
 peripheral clearance.  
 In wide use and production

#### V. Multicurve Lenses

##### A. Tricurve Lens and Bevel

Developed by Zekman and Krimmer for keratoconus patients.  
 Consists of an optic zone radius of 7.00  
 Secondary radius of 7.37  
 Tertiary radius of 7.75  
 Small bevel  
 Used in case of moderate keratoconus  
 Limited usage

##### B. Universal Multicurve Lens

Zekman and Krimmer  
 Central optic zone and three or more peripheral  
 curves and bevel  
 Example: 6.50 - 7.00 - 7.50 - 8.00 - 8.50 - 9.00  
 and 1.20 mm wide bevel at edge  
 Use in extreme keratoconus  
 Limited usage

##### C. Para-Curve Lens

Overall diameter - variable but no larger than iris  
 diameter -  $\frac{1}{2}$  mm  
 Optic zone width = 7 to 8 mm  
 Multicurved with aspherical peripheral zone  
 Center thickness = 0.15 to 0.5  
 Base curve on K to give minimal central clearance  
 with definite peripheral clearance  
 Moderate usage

## D. Para Thin Micro Corneal Lens

Overall diameter = 10 to 10.5 mm

Optic zone = 7 to 8 mm

Spherical optical zone with parabolic peripheral area

Center thickness = .15 to .5

Base curve on K to give minimal central clearance  
with definite peripheral clearance

Moderate Usage

## VI. Aperture Lenses = small lenses designed to fit between the aperture of the open lids

A. Bayshore - bicurve with bevel

Overall diameter = 7 to 8.8 mm (.2 mm smaller than vertical aperture with lids relaxed)

Optic zone diameter = 5.8 to 6.7 mm

Secondary width = .8 to .9 mm

Bevel = .1 to .3 mm 17 mm radius

Edge thickness = .15 to .25 mm

Base curve fitted to achieve .3 mm clearance or approximately  $1\frac{1}{2}D$  over K.

Secondary fitted to align the intermediate area of the cornea.

Result is apical clearance, peripheral bearing and bevel clearance.

Used by the designer in all types of patients

In moderate use and production.

B. Ewell - bicurve with bevel

Overall diameter = 7.5 to 8.5 mm

Optic zone diameter = 7.0 to 7.2

Secondary = parabolic

Bevel = .1 mm width 16 mm radius

Center thickness = 0.12 to 0.13 mm

Fitted on a central alignment principle or a minimal central clearance.

In wide use and production.

## C. Morrison "Minilens" = single curve with bevel

Overall diameter = 6.9 to 8.9 mm

Optic zone = .6 mm less than overall

Bevel = .3 mm width and made with four different radii tools.

Center thickness = varies with overall diameter, the smaller the diameter, the thinner the lens.

Fitted parallel to the flattest meridian

In moderate use and production

- D. Arias-Voss Round Cap Lens (mini lenses) and annular ring diagnostic lenses.

Uses two sets of diagnostic lenses to achieve fit on keratoconus patients.

1. Annular ring diagnostic lenses - used to fit periphery

Diameter of central aperture = 4 to 7 mm

Total lens Diameter = 8 to 11 mm

Width of annular section = 2 mm

Radii of curvature = 6 to 9.00 mm in .1mm steps

2. Round cap lens = for evaluation of the cone

Total lens diameter = 5 to 6 mm

Radii of curvature = 5 to 6.90 mm in .1 mm steps

In the early days of fitting keratoconus by the method, the final lens was a composite of the two sets.

Later it was discovered that by fitting only the cone, excellent results were achieved. This lens is on the average 7.0 mm overall diameter with a 6.0 mm O.Z. and is designed to span the apex of the cone and to fit tangential on the periphery.

In limited use and production.

#### VII. Special modifications

- A. Aperture Venting = small hole or holes drilled in various locations throughout lens to allow better tear flow and to permit gaseous exchange of  $O_2$  and  $CO_2$  between cornea and atmosphere.

- B. Chamfer Venting = a groove, channel, or passageway on the inner surface of the lens to achieve better tear flow.

1. Vent-Air Lens - A bicurve lens constructed with four hemispheric grooves along the inside perimeter. Each groove is 3 mm in diameter and has a .05 mm sagitta.

Overall diameter = 8 to 11 mm

Optic zone = 7.5 mm

Secondary width =  $\frac{1}{2}$  to 1  $\frac{3}{4}$  mm (called a bevel but

should be considered a secondary curve radius is variable)

Center thickness = .15 to .3

Fitting: 9.5 to 11 mm diameter lenses are fitted on the base curve .1 to .4 mm flatter than K while 8 to 9 mm lenses are fitted on the Base Curve .2 steeper than K to on K. The radius of the secondary ("bevel") varies from 1.4 to 2.6 mm flatter than the Base Curve.

Fit achieves apical clearance, minimal clearance, or central touch (steeper than K) (on K) (flatter than K)

In wide use and production

2. Vaulted Micro-V Lens = a bicurve lens constructed with three equi-spaced grooved areas on the inside periphery.

Overall diameter =  $1\frac{1}{2}$  mm smaller than horizontal corneal diameter

Optic zone = 5 to 7 mm

Secondary width = 2 mm

Center thickness

Fit=Apical clearance; peripheral bearing

In moderate use and production

3. Spiro-Vent Lens - a monocurve lens with multicurve bevel constructed with five symmetrically-placed channels in the inside peripheral area, spiraling inward toward the central zone.

Overall diameter = 9.2 mm to 10.0 mm

Optic zone = 8.2 mm

Bevel width = .5 to .9 mm

Channels = width = 2.5 mm avg

in relation to the base curve, the curves are .5 mm flatter, 1.1 mm flatter, 1.7 mm flatter, 2.5 mm flatter and a outermost fixed curve of 12.5 mm radius. Grooves are blended to form a parabolic periphery. Base Curve is fitted on K to .75 D steeper than K.

Fit is on alignment.

In limited use and production

6. Aperture and Chamfer Vented Lens - The Spiro-Conic Lens

Basically a spiro-vent lens with 5 aperture vents within the channels. Used on keratoconus cases where irregular cornea may cause tear stagnation.

In limited Use

- D. Facets = small round protuberances placed on the posterior surface of a lens. These are used almost exclusively on the Stinson Corneal Contact Lens. This is a bicurve lens with one or more facets placed at the periphery. These elevations are the only bearing areas while the rest of the lens spans the cornea.

In limited use and not now in production

- E. Truncation=the cutting off of an outer portion of a lens so as to make a non-circular shape.
1. Inferior Truncation = cutting off the lower edge of a lens to conform to the lower lid curve. Used in prism ballast, front surface cylinders and certain types of bifocals to prevent rotation of the lens.
  2. Superior Truncation = cutting off the upper edge of a lens to eliminate superior limbal indentation.
  3. Double Truncation = cutting off the upper and lower edges of a lens. Most used on a patient with a high lower lid and ATR astigmatism to achieve better centration. Also in certain types of bifocal contact lenses.
  4. Triangular = used in the Kontur ultracon Three angle bifocal

Some authorities consider a truncated lens as any which is non-circular.

Truncation, while widely used at one time, is gradually being discarded as fitting techniques are being improved.

- F. Prism Ballast - a lens in which the lower edge of the lens is thicker than the upper edge. It may be circular, elliptical, triangular, or truncated in shape. Usually the base of the prism is dotted so that the practitioner may note if the lens is orienting properly. Amount of the prism is between 1.0 to 2.0 diopters

- Used:
1. Correction of residual astigmatia(front surface cylinder)
  2. High riding lenses (great amount of lid lift)
  3. Orientation of bifocal contact lenses
  4. Orientation of toric inner surfaces
  5. Correction of vertical heterophorias
  6. To center eccentrically performing lenses
  7. To minimize lens movement
  8. To provide more corneal exposure

- G. Weight Ballast- the impregnation of an inert metal in the lower

portion of a CL theoretically to achieve the effects of a prism ballast without increasing thickness. (Experimental)

- H. Front Surface Cylinder = a correction for residual astigmatism ground on the front surface of the lens and stabilized by prism ballast, weight ballast, and/or truncation.

In wide use and production

- I. Lenticular Forms = the thinning of the peripheral contraocular position of a contact lens. Used to reduce both edge thickness and weight in high minus corrections.

In wide usage today.

- J. Toric Forms

1. Toxic bevel - a bevel in which two different radii tools are used. Theoretically prescribed when central cornea is spherical and peripheral cornea is toroidal. Very seldom used alone on a spherical lens but is widely used in conjunction with a toric secondary zone and/or a toric base curve.

In limited use.

2. Toric secondary - a secondary zone in which there are two different radii designed to fit the flattest and steepest meridians in corneal astigmatism. It would be used with a toric bevel but not necessarily have to have a toric base curve. (However, it is rarely used in this manner, because a spherical base curve would appear oval shaped)

In moderate use and production.

3. Multitoric forms- those lenses having two radii on the base curve, secondary curve, and bevel. Prescribed in cases of corneal astigmatism where a spherical lens cannot achieve optimum fit or vision.

In moderate use and production.

4. Toric front surface - front surface cylinder  
(see section VII part H)

- K. Tinting = the adding of color to plastic to allow ease in handling the lenses, reduce glare, and enhance natural iris color.

1. Permanent-lenses which have been fabricated from a button of colored plastic.
2. Dyed Lenses-those lenses which have been dip dyed in a special dye. Since this process coats only the surfaces of the lenses, it is temporary in nature.



Both techniques are currently in use but the permanent type is becoming most widely used.

**E. Index properties of Plastic**

**1. Hard Plastic**

- a. Standard Density-(Polymethyl Methacrylate)  
most commontype in use today.  
Varies from 1.488 in index of refraction
- b. High Density - ("Hyfrax"-Morrison Laboratories)  
Gaining in usage because it enables the practitioner to utilize lighter and thinner lenses.  
Index of refraction = 1.568
- c. Low Density - experiments are being performed to achieve plastics with an index of refraction of 1.33 which would match the index of the tears and eliminate flare problems.

- 2. Soft Plastic - purely experimental. Theoretically the ideal contact lens material will be a soft, flexible, porous substance which will permit permanent wear.

**M. Surface Treatment of Plastic**

- 1. In order to improve the wettability of the Contact Lens surface.
  - a. Vacuum plating of specific chemicals - attempts to permanently improve surface characteristics. Several laboratories use this method but its major handicap is its removal during routine adjustment.
  - b. Wetting agents - most commonly used in practice today. The patient places the solution on the lenses before insertion. This agent coats the plastic with a thin film which allows more even tear flow across the surfaces.
- 2. In order to alleviate glare problems and filter out harmful rays.  
In limited use today due to the problem that after the lens is coated, the practitioner is no longer able to evaluate the fluorescein pattern.

**VIII. Types for Presbyopia**

- A. Simultaneous Vision - a system in which both the near and distance prescriptions come to a focus on the retina
  - 1. Mazow Pupilens - a contact lens with a pinhole aperture. By reducing the size of the blur circle on the retina, the lens

creates a better depth of focus and thus improves the patients' near problems. It is made by painting an opaque iris with a central clear zone on the lens.

The lens should have a 1.0 mm pupil and power equal to the distance prescription plus one-half of the near add for optimum results.

Mainly an experimental lens. No longer in use due to fabrication problems.

2. DeCarle Bivisual Corneal Bifocal Contact Lens  
(also described by Dr. F. William Collins)

A contour lens with the diameter of the distance optical zone equal to the diameter of the constricted pupil and a peripheral near optical zone. Back surface optics.

It was in limited production but is seldom used today because it is not useable at night due to dilation of the pupils.

- B. Alternating Vision - A system in which the patient can switch from the distance optical zone to the near optical zone.

1. Bicon - a tricurve lens which depends on a predictable vertical movement when the patient looks down to read. It is fitted 0.50 to 0.75D flatter than K. The central distance optical zone is 3.0 to 6.0 mm in size while the peripheral near optic zone is computed by subtracting the distance optic zone from the ocular optic zone and dividing by two. The optics are ground on the front surface of the lens. A typical lens is 9.5 mm in overall diameter with an ocular optic zone of 7.5 mm.

In limited production but not often used due to inability to be used for reading at eye level.

2. Morrison Modification of the Bicon

Same principle as the bicon but the lens contains a larger distance optical zone and near optics are ground on the ocular surface.

Limited production and use.

3. Kontus Three Angle (ultracon)

A triangular prism ballast lens. The back surface contains a single radius and bevel while on the front surface is incorporated the optics. The base of the triangle contains the near prescription while the apex includes the distance, prescription. The two sides may be concave, convex or flat. No Longer in Use.

4. Cinéfro - a round lens fitted on previous principles but with its near segment shaped concave upwards instead of concave downwards. Optics are ground on the front surface. Not in current use.
5. Covington-Bailey = an experimental lens which has prism ballast and a flattened upper edge and contains a smaller round distance optic zone and the remainder of the lens as near prescription. Not in current use.
6. Black - around bicentric lens similar to the ultracon prism bifocal. Not in current use.
7. Ultracon
  - a. Prism Bifocal
  - b. Truncated Prism Bifocal
  - c. Cylindrical Bevel Bifocal

All are round types with a distance upper portion and near lower zone. Optics are on front surface. The variations in design are attempts to obtain better meridional orientation.

These lenses are in moderate production and use.

8. Winner Dual Lens - a modified double-truncated lens with a distance upper portion and lower near zone. Front surface optics. In very limited useage.
9. Akiyama - a rectangular bicurve lens approximately 10.0 mm in width and 4.0 mm in vertical height. It contains only a near prescription and rides below the pupil when the patient looks at distance.  
In moderate useage in Japan but used little elsewhere.
10. Paraser K - an elliptical shaped concavo-convex lens having an upper beveled edge and a lower inner surface ground for the reading correction. The near portion is fitted flatter than "K" while the distance correction is parallel to "K".  
In limited use.
11. McKay Taylor Additive Bifocal - an experimental lens of various shapes which has a lenticular outer surface acting as a host on which thin additive lenses are placed.  
Not in use.

IX Subnormal Vision Devices

- A. Feinbloom Miniscone - a telescopic contact lens containing from within out: a single curve inner surface with a central biconcave ocular zone, an air space, and a plus objective on the outer surface . It is 414 mm in thickness and 12.5 mm in overall diameter. Not in wide usage. Mainly experimental.

- B. Filderman Telecon - the use of a high minus contact lense in conjunction with a high plus spectacle lens to form a Gallilean Telescope system.

In limited use.

- X. Other Uses - Corneal contact lenses have many other uses such as cosmetic, sports, diagnostic, and treatment lenses. However, all are modifications of the basic lenses discussed in this paper.

## BIBLIOGRAPHY OF CONTACT LENS ARTICLES IN OPTOMETRY

American Optometric Association

*phone*  
*Shannon*  
 April 29 1963  
*in hall*

AMERICAN JOURNAL OF OPTOMETRY  
AND  
ARCHIVES OF THE AMERICAN ACADEMY OF OPTOMETRY

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1930	William Feinbloom, O.D.	"Contact Lenses"
1937	Feb William Feinbloom, O.D., pp 41	"A Plastic Contact Lens"
1939	Jun Reuben Greenspoon, O.D., pp 231	"A New Method of Determining Corneal and Limbal Clearance in Prescribing Contact Lenses"
	Sep Reuben Greenspoon, O.D., pp 345	"Contact Lenses Used to Temporarily Change the Appearance of the Eye"
1940	Apr John C. Neill, O.D., pp 153	"The Use of Ultra-Violet Light and Fluorescein in the Fitting of Contact Lenses"
	Dec Henry J. Hoff, O.D., pp 537	"A New Contact Lens Fitting Chart"
1941	May William Feinbloom, O.D., pp 212	"Refraction Procedure in the Fitting of Contact Lenses"
Book Review		
1942	Oct L. L. Beacher, O.D., pp 476	"Review of Contact Lens Technique"
Abst.	Jan J. I. Pascal, O.D., pp 45	"Contact Lens Solution-- Ever Present Problem"
Abst.	Jul F. M. Lippmann, O.D., pp 316	"Points on Contact Lens Fitting"
1943	Jan Reuben Greenspoon, O.D., pp 12	"Correction of Aphakia and Hyperphoria with a Contact Lens"
Abst.	Mar Ewing Adams, O.D., pp 111	"Contact Lenses Following Tenotomy in Alternating Squint"
Abst.	Mar Ewing Adams, O.D., pp 112	"Contact Lenses in Trichiasis"
	Sep Reuben Greenspoon, O.D., pp 313	"A New Trial Set for Fitting Contact Lenses"
1944	Oct S. M. Braff, O.D., pp 389	"The Fitting of Contact Lenses by the Molding Technique"
1947	May Eugene Freeman, O.D., pp 203	"The Optometric Impression Technique in the Fitting of Contact Lenses"
	Aug M. H. Kauh, O.D. and D. G. Hummel, O.D., pp 385	"A Simple Fixation Target for Use in Contact Lens Fitting"
	Oct Leon Firestone, O.D., pp 485	"Subnormal Vision due to Keratoconus Corrected with Contact Lenses"
	Nov C. S. Bridgman, O.D., pp 569	"Desquamation of the Cornea Resulting from a Contact Lens Wearing Period of 1-1/2 days Duration -- A Case Report"
	Dec Norman Bier, O.D., pp 611	"The Tolerance Factor and Sattler's Veil as Influenced by a New Development in Contact Lens Making"

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1948	Aug Charles J. Bridgman, O.D., pp 359	"A Summary of Certain Opposed View-points in Fitting Contact Lenses"
	Oct John C. Neill, O.D., pp 461	"Contact Lens Haze"
1949	Feb Robert Graham, O.D., pp 75	"The Corneal Lens -- A Progress Report"
	Mar Leon E. Firestone, O.D., pp 95	"Contact Lenses and Their Effect on Neuro-muscular Patterns of Vision"
	Mar Norman Bier, O.D., pp 120	"The Practice of Ventilated Contact Lenses"
	Jul Norman Bier, O.D., pp 290	"High Myopia and Vertical Phoria Corrected with Contact Lenses"
	Sep Mathew Alpern, O.D., pp 379	"Accommodation and Convergence with Contact Lenses"
1950	Mar Howard F. Harries, O.D., pp 137	"Monocular Anterior Corneal Staphyloma Corrected with Contact Lens with Resultant Binocular Fusion -- A Case Report"
	Apr Norman Bier, O.D., pp 201	"Developments in Contact Lens Practice"
	Jul John C. Neill, O.D., pp 329	"The Cosmetic Contact Lens -- A Case Report"
	Jul Irving P. Filderman, O.D., pp 350	"Use of Contact Lens in Case of Monocular Keratoglobus -- A Case Report"
1951	Mar Irving Vics, O.D., pp 147	"A Report on 10 Cases Fitted with the Feinbloom Self-Centering Corneal Contact Lens"
	Jul Solon Braff, O.D., pp 369	"The Use of Corneal-Contact Lenses in High Hyperopia"
	Nov Ewin Steele, O.D., pp 560	"Contact Lens Clinics of the London Refractive Hospitals"
	Dec John C. Neill, O.D., pp 616	"Contact Lens Fitting in the United States"
1952	Mar Robert Graham, O.D., pp 137	"Corneal Lenses -- A Supplementary Report"
	Apr Isidore Finkelstein, O.D., pp 185	"The Biophysics of Corneal Scatter and Diffraction of Light Induced by Contact Lenses"
	Jun Solon Braff, O.D., pp 318	"Contact Lenses as an Occupational Requirement -- A Case Report"
	Jul Eugene Freeman, O.D., pp 347	"Pinhole Contact Lenses"
1953	Jan Henry W. Hofstetter, O.D., pp 41	"Leonardo and Contact Lenses"
	Mar Max Schapero, O.D., pp 157	"The Fitting of Highly Toric Corneal with Toric Corneal Contact Lenses"
	Apr Frank Dickinson, O.D., pp 210	"Refractive Diagnosis Aided by Contact Lens Techniques"
	Oct Alfred A. Rosenbloom, O.D., pp 536	"The Correction of Unilateral Aphakia with Corneal Contact Lenses"
	Oct Norman Bier, O.D., pp 557	"Contact Lens Routine and Practice"

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1954	Jan Jay M. Enoch, O.D., pp 12	"Contact Lenses: Some Aspects of Visual Acuity and Photophobia"
	Feb pp 78	"Notes on a New German Corneal Contact Lens"
	Jul Frank Dickinson, O.D., pp 378	"A Second Report on the Fitting and Use of Microlenses"
	Aug John C. Neill, O.D., pp 411	"The Design and Development of a Contact Lens for Underwater Seeing"
	Sep James Monical, O.D., pp 468	"Observations on Contact Lens Practice"
1955	Jan J. Erlanger, O.D., pp 41	"Clinical Observations on the Fitting of Micro-Lenses"
	Jun Edward Fisher, O.D., pp 289	"Contact Lens Resources"
	Jun Robert Graham, O.D., pp 319	"Descarte's Contact Lens"
1956	Feb Jay M. Enoch, O.D., pp 77	"Notes on a New German Contact Lens"
	Frank Dickinson, O.D.	"Corneal Contact Lenses"
	Apr Rudolph Ehrenberg, O.D., pp 218	"Corneal Contact Lenses"
	Apr L. L. Beacher, O.D., pp 218	"A Study of the Cornea in Relation to Contact Lens Practice"
	Jun Norman Bier, O.D., pp 291	"Graduate Education for Contact Lens Fitting"
	Aug John C. Neill, O.D., pp 432	"Drafting the Requirements for a Minimum Clearance Corneal Contact Lens"
	Nov Daniel O. Elliott, O.D., pp 602	"A Note on Contact Lens Staining by Strip Fluorescein"
	Nov G. P. Elmstrom, O.D., pp 614	"A Microlens Measuring Aid"
1957	Oct David Laycock, O.D., pp 538	"A Method of Fitting Contact Lenses and Correcting Aphakia"
1958	Nov A. Harry Malin, O.D.,	"Basic Principles in Contact Lens Fitting"
	Dec Norman Weiss, O.D., pp 613	"Psychosis and Neurosis Encountered in Contact Lens Fitting with Case Reports"
	Feb L. L. Beacher, O.D., pp 72	"Present Status of Contact Lens Practice"
	Jun Dan Hummel, O.D., pp 327	"An Approach to Prescribing Corneal Type Contact Lenses"
	May Harold Moss, O.D., pp 262	"A Case Report on Contact Lenses in Constant Use for a 3-month Period"
	May R. B. Dick, O.D., pp 248	"Notes on Fitting Contact Micro-lenses"
	Jul P. F. Thomas, O.D. and O. A. Williams, O.D., pp 373	"Problems and Compromises in the Design of Aspheric Contact Lenses"
1959	Jun John K. Davis, O.D., pp 279	"Need for Ventilated Scleral Contact Lenses"
	Dec Norman Bier, O.D., pp 671	"Refinements in Contact Lens Adjustments to Increase Wearing Time"
	Jul Fred Farnum, O.D., pp 382	"Observations on the Fitting of Corneal Contact Lenses"
	Apr Euin Steele, O.D., pp 194	

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1959	May Monroe Hirsh, O.D., pp 248	"Is the Fitting of Contact Lenses an Optometric Specialty?"
	Nov Harold Moss, O.D., pp 591	"The Scleral Contact Lens and Its Values in Today's Practice"
	Mar Irving Filderman, O.D., pp 135	"The Telecon Lens for the Partially Sighted"
	Feb Robert Graham, O.D., pp 55	"Evolution of Corneal Contact Lenses"
	Jun Harold Moss, O.D., pp 313	"A Clinical Experimental Study of Corneal Contours in the Fitting of Contact Lenses"
1960	Jun John C. Neill, O.D., pp 273	"Slit Lamp Diagnosis and Procedures in Contact Lens Practice"
	Apr Frank Dickinson, O.D., pp 201	"Heat, Sunglare, and Dust are Factors in Contact Lens Fitting in South Africa"
	Dec John Hier, O.D., pp 642	"Where We Stand on Contact Lens Fitting in 1960"
	Nov O. Williams, O.D., pp 588	"Notes on Psychological Fitting in Contact Lens Practice"
	Jul William Ludlam, O.D., pp 363	"Clinical Experience with the Contact Lens Telescope"
	Oct Max Schapero, O.D., pp 533	"A Survey of Current Fitting Techniques for Corneal Contact Lenses"
	Mar Robert Morrison, O.D., pp 165	"The Use of Contact Lenses in Adolescent Myopic Patients"
	Aug George N. Jessen, O.D., pp 379	"Recent Developments in Bifocal Contact Lenses"
	Nov Ivan J. Szekely, O.D., and Joseph Z. Krezanoksi, O.D., pp 572	"Hygenic Contact Lens Care and Patient Comfort"
1961	Feb Joe B. Goldberg, O.D., pp 87	"Some Notes on Contact Lenses with Mention of Corneal Epithelium Turn-over"
	Apr R. C. Mueller, O.D., pp 211	"A Routine for Examination of Contact Lens Patients"
	May Theodore Grosvenor, O.D., Ph.D. pp 237	"Clinical Use of the Keratometer in Evaluating the Corneal Contour"
	May Donald Brucker, O.D., pp 265	"How to Prepare Contact Lenses for Use on the Eye"
	Aug Gerald Westheimer, O.D., Ph.D. pp 445	"Aberrations of Contact Lenses"
	Jun Monroe J. Hirsch, O.D., pp 349	"Contact Lenses Do Not Belong in the Market Place"
1962	Mar Irvin W. Silberstein, O.D., pp 111	"Contact Lenses in Industry"
	Jan Ralph Tocher, O.D., pp 3	"Astigmatism Due to the Tilt of a Contact Lens"
	Apr John C. Neill, O.D., pp 169	"Contact Lenses and Aphakia"
	Apr Solon Braff, O.D., pp 195	"Scleral Lenses in Contact Lens Practice"
	Jul John R. Kennedy, O.D., pp 369	"Contact Lenses in Complicated Glaucoma"



<u>YEAR</u>		<u>AUTHOR</u>	<u>TITLE</u>
1962	Aug	Morton Sarver, O.D., pp 434	"Fluid Lens Power Effect with Contact Lenses"
	Oct	Robert Mandell, O.D., pp 513	"Reflection Point Ophthalmometry"
	Oct	Charles Bayshore, O.D., pp 552	"Report on 276 Patients Fitted with Micro-corneal Lenses, Apical Clearance, and Central Ventilation"
	Nov	Tom Brungardt, O.D., pp 596	"Study of Corneal Contour Measurements"
	Dec	Harold Moss, O.D., pp 653	"Bifocal Contact Lenses -- A Review"
	Dec	George N. Jessen, O.D., pp 680	"World Wide Summary of Contact Lens Techniques"

JOURNAL OF THE AMERICAN OPTOMETRIC ASSOCIATION

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1935	William Feinbloom, O.D.	"Subnormal Vision Correction"
1940	Oct William Feinbloom, O.D., pp 88	"The Practice of Fitting Contact Lenses"
	Nov pp 120	
1941	Jan pp 175	
	Feb pp 203	
	Mar " " pp 244	" " " "
	Apr pp 272	
	Jun pp 351	
	Jul pp 371	
	Sep pp 69	
	Oct pp 105	
1953	Oct G. P. Elmstrom, O.D., pp 136	"Corneal Contact Lenses in Police Work"
1955	Oct Evert Warren, O.D., pp 160	"The Fitting of Contact Lenses in Optometric Practice"
1956	Apr Harold Moss, O.D., pp 510	"The Practical Aspects of Contact Lens Practice"
1957	Feb Norman Bier, O.D., pp 394	"The Contour Lens"
	Jul Robert Morrison, O.D., pp 711	"Contact Lenses and the Progression of Myopia"
	Sep Evert Warren, O.D., pp 113	"Tropias and Contact Lenses"
1958	Feb Robert Lester, O.D., pp 442	"The Full Circle of Contact Lens Care"
	Feb Robert Morrison, O.D., pp 445	"Contact Lenses: A Review of Their Many Uses"
	Feb Bernard Mazow, O.D., pp 447	"Slit Lamp Microscopy in Contact Lens Fitting"
	Feb E. David Pollock, O.D., pp 450	"Adjustments on Corneal Type Lenses"
	Feb William Collins, O.D., pp 453	"Preliminary Report: A Bifocal Corneal Contact Lens"
	Feb Bernard Abrams, O.D., and Marvin Whitman, O.D., pp 455	"An Evaluation of Bier's Contact Lens Application Techniques"
	Apr Harold Moss, O.D., pp 579	"The Contour Principle in Contact Lens Fitting"
	Aug Herbert Player, O.D., pp 33	"An Investigation on the Use and Satisfaction of Contact Lenses in Sports"
	Sep K. Clifford Hall, O.D., pp 121	"A Special Contact Lens for Complete Ptosis"
1959	Mar Neal Bailey, O.D., pp 557	"The Examination and Verification of a Contact Lens"
	Mar Irving Filderman, O.D., pp 561	"Clinical Procedure for Adapting the Telecon Lens"
	Mar Herbert Moss, O.D., pp 563	"Contact Lens Records, Forms, and Routine"
	Mar Roy Clunes, O.D., pp 567	"Prescribing the Proper Diameter of Corneal Contact Lenses"
	Mar Frederick Farnum, O.D., pp 569	"The Ophthalmometer in Corneal Contact Lens Practice"

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1959	Mar Harold Moss, O.D., pp 570	"The Contour Principle in Corneal Contact Lens Prescribing for Keratoconus"
	Aug Herbert Moss, O.D., pp 57	"Semi-sclero-corneal Flange Lens for Correcting Residual Astigmatism"
	Dec David Brezel, O.D., pp 379	"An Instrument for Measuring the Base Curves of Contact Lenses"
1960	Feb Bernard Abrams, O.D., pp 537	"An O.D. Reports on Contact Lens Patents and Litigation"
	Mar C. Edward Williams, O.D., pp 613	"An Interpretation of Contact Lens Variables and a Resultant Keratoconus Technique"
	Mar Samuel E. Alperen, O.D., pp 617	"Contact Lens Fitting for Aphakia"
	Mar Wendell E. Bryan, O.D., pp 621	"Corrections of Strabismus with Contact Lenses"
	Mar Irving Filderman, O.D., pp 623	"A Suggested Therapy for Cases of Keratoconus"
	Mar John R. Kennedy, O.D., pp 627	"Contact Lens Procedure in Exophthalmos"
	Mar George W. Masten, Jr., O.D., pp 630	"Practice Management in Contact Lens Practice"
	Mar Roger A. Yarwood, O.D., pp 633	"The Use of Contact Lens in all Kinds of Sports"
	May Paul Ellant, O.D., and I. Philip Silberman, O.D., pp 811	"The Use of Contact Lenses for the Correction of Monocular Aphakia"
	Jun Bernard Abrams, O.D., pp 901	"The Re-Fitting of Contact Lenses"
	Jul Neal J. Bailey, O.D., pp 985	"Contact Lenses Must be Kept Wet"
	Aug P. F. Thomas, O.D., pp 40	"Basic Concepts of Corneal Correction"
	Sep Lowell Glatt, O.D., and Arthur Schwartz, A.B., pp 143	"Contact Lenses for Children and Adolescents - A Survey"
	Oct Samuel E. Alperen, O.D., pp 221	"Contact Lenses and Automobile Driving"
	Nov Phillip Haynes, O.D., pp 299	"Comments on Factors Which Must Be Considered in the Fitting of Contact Lenses"
	Nov Robert Morrison, O.D., pp 311	"Keratoconus, Aphakia and Contact Lenses"
	Bernard Abrams, O.D., and Neal J. Bailey, O.D.,	"Contact Lens News and Views"
1961	Jan Chester H. Pfeiffer, Ph.D., pp 451	"The Contact Lens Characteristics for an Optimal Fit"
	Mar Theodore Grosvenor, O.D., pp 621	"The Relationship Between Contact Lenses and Visual Training"
	Mar Don Brucker, O.D., pp 625	"Tight Lids and Corneal Edema"
	Mar Robert Mandell, O.D., pp 627	"Profile Methods of Measuring Corneal Curvature"
	Mar R. B. Dick, O.D., pp 632	"Incidence of Corneal Insult in Contact Lens Wearers - A Preliminary Report"

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1961	Mar Michael Friedberg, O.D., pp 642	"Contact Lens Apertures and Toric Curve Designs"
	Sep Samuel Arbital, O.D., pp 131	"Office Contact Lens Modification"
	Sep R. B. Mandell, O.D., pp 137	"Methods to Measure the Peripheral Corneal Curvature"
	Oct Max Schapero, O.D., pp 215	"Physical Considerations in Contact Lens Fitting - Part I - Determinations from the Case History"
	Oct R. B. Dick, O.D., pp 219	"The Incidence and Classification of Corneal Lesions in Beginning Contact Lens Wearers"
	Nov Robert Ullen, O.D., pp 288	"Legal Implications in Fitting Contact Lenses"
	Nov Max Schapero, O.D., pp 300	"Physical Considerations in Contact Lens Fitting - Part II - Determinations from the External Exam"
	Dec Max Schapero, O.D., pp 351	"Physical Considerations in Contact Lens Fitting - Part III - Determinations from Refraction, Wearing"
1962	Mar Neal J. Bailey, O.D., pp 573	"New Contact Lens Developments"
	Mar Chester H. Pfeiffer, O.D., Ph.D. pp 578	"Contact Lenses and Visual Training Complement Each Other"
	Mar William Baldwin, O.D., pp 583	"Cataract Surgical Procedures and Contact Lenses"
	Mar R. B. Mandell, O.D., pp 585	"Methods to Measure the Peripheral Corneal Curvature - Geometric Construction and 'Computers'"
	Mar Richard Misage, O.D., pp 590	"Changes in Corneal Curvature with Contact Lens Wear"
	Mar Joe B. Goldberg, O.D., pp 593	"The Fallacy of the Ophthalmometer in Contact Lens Practice"
	Jun Tom Brungardt, O.D., pp 830	"The Case Against Toric Base Curve Contact Lens Construction"
	Jul R. B. Mandell, O.D., pp 889	"Methods to Measure the Peripheral Corneal Curvature - Ophthalmometry"
	Aug Oscar W. Richards, Ph.D., and Bernard Grolman, O.D., pp 53	"Avoid Tinted Contact Lenses When Driving at Night"
	Sep Tom F. Brungardt, O.D., pp 131	"A Fast, Accurate, and Practical Measurement of the Secondary Curve Radius"
	Sep Gerald Westheimer, O.D., pp 135	"The Visual World of the New Contact Lens Wearer"
	Oct Merrill J. Allen, Ph.D., O.D., pp 211	"Case Analysis and Contact Lenses"
	Nov Joseph Nupuf, O.D., pp 297	"Subjective Responses to Queries on Changes in Visual Acuity While Wearing Contact Lenses"
	Nov Robert Ullen, O.D., pp 307	"Front Versus Back Vertex Power Readings on Contact Lenses"

OPTICAL JOURNAL AND REVIEW OF OPTOMETRY

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1946 Oct 15	Mitchell Silbert, O.D. and Joseph J. Carlson, O.D., pp 34	"The Technique of Fitting 'Scleraform' Contact Lenses"
Nov 1	" " " " pp 31	" " " " " "
Nov 15	" " " " pp 33	" " " " " "
Jan 15	Mitchell Silbert, O.D., and Joseph J. Carlson, O.D., pp 37	"Residual Astigmatism with Contact Lenses"
May 15	Samuel W. Silverstein, O.D., pp 38	"Fitting Contact Lenses by 'Spot Alternation'"
1947 Mar 1	Hal Senter, O.D., pp 35	"Eliminating Visible Crescents in Contact Lens Fitting"
Mar 15	Joseph I. Pascal, O.D., pp 42	"The Field for Contact Lenses"
May 1	Lawrence Lewison, O.D., pp 44	"Optical Theory of Contact Lenses"
Jun 1	S. W. Silverstein, O.D., pp 29	"The 'Prefit' Method of Contact Lens Fitting"
Jun 15	" " " " pp 39	" " " " " "
Oct 1	Harry Berenholtz, O.D., pp 33	"Physiology of Contact Lens Solutions"
Oct 15	" " " " pp 39	" " " " " "
1948 Jan 15	Mitchell Silbert, O.D., pp 32	"An Unusual Use of Contact Lenses"
Nov 1	Harry Berenholtz, O.D., pp 37	"Anatomy of the Eye and Its Relation to Contact Lens Fitting"
Dec 1	Euin Steele, O.D., pp 36	"Making and Fitting Ground Contact Lenses"
1949 Sep 1	L. Lester Beacher, O.D., pp 37	"Contact Lenses in Aphakia"
1950 Mar 1	Ned Saliba, O.D., pp 37	"Considerations in Fitting Contact Lenses"
Apr 1	Samuel W. Silverstein, O.D., pp 62	"Contact Comments"
Apr 15	" " " " pp 42	" " " " " "
Dec 1	Donald Golden, O.D., pp 44	"Observations on Fluidless Contact Lenses"
Dec 15	John A. Cronin, O.D., pp 46	"Increasing the Demand for Contact Lenses"
1951 Feb 1	Robert Graham, O.D., pp 27	"Optometric Uses of the Slit Lamp"
Feb 15	Ned Saliba, O.D., pp 54	"The Decline of Contact Lenses"
Mar 15	Euin Steele, O.D., pp 35	"The Future of Contact Lenses"
1952 Feb 1	Donald Golden, O.D., pp 32	"A New Development in Contact Lenses"
Mar 1	Max Schapero, O.D., pp 30	"A Corneal Contact Lens Record Form"
Mar 15	D. M. Rubinstein, O.D., pp 36	"Contact Lenses - A Re-evaluation"
Jun 15	Lawrence Lewison, O.D. pp 31	"Fundamental Factors in Fluidless Lenses"
Sep 15	Samuel W. Silverstein, O.D., pp 49	"The 'Silvent' Contact Lens"
Oct 1	Maurice G. Poster, O.D., pp 33	"A Turning Point in Contact Lens Fitting"

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1953 Jan 15	Louis Zabner, O.D., pp 32	"The Economics of Contact Lens Fitting"
Mar 15	Samuel W. Silverstein, O.D., pp 50	"Silvent Contact Lens Design"
Sep 15	Donald Golden, O.D., pp 35	"Correction of Keratoconus and High Astigmatism with Contact Lenses"
Sep 1	Kevin M. Tuohy, O.D., pp 43	"A Routine Procedure for the Use and Application of Contact Lenses"
Dec 1	Joseph Birnbaum, O.D., pp 30	"A Case History on the Use of Contact Lenses in Correcting Keratoconus"
1954 Jan 1	B. L. Nierenberg, O.D., pp 29	"Applied Psychology and the Contact Lens Patient"
Oct 15	B. L. Nierenberg, O.D., pp 37	"Some Applications of Contact Lens Prostheses"
Nov 15	Bernard Abrams, O.D., pp 33	"A New Concept of Corneal Lenses"
Dec 1	Samuel Silverstein, O.D., pp 32	"Case Report of Aniridia in a Seven Year Old Patient"
1955 Apr 1	L. Lewison, O.D., pp 34	"The Vent-Air Corneal Lens"
Aug 1	E. David Pollock, O.D., pp 29	"Basic Principles and Variables of the Corneal Type Lens"
Sep 15	Mitchell Silbert, O.D., pp 56	"Minimum Lid Sensation as a Contact Lens Fitting Factor"
1956 Mar 15	E. David Pollock, O.D., pp 39	"Observations on the Fitting of the Micro-Lens"
May 1	William Feinbloom, O.D., pp 25	"The Gyroscope Contact Lens and Corneal Diopter Plot"
Aug 15	L. Lester Beacher, O.D., pp 31	"Contact Lenses: Effectivity of Refraction"
Dec 15	L. Lewison, O.D., pp 52	"A Chart of Contact Lens Fitting Procedure"
1957 Feb 1	Harold I. Moss, O.D., pp 36	"Micro-Lens Prescribing"
Feb 15	Marshall V. Mark, O.D., pp 33	"Unilateral Aphakia-Case Report"
Apr 1	Robert Goodman, O.D., pp 37	"Danger of Corneal Pressure in Fitting"
Oct 1	Lawrence Lewison, O.D., and Harry Hollander, O.D., pp 40	"Report on New Ultra Tiny, Vent-Air Grooved Contact Lenses"
Oct 15	Bernard S. Adams, O.D., pp 32	"New Contact Lens Design - Theory and Description"
Nov 15	Earl W. Mounce, O.D., and Robley D. Stevens, O.D., pp 43	"What Do You Know About Contacts"
Sep 1	David Miller, O.D., pp 40	"Basic Physiology Involved in Fitting Corneal Lenses"
Sep 15	Robert Hart, O.D., pp 42	"Nineteen Diopters of Corneal Astigmatism Corrected with Contact Lens"
Nov 1	Donald L. Golden, O.D., pp 47	"The Airflo-non-pressure Lens - Theory and Description"
Dec 15	Ned Saliba, O.D., pp 54	"A Case of Keratoconus Fitted with Micro-Lenses"

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1958	Feb 15 Mitchell Silbert, O.D., pp 41	"Fitting a Corneal Lens for Comfort Following Iridectomy"
	Sep 1 Arthur Schwartz, O.D., pp 31	"Corneal Contact Lens Insurance"
	Oct 1 Joseph Carlson, O.D., pp 37	"Basic Factors in Checking the Progression of Myopia"
1959	Apr 1 Stephen St. Palley, O.D., pp 40	"The 'Polivision' Multifocal Lens - Theory and Design"
	May 15 L. Lester Beacher, O.D., pp 38	"Insertion Techniques for Aphakia"
	Aug 1 John R. Kennedy, O.D., pp 42	"Developments in the Contact Lens Field - Future Direction"
	Oct 1 Arthur Schwartz, O.D., pp 32	"The Human Factor in Contact Lens Insurance"
	Oct 15 Joe B. Goldberg, O.D., pp 40	"Fitting the Cornea and Determining the Lens Size"
	Dec 15 Neal J. Bailey, O.D., pp 41	"Special Contact Lenses and Their Application"
1960	Jan 1 " " pp 32	" " " "
	Jan 15 " " pp 54	" " " "
	Feb 1 Harvey Rosenwasser, O.D., pp 62	"Diagnosis and Adjustment of Lid Sensitivity Problems"
	Feb 15 " " " "	"The Theory of Keratoconus"
	Mar 1 Irving Filderman, O.D., pp 33	"Contact Lenses -- Case Reports"
	Mar 15 Mitchell Silbert, O.D., pp 38	"The Use of the Biomicroscope in Contact Lens Practice"
	Apr 1 Bernard Mazow, O.D., pp 44	"Thoughts on Contact Lens Fitting -- A Sleeping Giant by the Tail"
	May 15 Marvin Hartman, O.D., pp 43	"Effect of Corneal Planning -- A Case Report"
	Jun 15 Donald Hersh, O.D., pp 37	"Tear Flow as a Variable in Contact Lens Fitting Procedure"
	Jul 1 Paul Farkas, O.D., and T. W. Kassalow, O.D., pp 25	"Minimized Lens 'Settling'"
	Aug 15 Stanley Gordon, O.D., and Bernard Masling, O.D., pp 39	"Physiological Considerations of Corneal Turgescence"
	Sep 1 Harvey Rosenwasser, O.D., pp 39	"Factors Governing Adhesion from the Mechanical Standpoint"
	Sep 15 Herbert Fingles, O.D., pp 43	"A New Lens for Toroidal Eyes"
	Oct 15 Newton K. Wesley, O.D., pp 39	"Hypnosis as a Modality in Contact Lens Fitting"
	Nov 1 I. Irving Vics, O.D., pp 29	"Cosmetic Use of a Corneal Lens -- Case Report"
	Dec 1 Lowell Glatt, O.D., pp 24	"Residual Astigmatism with Contact Lenses"
1961	Jan 1 Neal J. Bailey, O.D., pp 30	" " " "
	Jan 15 " " pp 40	" " " "
	Feb 1 " " pp 31	" " " "
	Feb 15 " " pp 43	" " " "
	Mar 15 Seymour Weissner, O.D., pp 39	"A Specialized Adjustment Procedure with Spinning Tool"
	Apr 1 Robert Morrison, O.D., pp 32	"Some Observations on Bifocal Contact Lenses"

<u>YEAR</u>		<u>AUTHOR</u>	<u>TITLE</u>
1961	Apr 15	Leroy Rubin, O.D., pp 41	"Extending the Range of the Ophthalmometer and Keratometer"
	May 1	Donald Hersh, O.D., pp 29	"A System of Contact Lens Nomenclature"
	May 15	William Glazer, O.D., pp 39	"A Discussion of Prisms"
	Oct 1	Mitchell Silbert, O.D., pp 33	"How To Get Along With Your Contact Lens Laboratory"
	Nov 1	Leo Kershner, O.D., pp 27	"Current Concepts in Corneal Lens Fitting"
	Dec 15	Robert Ullen, O.D., pp 34	"Keratoconus and Contact Lenses"
1962	Jan 1	John Sherman, O.D., pp 21	"Some Pointers on Fitting Toric Base Contact Lenses"
	Jan 15	Kurt K. Field, O.D., pp 41	"Lensometer Contact Lens Inspection"
	Feb 15	Edwin F. Simmons, O.D., pp 44	"Contact Lenses - Helpful Procedures"
	Mar 1	Leroy Rubin, O.D., pp 44	"A Device for Measuring Peripheral Radii"
	May 1	Mitchell Silbert, O.D., pp 35	"Corneo-Limbus-Scleral Lens"
	Sep 1	Paul Farkas, O.D., and T.W. Kassalow, O.D., pp 19	"Regression of the Successful Contact Lens Patient"
	Dec 15	Melvin Remba, O.D.	"The ABC's of Toric Contact Lens Fitting"



THE OPTOMETRIC WEEKLY

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1949 Aug 25	Martin Kanter, O.D. and David Kraus, O.D., pp 1303	"Report on the Tuohy Corneal Lens"
1950 Aug 31	Don Scott, Ph.D. and Alvin Sirkis, O.D., pp 1288	"Increasing the Wearing Time of Contact Lenses"
1951 Nov 1	Newton K. Wesley, O.D. and George N. Jessen, O.D., pp 1713	"Symptoms and Corrections in Fitting Contact Lenses"
1952 Aug 21	William Long, O.D., pp 1347	"Basic Principles in Fitting the Fluidless Contact Lens."
May 1	Max Schapero, O.D., pp 713	"A Review of a New Corneal Contact Lens"
1953 Jan 22	James Baglien, O.D., pp 129	"The Use of Toric Corneal Contact Lenses"
Apr 9	Joe B. Goldberg, O.D., pp 585	"Comparison of Fluidless Contact Lenses"
Jun 11	J. Leonard Cohan, O.D., pp 1009	"Contact Lenses in Subnormal Vision"
Sep 10	G. P. Elmstrom, O.D., pp 1528	"Case History -- Facet Corneal Con- tact Lenses"
1954 May 20	Bernard Abrams, O.D., pp 827	"Contact Lenses in Subnormal Vision Cases"
Sep 30	D. E. Kraus, O.D., and L. M. Zabner, O.D., pp 1565	"The Hand Slit Lamp and Tuohy Corneal Lenses"
Oct 14	Newton K. Wesley, O.D., pp 1647	"Contact Lenses as a Diagnostic Instrument"
1955 Feb 10	Louis Zabner, O.D., pp 217	"Some Basic Concepts of Contact Lenses"
Mar 17	Jack R. Hale, O.D., pp 437	"Preliminary Microlens Report"
May 19	Bernard Abrams, O.D., pp 809	"Correcting Nystagmus with Corneal Lenses"
Apr 14	D. O. Elliott, Jr., O.D., pp 605	"Minimum Standards for Contact Lenses"
Jun 9	L. Lester Beacher, O.D., pp 939	"Corneal Contact Lenses"
Jul 7	" " " " " "	" " " " " "
Aug 18	" " " " " "	" " " " " "
Sep 8	" " " " " "	" " " " " "
Oct 6	" " " " " "	" " " " " "
Nov 3	" " " " " "	" " " " " "
Dec 15	Walter Simpson, O.D., pp 2067	"Environmental Factors Involved in Wearing Contact Lenses"
1956 Jun 21	Samuel Arbital, O.D., pp 1128	"A New Microlens Fitting Technique"
Aug 8	S. Allen Gardner, O.D., pp 1361	"Case History - A Contact Lens in Phthisis Bulbi"
Aug 23	Robert J. Morrison, O.D., pp 1487	"Contact Lenses and the Progression of Myopia"
Aug 30	H. I. Moss, O.D., and H. L. Moss, O.D., pp 1524	"The Complete Contact Lens Practice"

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1956 Sep 27	Newton K. Wesley, O.D., and George N. Jessen, O.D., pp 1740	"The Sphercon Lens - A New Development"
Nov 8	Norman Bier, O.D., pp 2016	"Contact Lenses and Ocular Disfigurement"
1957 Apr 25	L. Lester Beacher, O.D., pp 800	"A New Miniature Micro-type Contact Lens"
Oct 24	Marvin Hartman, O.D., pp 2027	"Some Intangible Aspects of Contact Lens Work"
Oct 31	Newton K. Wesley, O.D., pp 2071	"The Wiesbaden Scleral Glass Blown Lens"
Dec 26	Wilhelm Soehnges, O.D., pp 2427	"Measuring Corneal Reflection to Show Osmotic Changes"
1958 Jan 30	Ralph Gelobart, O.D., pp 188	"Contact Lenses - As A Service"
Mar 27	Newton K. Wesley, O.D., and George N. Jessen, O.D., pp 583	"The Sphercon Bifocal Contact Lens"
Jun 5	Bernard J. Simmons, O.D., pp 1062	"You Can Sleep with Contact Lenses"
Jul 24	J. Gale, O.D., pp 1364	"Dynascopy in Contact Lens Fitting"
Jul 31	Donald Hersh, O.D., pp 1397	"Modern Contact Lenses for Keratoconus"
Oct 2	George N. Jessen, O.D., pp 1862	"A Report of the 5th International Congress of Contact Lens Specialists"
Oct 23	Leonard Bronstein, O.D., pp 2029	"Keratascopy and Contact Lenses"
Oct 23	J. H. Loring, O.D., pp 2031	"Visual Acuity in 5 Selected Contact Lens Cases Not Correctable to Standard Acuity"
Oct 23	Norman Bier, O.D., pp 2032	"Two New Contact Lens Instruments"
1959 Jan 22	Anthony G. Carlson, O.D., pp 159	"Sleep and the Corneal-type Contact Lens"
Mar 19	Donald Hersh, O.D., pp 555	"Bifocal Contact Lens in Migraine Induced Aniseikonic Effect and Hyperphoria"
Apr 16	Byung Woo Kong, O.D., pp 760	"A New Mounting Method for Optically Measuring Contact Lens Surfaces"
May 21	L. Schechter, O.D., pp 1007	"Some Rules of Thumb for Bifocal Contact Lenses"
Aug 13	Richard Feinberg, Ph.D., D.O.S., pp 1599	"A New Technique in Vision Testing for Contact Lens Specialists"
Sep 3	A. M. Skeffington, O.D., pp 1743	"Contact Lenses in Functional Optometric Application"
Oct 1	Edward Kienast, O.D., pp 1953	"Patient Handling in Contact Lens Fitting"
Oct 29	Donald Cohen, O.D., pp 2165	"Psychology and Contact Lenses"
Nov 12	Robert Lester, O.D., pp 2261	"The Use of the Biomicroscope in Contact Lens Fitting"
Nov 19	Neal J. Bailey, O.D., pp 2317	"Inspection of a Contact Lens with a Stereomicroscope"
Dec 10	David Huang, O.D., pp 2453	"Bicurve and Tricurve Contact Lenses"
Dec 17	" " " " " "	" " " " " "

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1959 Dec 31	Allan Isen, O.D., pp 2581	"The Relationship of Edge Thickness to Center Thickness of a Contact Lens"
	Irving Filderman, O.D.	"First World Contact Lens Congress-Eye Research Foundation"
1960 Jan 14	Bernard Abrams, O.D., pp 67	"Contact Lenses and Office Management"
Jan 21	Joe B. Goldberg, O.D., pp 121	"Corneal Contact Lenses: Initial and Final Values"
Feb 11	Allan Isen, O.D., pp 269	"A Rationale for Fitting Contact Lenses"
Feb 25	Donald Hersh, O.D., pp 377	"Use of Eccentrically Ground Secondary Curve in Relief of 'Fine' Contact Lens Symptoms"
Feb 25	J. C. Sullivan, O.D., pp 379	"Office-Centered Contact Lens Adjustments"
Apr 7	Leon E. Firestone, O.D., pp 685	"This and That in Contact Lenses"
May 12	Jack Beiman, O.D., pp 963	"Personality Study of Contact Lens Patients"
May 26	Neal J. Bailey, O.D., pp 1071	"The Refractive Power of a Contact Lens"
May 26	Orlando T. Giraldi, O.D., pp 1075	"Fitting Contact Lenses for All-Day Wear"
Jun 23	Richard Gross, O.D., pp 1301	"General Considerations in the Contact Lens Laboratory"
Jun 30	Edward Kienast, O.D., pp 1347	"Contact Lens Inspection"
Jun 30	G. P. Elmstrom, O.D., pp 1350	"Trends in Contact Lens Insurance"
Jul 7	A. D. Estrich, O.D., and Ellis Paillet, O.D., pp 1408	"Hydration of Contact Lenses"
Aug 18	Robert Ullen, O.D., pp 1719	"Early Visual Development with Implications for Contact Lens Practice"
Sep 22	Robert Morrison, O.D., pp 1971	"Routine Care of the Contact Lens Patient"
Oct 27	William L. Swanson, O.D., pp 2255	"Results of Edge Contouring of Contact Lenses"
Nov 10	Jack Hale, O.D., pp 2349	"Emotional Factors in Fitting Contact Lenses"
Dec 1	Donald Korb, O.D., pp 2501	"A Preliminary Report on Toric Contact Lenses"
1961 Jan 26	Herbert Player, O.D.,	"The Contact Lens Field - A Time for Re-evaluation"
Jan 26	Leo Manas, O.D.	"Using the Functional 'K' Factor in Contact Lens Fitting"
Jan 26	Stanley Gordon, O.D.	"The Correction of Residual Astigmatism through Toric Inside Contact Lenses"

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1961	Mar 9 David Huang, O.D., pp 459	"Technique of Contact Lens Inspection"
	Mar 23 " " pp 565	"Paraseg K Inside Segment Bifocal Contact Lens"
	Mar 16 Noel Genevay, Jr., O.D., pp 515	"The Contact Lens Projection Spherometer"
	Apr 13 Norman Bier, O.D., pp 730	"The Miniscule Process in Contact Lenses"
	May 11 M. A. Wasserman, O.D., pp 934	"Contact Lens Lensometer Inspection"
	May 11 Arnold L. Longsen, O.D., pp 923	"Problems Associated with Cleaning and Hydration of Contact Lenses"
	May 18 Manuel Shpritz, O.D., pp 973	"Contact Lens Solutions - A Pharmacist's Approach"
	May 25 Billy F. Rankin, B.S., pp 1019	"Insertion, Removal, and Recentering of Corneal Contact Lenses"
	Jun 15 Harry Fagedes, O.D., pp 1199	"Problems of Patient Management and Control with Contact Lenses"
	Jun 29 Mitchell Silbert, O.D., pp 1287	"Prisms and Contact Lenses"
	Jul 20 Don Brucker, O.D., pp 1428	"Contact Lenses as a Means for Correction of Astigmatism"
	Aug 3 Herbert Weiss, O.D., pp 1511	"Office Procedure for Adding Plus and Minus Power to Contact Lenses"
	Sep 7 Joseph Marano, O.D., pp 1735	"The Influence of Physiologic Factors in Contact Lens Design"
	Sep 14 Joe B. Goldberg, O.D., pp 1785	"Contact Lens Research Needs - A Bold Look Ahead"
	Sep 21 " " pp 1843	"Eyewear - For the Contact Lens Patient"
	Oct 26 Alfred A. Rosenbloom, O.D., pp 2107	"Possible Complications in the Wearing of Contact Lenses"
	Nov 2 " " pp 2149	"The Function of the Peripheral Flange"
	Oct 19 Margaret Dowaliby, O.D., pp 2054	"A New Approach to Contact Lens Ventilation"
	Nov 9 L. Lester Beacher, O.D., pp 2197	"Contact Lens Combination Working Arbor and Inspection Adapter for Lensometer"
	Nov 16 Robert Houston, O.D., pp 2247	"Maximum Corneal Exposure - A Contact Lens Fitting Philosophy"
	Dec 7 Donald Korb, O.D., and Irving Filderman, O.D., pp 2375	"A Method of Contact Lens Fitting"
1962	Feb 8 Seymour Weissner, O.D., pp 251	"Contact Lens Practice Today"
	Feb 15 Melvin Remba, O.D., pp 285	"Physiological Factors Involved in the Fitting of Corneal Contact Lenses"
	Feb 22 " " pp 360	"Corneal Astigmatism and Corneal Lenses"
	Mar 22 Laurence Vogel, O.D., pp 533	"Comments on Myopia Control by Contact Lenses"
	Apr 12 Norman Bier, O.D., pp 685	"Remolding and Therapy of the Cornea Through the Use of Contact Lenses"
	Apr 26 Robert Ullen, O.D., pp 793	
	May 3 John Rottmann, O.D., pp 339	
	May 17 Mitchell Silbert, O.D., pp 961	
	May 24 Frank Fontana, O.D., pp 991	

<u>YEAR</u>	<u>AUTHOR</u>	<u>TITLE</u>
1962 May 31	Arene Wray, O.D., pp 1031	"Relationship Between Contact Lenses and Aniseikonia"
Jun 28	Milton Kaplan, O.D., pp 1301	"Residual Astigma and the Toric Concavity"
Jul 5	" " pp 1339	"Avoiding the Hazards and Pitfalls in Prescribing and Fitting Contact Lenses"
Jul 19	Edward Goodlaw, O.D., pp 1431	"Contact Lens Application in Four Cases of Congenital Nystagmus"
Jul 26	" " pp 1481	"Front Surface Cylindrical Contact Lenses"
Sep 13	J. R. Hale, O.D., pp 1799	"Clinical Application of Toric Base Curve Contact Lenses"
Sep 20	" " pp 1865	"Peripheral Design Considerations in Prescribing Plus-Powered Contact Lenses"
Sep 13	Joseph Marano, O.D., pp 1803	"Two Unusual Cases for Study in Contact Lens Fitting"
Sep 27	Joe B. Goldberg, O.D., pp 1911	"A Contact Lens Fitting Procedure"
Oct 4	Stanley Gordon, O.D., pp 1971	"Principles of the Contact Lens Pupilens"
Oct 11	Victor Arias, O.D., pp 2023	"Mucus Control in Contact Lens Practice"
Nov 8	Robert Ullen, O.D., pp 2225	"Principles of the Contact Lens Pupilens" (Continued)
Dec 6	Irving Filderman, O.D., pp 2389	
Nov 15	" " pp 2269	
Nov 22	Frank DeLaMater, O.D., pp 2315	
	Irving Filderman, Q.D.	

*American Optometric Association*

4030 CHOUTEAU AVENUE • ST. LOUIS, MISSOURI 63110  
OLIVE 2-1776

BIBLIOGRAPHY OF CONTACT LENS ARTICLES IN AOA JOURNAL

1962	<u>AUTHOR</u>	<u>TITLE</u>
pp.573	Bailey, Neal J., O.D., Ph.D.	"New Contact Lens Developments"
pp.578	Pheiffer, Chester H., Ph.D.	"Contact Lenses and Visual Training Complement Each Other"
pp.583	Baldwin, William R., O.D.	"Cataract Surgical Procedures and Contact Lenses"
pp. 590	Misage, Richard J., (Student)	"Changes in Corneal Curvature with Contact Lens Wear" /
pp.593	Goldberg, Joe B., O.D.	"The Fallacy of the Ophthalmometer in Contact Lens Practice"
1964		
pp. 187	Haynes, Phillip R., O.D.	"Custom Fitting Procedures for Prescribing Corneal Contact Lenses"
pp. 215	Goldberg, Joe B., O.D.	"A Commentary on Fitting Small Size Corneal Contact Lenses"

Senator WILLIAMS. This is not really germane to anything but I was curious. If the plastic has superior qualities why don't you use plastic in the spectacle lens?

Dr. NEILL. Plastic is being used a good deal in spectacle lenses today. It has a number of advantages. One, is its lack of breakability and two, its extreme lightness, only 40 percent as much as glass, but it has one very great disadvantage. When it is used in a pair of spectacles it scratches very easily. The slightest dirt on a lens, if you wipe it off, unless you flushed it off first with water, you would probably scratch the lens. As a result of that people wearing plastic spectacle lenses usually have to have them replaced every 6 months to a year.

Senator WILLIAMS. I thought I heard you say that there is a national board of examiners for optometrists.

Dr. NEILL. That is correct.

Senator WILLIAMS. This is the only profession where that prevails; isn't it? I can't think of any other.

Dr. NEILL. No; the medical profession has it.

Senator WILLIAMS. A national board?

Dr. NEILL. Yes.

Senator WILLIAMS. For general practice?

Dr. NEILL. Yes; and in the specialties.

Senator WILLIAMS. Not this fellow program for the specialties?

Dr. NEILL. No.

Senator WILLIAMS. National board?

Dr. NUROCK. National Board of Examiners in Medicine. I believe at the present time 40 States accept successful candidates of the national board. If they pass the national board they are given a license by the State board of the individual States of those 40 States simply by endorsement. New Jersey happens to be one of those States.

Senator WILLIAMS. But then to get at the illegal practitioner it has to come—this is for the medical profession—the companion regulation or law. Is it at the State level that makes it illegal to practice medicine without a license?

Dr. NUROCK. Yes.

Senator WILLIAMS. You don't have anything clearly analogous in optometry do you?

Dr. POSTER. Yes.

Senator WILLIAMS. You do?

Dr. NUROCK. I did not get your question, Senator, exactly.

Senator WILLIAMS. You have national boards for the examination of medical doctors; right?

Dr. NUROCK. Yes.

Senator WILLIAMS. Many States accept this in lieu of a State examiner.

Dr. NUROCK. Yes.

Senator WILLIAMS. But all doctors must take the national examination.

Dr. NUROCK. No.

Senator WILLIAMS. They don't?

Dr. NUROCK. No; it is elective.

Senator WILLIAMS. Elective by States?

Dr. NUROCK. No; it is elective by the individual whether or not he wants to take the national board examination and it is elective by

States whether or not they want to accept the results of the national board examinations. Does that clarify it?

Senator WILLIAMS. Yes.

But in medicine every State more clearly defines the illegality of practicing medicine without a license?

Dr. NUROCK. No.

Senator WILLIAMS. They don't?

Dr. NUROCK. No; you mean more than the optometry laws?

Senator WILLIAMS. Well, I would compare it to practicing law without a license. We are pretty well defined aren't we, Senator Keating, in most of our States as to what can be done and what cannot be done without a lawyer's license?

Senator KEATING. Yes; I think so.

Dr. NUROCK. Well, I would like to point out, Senator Williams that in my statement if I ever do get to it—if not I will make the statement now—that it so happens that in the State of New Jersey the requirements for licensure of an optometrist and the standards that he has to adhere to are higher in the optometry law of New Jersey than any of the other laws, including medicine, much higher than the medical legal standards. In fact, as far as I have been able to ascertain our standards are higher than any of the professions in any of the States.

Senator WILLIAMS. Notwithstanding that there are still people dealing with vision and administering to the visual needs of the people who are guilty of the practices we have been discussing, even in New Jersey?

Dr. NUROCK. Well, I will bring you up to date because I know you have been very busy down here. On just March 20, the appellate court sustained our board in an action against an optician—and we have five more cases pending—he was fitting contact lenses in collusion with ophthalmologists who were sending prescriptions to him—I should not say to him—to these opticians because there were five cases. Now we won this in the Morris County district court. It was appealed to the appellate division and we were sustained, as I said before, on March 20, so that as of now the appellate court has said that in the State of New Jersey no one but an optometrist or a qualified eye physician may fit contact lenses, and I am hopeful that the other States will get the same kind of legislation.

Senator WILLIAMS. We had in the Sunday paper yesterday—now that was the District of Columbia—evidently that same protection does not prevail here because you said that people in your profession would not be in that assembly line practice that is advertised in this way. Do you recall that?

Dr. NUROCK. No; I don't think we said that. We said that people in our profession who were members of the American Optometric Association would not be associated with that type of thing. Unfortunately the laws in the District of Columbia are very lax.

Senator WILLIAMS. That is what I was coming to. That was my point.

Dr. NUROCK. It is a very important point and I am glad you brought it up. I am hopeful something will be done about this because here either physician's or optometrists may be in those types of establishments.



Dr. CHAPMAN. Senator, I would like to point out another salient difference in thinking and philosophy between optometry and medicine regarding this matter of contact lenses. There is a very definite feeling on the part of ophthalmologists that the actual fitting of contact lenses is permissible in the offices of opticians. In a great bulk of the cases of ophthalmological lens fittings, the actual fitting of the lens itself is done in the optician's establishment. This is not consistent with the philosophy of my profession as regards the handling of contact lenses. Dr. Poster pointed out in his presentation, as did Dr. Neill, that we believe this act can only be done by a trained professional and should not be put into the hands of the lay person. This is a marked philosophical difference which exists between the groups.

Senator WILLIAMS. When you say "lay person," does the optician in this area become a layman?

Mr. CHAPMAN. He does, Senator, because there is no formal training whatsoever or direction in this field for the optician outside of that which he is able to secure through various methods of self-education that might be available to him. I think this is a very significant point. Much of the concern which we have in this matter of contact lenses is evidenced in Dr. Neill's presentation as he indicated the number of his patients who had been poorly fitted by lay opticians.

Senator KEATING. Dr. Poster, what is the situation in the State of New York?

Dr. POSTER. In the State of New York, Senator Keating, the legislature passed a bill a number of years ago that an optician may fit contact lenses only under personal supervision, which has been interpreted by legal counsel of the State education department to mean on the premises of. Now, we have been very unhappy in the State of New York on legislation that was introduced this past session wherein opticianary, and it is our understanding the field of ophthalmology, have backed legislation to reduce this type of safeguard to the public in our own State such that "personal supervision" would be changed to "supervision" which would mean the written prescription and the fitting be done in other than the professional man's office where a patient would be fitted with contact lenses. Fortunately, the good legislature saw fit not to pass or change the ruling and type of law that we have at the present moment and sustained optometry's position.

Senator KEATING. So that as of now the contact lenses can only be fitted in an optician's place of business?

Dr. POSTER. No; only in an office where an optometrist or an ophthalmologist is present.

Senator KEATING. Suppose there is an ophthalmologist right there?

Dr. POSTER. If he is there present during the time, then it is legal.

Senator KEATING. Then to complete my question, the only time under present law when the contact lens could be fitted at the place of business of an optician would be if there was an ophthalmologist or an optometrist present on the premises and participating in the fitting?

Dr. POSTER. Correct, sir.

Senator KEATING. And in fact, most of the fittings take place, do they, in the place of business or the office of an ophthalmologist or an optometrist?

Dr. POSTER. Well, this is the way we would like it. Unfortunately there are a number of cases, and one in particular which is in the court of appeals in New York State, wherein the State has taken action to regulate the situation much better. Enforcement becomes a real difficult problem on the State level and this is where we very often might run into some problems.

Senator KEATING. Well, how big a problem is it? Under existing law in New York how many people do you think had their contact lenses fitted in an optician's office without any qualified person there?

Dr. POSTER. On a written prescription, I would presume somewhere around 15-20 percent of the public, which is a considerable size.

Senator KEATING. They simply go there with a prescription and then the optician would do the fitting?

Dr. POSTER. Would do the fittings, checkups, everything involved. Very often the optician will send the patient back to the optometrist or ophthalmologist. Unfortunately, most problems arise within the first 8 hours of fitting a patient with contact lenses. This is the most difficult period of adaptation. During this period the ophthalmologist or optometrist would not see the patient, in most instances, so that even though this is circumventing the law it is even more detrimental to the public welfare from my professional point of view.

Senator KEATING. Do you wear contact lenses?

Dr. POSTER. No. Fortunately I don't wear glasses or contact lenses. As someone said, maybe I should not be in the field.

Senator WILLIAMS. I subscribe to that, Doctor.

Does a criminal lawyer have to go dabbling in crime occasionally?

Senator KEATING. I am just phrasing the questions. I thought it was interesting. Does this gentleman, the other one without glasses, wear contact lenses?

Dr. BALDWIN. I must confess that I don't.

Senator WILLIAMS. So that of all these representatives of the association, seven in number, five are wearing glasses; none of them wear contact lenses. Why is that, Dr. Poster?

Dr. CHAPMAN. Senator, I think there is a very plausible answer to it. Certainly I would speak for myself and knowing these gentlemen well I would say the same. There has to be a basic reason for the wearing of contact lenses and I am sure there is. I won't go into all these reasons.

Senator KEATING. I know what it is with the girls.

Dr. CHAPMAN. Yes; in some instances the same is true with men.

Senator KEATING. My daughter wears them and she got a man and then went back to wearing glasses.

Dr. CHAPMAN. My wife got me without them and afterward she let me fit her with contact lenses and she has been wearing them for years. Motivation, desire, and need are the important factor in successful wearing of contact lenses. I am perfectly happy with these glasses which I use as they serve every purpose that I need to have served, and I think that is generally true of the great bulk of people.

Senator KEATING. Are more people all the time getting contact lenses?

Dr. CHAPMAN. Very definitely more, yes.

Senator KEATING. In other words, their use is on the increase?

Dr. CHAPMAN. Yes; there is no question about that. Rather remarkably so. It is not all cosmetic and it is not all vanity. We have

a great number of people who desperately need this type of care for other reasons.

Senator KEATING. Is there any age limit?

Dr. CHAPMAN. We do have two doctors in the audience, Dr. King of Washington, D.C.—and I am not able to read the other name, I am sorry—who are wearing contact lenses now.

Dr. BALDWIN. May I say I am fitting my 10-year-old daughter at the present time with contact lenses.

Senator KEATING. I imagine it would be difficult with young children.

Dr. CHAPMAN. Not really, Senator Keating. In progressive myopia among younger people, this gets a bit scientific, there is every reason to believe and there are statistics to prove or at least validate the general premise that we can in many cases control the progression of myopia by the application of a contact lens at an early age. This is a fascinating thing about the lenses, one of many fascinating things about them. We have other comments which we can expand into as we proceed with these presentations.

Senator KEATING. Is there an age limit; that is, an age beyond which it is not feasible to use contact lenses?

Dr. CHAPMAN. Not from an age standpoint, no, sir, Senator.

Senator WILLIAMS. As a matter of fact, earlier it was described how older people, particularly those who have had cataracts removed, can with contact lenses have very good vision but with spectacles they just can't.

Dr. CHAPMAN. This is an area which is so exciting to us as optometrists that I suppose we would spend all of your time the rest of the week on the subject.

Senator KEATING. If we are going to spend all the time on one single subject that's all right with me.

Dr. CHAPMAN. The fascinating thing goes a bit further. In the case of subnormal vision in which we spend a great deal of time caring for the person who is partially sighted there are ways by which the combination of a contact lens with a spectacle device can produce marvelous magnification of a damaged eye and thus producing in certain instances sight, which could not be produced by any other method.

Senator KEATING. I have seen people who have had a cataract operation who have what is apparently an enlarged pupil of the eye. They use these glasses apparently.

Dr. CHAPMAN. Yes.

Senator KEATING. Do the contact lenses on such an eye do that?

Dr. CHAPMAN. No, sir. No, that is one we covered this morning in Dr. McCrary's presentation where it was shown that the application of a contact lens eliminates the magnified appearance, the weight, and the narrowing of the field of vision. It is a marvelous method of providing good, adequate, efficient vision to people who have had cataract surgery.

Senator KEATING. Do most of the companies that manufacture eyeglasses also manufacture contact lenses?

Dr. CHAPMAN. No, sir.

Senator KEATING. It has been specialized?

Dr. CHAPMAN. Yes, specialized. There are over 200 contact-lens manufacturers in the country. As long as 8 to 10 years ago there were probably only 15 or 20. Dr. Neill, is that right?

Senator KEATING. Do they bring in contact lenses from foreign countries?

Dr. CHAPMAN. Yes, I suppose they do, but not many. I was going to say that Germany and the German people have done quite a lot in the research and development of contact lenses.

Senator KEATING. There is quite an importation of regular lenses.

Dr. CHAPMAN. Yes, sir; there is quite a lot of that but no contact lenses to any great degree that I am aware of.

Senator KEATING. How long does it take to get used to bifocals?

Dr. CHAPMAN. Contact lenses?

Senator KEATING. No. I might as well get a little free advice here.

Dr. CHAPMAN. If you were properly fitted by an optometrist, Senator Keating, I would guess 15 or 20 minutes.

Senator KEATING. I thought you stumbled all over yourself the first day or two.

Dr. CHAPMAN. No, sir; you should not stumble all over yourself. There is a learning period, of course.

Senator KEATING. What about trifocals?

Dr. CHAPMAN. They are even easier than the bifocal lens.

Senator KEATING. Do you recommend them?

Dr. CHAPMAN. Very highly if you need them, but, of course, you don't automatically say you need trifocals for every patient. They are valuable to a great segment of the population. It is a fascinating lens. Are you familiar with it?

Senator KEATING. I have seen them.

Dr. CHAPMAN. It is simply a matter of trying to provide three areas of good vision in one glass. As your desk, for example, if you wanted to peruse something 2 or 3 feet away and at the same time record something on a piece of paper up close, you couldn't do it with a bifocal lens very well. Therefore, you would need three; one designed for distance, one designed for intermediate, and the other designed for reading. It is perhaps the easiest multifocal lens of all to wear.

Senator KEATING. Is it better to do that or to have two or three different kinds of glasses if you need them and switch from one to another.

Dr. CHAPMAN. No, the one pair is by far the better device. Of course, you cannot take care of all vision problems with even that. If you are a golfer or do other things as hobbies, they require a series of glasses actually designed specifically to do these tasks properly.

Senator KEATING. How often should you change your glasses when you are over 50?

Dr. CHAPMAN. How often should you change them? There is no specific time.

Senator KEATING. I mean how often should you go.

Dr. CHAPMAN. At least every year.

Senator KEATING. What happens if you go 5 years and you can read pretty well—

Dr. CHAPMAN. Well, that's fine but the significant thing here is not so much that you are able to still read well but that there may be things occurring within your eye which does not show itself as a symptom of

vision and does not become aware to you as an individual as a symptom. There are things that can be happening inside of the eyes that need very careful attention and observance.

Senator KEATING. Would that not be reflected in headaches?

Dr. CHAPMAN. Not necessarily, no.

Senator KEATING. You can really injure your eyes if you don't have the right kind of glasses?

Dr. CHAPMAN. I think so. I mean this is a bit touchy, this matter of injury. Whether there is a full injury to the physical components of the eye, I don't think you would go quite so far. All the other things that go with improperly fitted lenses or lenses that are too old actually is the alertness to the general physical condition of that eye, and these are things that can only be determined by examination annually.

Senator KEATING. Is there anybody who goes every year?

Dr. CHAPMAN. The great bulk of my patients return every year; yes, sir, and I think that is proper because I see that they do.

Senator KEATING. Well, that's fine.

Dr. CHAPMAN. Yes, sir. Well, now, if I have indicated that I change the lenses each year, no I do not.

Senator KEATING. No, I understand that, but they really do come back every year to have you look at their eyes.

Dr. CHAPMAN. Yes.

Senator KEATING. Are they all retired? You live in Florida. Perhaps your patients are retired and they don't have anything else to do. Can you get the busy people back every year?

Dr. CHAPMAN. Well, I am awfully pleased that I happen to live in a city which is only 18 miles below the Georgia line and we do not have any retirees down there.

Senator KEATING. It has been interesting to get a little of this information. I appreciate it.

Dr. CHAPMAN. You see that, of course, in essence is one of the prime reasons for the concern we have in this matter of spectacles sold across the counter or by the mail because the tragedy is in the patient who utilizes these devices to see more magnified as the sign says but without any care and without any observance of what the condition of that eye might be, reach the point when the magnifiers don't work any more and then it comes time to be examined and it is too late to do anything about it. That is the tragedy and that is why we so strongly deplore this type of performance.

Senator KEATING. This lady to whom I referred has regular glasses that she wears but when she wants to read better, as she puts it, she reaches into her pocket and gets out these 99-cent glasses; I suppose it magnifies more.

Dr. CHAPMAN. Yes, sir; it does nothing more than that. Of course, it magnifies. Those lenses she is wearing are the same power on both sides and she does not know if the two eyes are the same.

Senator KEATING. That is true.

Dr. CHAPMAN. That may be so, she may only be seeing with one eye through the glasses and not getting binocular vision at all.

Senator KEATING. In most glasses are the two lenses different or the same?

Dr. CHAPMAN. In most glasses they are different and even more fascinating than that is in wearing those lenses, as you have suggested she does, I wonder where her eyes are in her head as regards the pupil and does she look anywhere near the center of those lenses? If she does not, she injects into the nerve what we call prismatic effect which is horribly uncomfortable. Not damaging in the sense of injury but a very uncomfortable arrangement to see through because the eye muscles themselves are pulled and torn about by the utilization of lenses which are not centered for her eye.

Again, this is another significant point. We can go on and on.

Senator KEATING. I told her she was foolish to do it and I have a little backing for it now.

Dr. CHAPMAN. Senator Williams, I would like, if I may, in continuing these presentations to introduce Dr. William Baldwin, dean of the College of Optometry at Pacific University, Forest Grove, Oreg. He is a contact lens writer. He has a book on the subject.

#### **STATEMENT OF WILLIAM R. BALDWIN, DEAN OF THE COLLEGE OF OPTOMETRY, PACIFIC UNIVERSITY, FOREST GROVE, OREG.**

Dr. BALDWIN. My name is William Baldwin. I am an optometrist and serve as dean of the College of Optometry, Pacific University, Forest Grove, Oreg.

I am pleased to have this opportunity to appear before this body and commend Senator Williams, Senators Neuberger and Morse of my own State, and the members of the committee for their interest in the problems of the elderly.

Vision is truly one of man's most precious gifts. All of us have the responsibility to treat this gift with the care which it deserves. Those of us who, because of our chosen careers dedicate ourselves to better vision, acutely recognize our awesome responsibility to train ourselves sufficiently to protect and enhance this cherished gift.

As in other fields, the body of knowledge of optometry has evolved from humble beginnings. Today there are 10 schools of optometry which conduct a course of study to give optometrists the minimum educational training necessary and granting professional degrees in optometry. Five of these schools are divisions of universities and five are nonaffiliated accredited schools. The minimum requirement for admission to these professional programs is 2 years of successful college work, although approximately 35 percent of those who enter an optometry school have acquired a bachelor's degree and 60 percent have at least 3 years of undergraduate work.

The shortest professional program currently in existence is 3 years preceded by 2 collegiate years of preprofessional training. The present trend is toward a 6-year program combining preprofessional and professional education. Ohio State University School of Optometry within the last 3 months became the fourth institution to adopt a 6-year program. All of the university-affiliated schools and colleges of optometry also offer graduate programs preparing teachers and researchers in the field of visual science.

Because the incidence of eye disease is higher among older persons, it is necessary that the person examining them be qualified to recognize pathology of the eye. Optometrists, of course, do not treat eye disease,

but the optometrists graduating from our schools of optometry throughout the Nation have been well trained to recognize these diseases so they can refer them to medical specialists.

Many persons do not know they have an eye disease until the condition is discovered during a routine eye examination. Since approximately 70 percent of the optical devices used in this country are prescribed by optometrists, much eye disease would go undetected if the optometrist were not trained to recognize it.

It is imperative, therefore, that optometrists have a knowledge of both normal and abnormal structure and function. They must have the ability to conduct an adequate visual examination and analysis of visual needs. They must understand the fundamental laws of light, lenses, and prisms and their application to vision. They must study the relationship of psychology to the visual process and to the care of their patients. In addition, they must have the mechanical ability to fit and adjust the optical device to the eye for maximum comfort and best vision.

Upon graduation and in order to qualify for licensing the optometrist must pass comprehensive clinical and written examinations as required by law in each of the 50 States to prove proficiency in each of the above areas. Optometry, through its various State and National organizations and through its colleges, offers extensive postgraduate instruction in all aspects of visual science, but giving particular emphasis to the various clinical applications. Optometrists in practice also have the obligation to review the extensive periodical literature of visual science.

My specific mission here today is to give testimony concerning education and training of optometry students. Most students who choose optometry as a career demonstrate special interest and aptitude in the sciences. All take courses such as biology, chemistry, physics, and mathematics in their early college years.

All schools and colleges of optometry also require courses in human anatomy, human physiology, general pathology, and statistics. Each requires additional courses in the biological and behavioral sciences such as bacteriology, microbiology, genetics, embryology, neurology, physiological psychology, et cetera. Virtually all students of optometry have more than 80 academic semester hours of standard university level science courses before entering their final (clinical) year.

Because optometrists are prescribing and fitting most of the contact lenses in this country, extensive undergraduate training in this field is given high priority. This training may be divided into three categories:

1. Optics—optometry students study physical optics, geometric optics, mechanical optics, and have special courses in applied optics of contact lenses, spectacle lenses, and in the optics of instruments. The first book in the subject of the optics of contact lenses was written by an optometrist.

2. Structure and physiology of the anterior segment of the eye—all optometry students study ocular anatomy, the physiology of the visual apparatus, ocular pathology, and the relationships between a contact lens and physiological function of the eye.

Optometric schools at Indiana University, Ohio State University, and the University of California have pioneered in studies of the effect of contact lenses upon such physiological functions as metabolism, temperature, carbon dioxide buildup, and corneal curvature change.

3. Experience in fitting contact lenses: Optometry students gain routine experience in fitting contact lenses in their final, that is, their clinical year, of study. Each is responsible for from 6 to 30 patients whom he handles under direct supervision, and each is further exposed to additional demonstration patients. The faculty personnel responsible for this area of instruction have generally demonstrated competence by doing research and writing. Four of them have authored textbooks on contact lenses. In addition, the students in each school learn to fabricate and modify contact lenses.

In my opinion, an impartial evaluation of courses of instruction would reveal that optometry students receive training in visual science generally, and in contact lenses particularly, which is superior to that in any other field.

The National Board of Examiners in Optometry as well as each State board requires that each successful applicant demonstrate proficiency in contact lens fitting.

Practicing optometrists have ample opportunity to keep current in the contact lens field by reading optometric literature and by attending postgraduate courses.

From 1957 to 1962, at Indiana University alone more than 200 practicing optometrists attended intensive postgraduate courses of 40 clock hours each to gain increased competence in fitting and in understanding basic principles of contact lenses. One out of every twelve issues of the *Journal of the American Optometric Association* is devoted to contact lenses. I am leaving a copy of the latest issue for the files of your committee.

I am presenting this committee also with "The Encyclopedia of Contact Lens Practice." A study of its contents will give ample evidence that contact lens procedures are quite complex and too important to entrust to any one other than those who are educated, trained, and certified by examination and license for service in the contact lens field.

Optometrists are fitting most of the contact lenses in this country. It is my opinion that not only has this profession earned a place in contact lens practice, its place is preeminent because it is meeting the needs for education and research and has developed the most significant literature in the field. We have brought along some samples of this literature which we thought might be helpful to the committee in its work. Optometrists have been in the past and will in the future be in the forefront of the development, prescribing, fitting, and adjustment of contact lenses. Optometrists have participated in almost every important advance in contact lenses.

Those concerned with the public interest as it is related to the prescribing and fitting of contact lenses should, in my opinion, work diligently to see that the following criteria for excellence in contact lens care are fulfilled:

1. Concern for the patients' interests above concern for profit.



2. Professional dedication to furthering knowledge and refining techniques on the part of practitioners.

3. High standards for contact lens materials.

4. Restriction of the prescribing and fitting of contact lenses to optometrists and physicians who are trained especially in contact lenses and who do their own work.

Fulfillment of these criteria will enable the American people to take advantage of the benefits of contact lenses with full confidence. The public deserves no less.

Mr. Chairman, it has been a pleasure and a privilege to appear before you. If I can be of any service to you at any time in your investigations or deliberations, I hope you will not hesitate to call upon me.

Thank you.

I commend Senator Williams for his interest in optometric education. Ours is a young profession and we are growing both in quantity and quality. We need to grow more in both.

Senator Williams has supported two optometry acts, one of which has passed, and for that we are very grateful. The Health Professions' Educational Assistance Act now includes optometry. This will be a great boon to optometric education.

We need very badly to persuade more bright young students to enter optometry as a profession and hope that we receive satisfactory consideration on the optometric student loan legislation (S. 2180).

Senator WILLIAMS. We are stalled on that because the Labor and Public Welfare Committee cannot meet until the civil rights debate is over. We are unique as a special committee: We do not require unanimous consent to meet. We have been promised sympathetic consideration by the chairman of the committee.

Dr. BALDWIN. I appreciate your interest in this.

My principal mission here was to outline optometric education, particularly as it is concerned with contact lenses instruction. Let me simply say that the student learns in preoptometry things that are necessary in contact lens prescribing and fitting. He is required to pass examinations that involve knowledge of contact lenses in order to receive licensure in every State in the Union.

Optometrists are encouraged and most take advantage of the opportunity to pursue their knowledge in the field of contact lenses and to update the knowledge required in school through postgraduate course seminars and through extensive literature in the field.

Let me for this record simply describe what seemed to me to be the three phases of undergraduate education that are most concerned with contact lenses.

Senator WILLIAMS. We are appreciative, too, of your help not only in this field or this area but of the students' program. We certainly will help you when we get to that and into the other committee.

Now, Doctor, who is next?

Dr. CHAPMAN. Dr. E. C. Nurock, of Trenton, N.J., secretary of the New Jersey State Board of Examiners.

Senator WILLIAMS. Is he the anchorman?

Dr. CHAPMAN. No; Mr. MacCracken, our attorney, is our anchorman.

Senator WILLIAMS. You may proceed, Dr. Nurock.

**STATEMENT OF E. C. NUROCK, O.D., CHAIRMAN, ADVISORY LAW COMMITTEE, INTERNATIONAL ASSOCIATION OF BOARDS OF EXAMINERS IN OPTOMETRY**

Dr. NUROCK. Mr. Chairman, I must start out by stating I am very proud to have Senator Williams as our Senator from New Jersey. As all optometrists know, he has been just tremendous in his help to us on just about anything that has to do with the welfare of the eyes for the people of this country.

Senator Williams, I can't thank you enough for your cooperation.

Senator WILLIAMS. I can't tell you how much I appreciate that.

(Text continues on p. 478.)

**PREPARED STATEMENT OF E. C. NUROCK, O.D.**

My name is Emanuel C. Nurock. I am a doctor of optometry, licensed to practice in the State of New Jersey since 1927. My office is located in Trenton, N.J. I am secretary-treasurer of the New Jersey State Board of Optometrists, a position I have held for more than 14 years, having been twice appointed by Gov. Alfred Driscoll, three times by Gov. Robert B. Meyner, and once by Gov. Richard J. Hughes.

I am a past president of the New Jersey Optometric Association and the International Association of Boards of Examiners in Optometry. At the present time, I am also president-elect of the New Jersey chapter of the American Academy of Optometry, a member of the Executive Council of the IAB and, for several years, I have been chairman of the IAB Advisory Law Committee, and I am appearing here in that capacity today.

I am grateful to the chairman and to the members of this committee for the opportunity to be with you. The responsibility of the State boards of optometry is to protect the public health and welfare in the field of eye care and our interests have always been, and will continue to be, directed toward that end. The elderly are ready prey for the charlatans who haven't the slightest compunction about taking advantage of the gullibility of persons requiring eye care to make a quick profit.

To protect the public against these unscrupulous persons, each of the 50 States and the District of Columbia now has licensing laws to make certain that those prescribing eye care meet qualifications of competence and character. Through the efforts of its leaders and the dedication of its practitioners to the public interest, optometry has become recognized as a leading member of the health professions.

The first law licensing optometrists was enacted in Minnesota in 1901. My own State of New Jersey passed its optometry law in 1914. Our law has been amended many times and the standards of practice now required by act of our legislature are higher than those of any other profession in the State, and, as far as I have been able to ascertain, higher than those of any profession in all of the 50 States.

In a matter heard in the Appellate Division of the Superior Court of New Jersey, the *New Jersey State Board of Optometry v. Hilda Koenigsberg*, Judge Francis, in referring to the progress of optometry in New Jersey, stated, "The history of this legislation portrays a progressively broader concept of optometrical activities. When the act was adopted in 1914, the practice was defined to be 'the employment of any means, other than the use of drugs, for the measurement of the powers of vision and the adaptation of lenses for the aid thereof' (L. 1914, ch. 222, sec. 1). In 1919, the definition was amended to be 'the employment of objective and subjective means for the examination of the human eye for the purpose of ascertaining any departure from the normal, measuring its powers of vision, and adapting lenses for the aid thereof' (L. 1919, ch. 59, sec. 1)."

In 1923, an amendment was enacted to bar employees or students of an optometrist from practicing or attempting to practice optometry. This removed the use of technicians or untrained persons who did not meet the educational and other requirements enacted by the legislature and who did not pass the rigid examinations given by the State board.

In subsequent years, the New Jersey optometry law was amended to prohibit all commercialism, such as neon signs, the display of glasses, advertising, corporate practice, practice in a mercantile establishment, etc. Herein, Mr. Chairman, most of the cases of fraud and misrepresentations in the vision care field have their seed. All States should adopt similar legislation.

In the matter of *Abelsons, Inc. v. N.J. State Board of Optometrists* (5 N.J. 412, 418 (1950)), Justice Heber, speaking for our supreme court, in sustaining the constitutionality of regulatory enactments, pointed out that "optometry is not a mere trade or craft; rather it is 'an applied branch of the science of physiological optics, directed to the improvement of visual acuity through the correction of refractive errors.' Thus, the practice of optometry is subject to regulation for the protection of the public against ignorance, incapacity, deception, and fraud, equally with the practice of ophthalmology and other learned professions" (id., at p. 419).

In 1955, the New Jersey State Board of Optometrists promulgated a rule requiring the following minimum examination before prescribing for a patient:

1. Complete history.
2. Naked visual acuity.
3. Detailed report of the external findings.
4. Ophthalmoscopic examination (media, fundus, blood vessels, disc).
5. Corneal curvature measurements (dioptral).
6. Static retinoscopy.
7. Amplitude of convergence and accommodation.
8. Phoria and duction findings; horizontal and vertical, distance and near.
9. Subjective findings.
10. Fusion.
11. Stereopsis.
12. Color vision.
13. Visual fields (confrontation).
14. Visual fields, central (after age 40).
15. Prescription given and visual acuity obtained.

Again, these are the highest legal standards of practice established for any profession, and if a person providing vision services adheres to these standards, the public will get the quality of service to which it is entitled.

In the matter of *Albert Weston and Lionel Weston v. the New Jersey State Board of Optometrists*, Justice Schettino of the New Jersey Supreme Court in sustaining the validity of this rule stated, "When the legislature undertook to regulate the practice of optometry it undoubtedly did so in recognition of the specific public interest involved in the treatment of the human eye."

Because of the greater changes that occur in the elderly, they are the group most in need of vision care and are usually the least able to pay for health care and services that may be inferior and are often worthless. Our optometry law and our State board make every effort to give the elderly and the general public the protection they deserve.

The problem of the improper fitting of contact lenses by untrained persons is a serious threat to all age groups. Most recently, contact lenses have become an invaluable aid for patients who have been operated on for cataracts. In these cases, were are concerned mostly with the aged.

In New Jersey we protect the public and the elderly by providing the highest standards of vision care. We do not permit "quickie" examinations. Contact lens practice in optometric offices is also carefully controlled and, when all details are performed by professionally trained persons, there is very little danger that any difficulties will occur.

Recently a statement was made by William Stone, Jr., M.D., that he had traced 14 cases of blindness or near blindness due to acid being released into the eye from plastic contact lenses.

After careful studies by qualified chemists, statements have since been issued by the plastic contact lens manufacturers that this is impossible. There is, in some cases, an infinitesimal amount of acid that could remain in the processed contact lens, but in no way could it be released to injure the eye.

Dr. Stone's statement could be compared to saying that it is unsafe to drink water because of its hydrogen content.

The State boards have always agreed that contact lenses should be prescribed and fitted only by optometrists and qualified physicians. No part of this practice should be delegated to the untrained and unlicensed so-called contact lens fitter. Contact lenses are safe if:

1. They are fitted by professionally trained optometrists or qualified physicians.
2. Periodic checkups are made.
3. Hygienic procedures are followed.
4. Careful instructions are given and followed.
5. High-quality lenses are used.

There are literally thousands of patients who cannot be helped with conventional eyeglasses, but are enabled to see with contact lenses. There are numerous cases of eyes that have been saved by wearing contact lenses. Physicians in every State should be legally required to either qualify themselves to fit contact lenses or to refer them to optometrists or qualified physicians who are professionally trained to do this work. This is the law in New Jersey and we feel it should be the law in every State.

Optometrists have shown ever-increasing interest in the use of contact lenses in their practices and have been quite instrumental in the development of contact lens fitting and manufacturing as it exists today.

Applicants for examination by the New Jersey State Board of Optometrists must have at least 5 years of college training and, in most instances, applicants have at least 6 years; 2 years of preoptometry and 4 years in an approved college of optometry. They must have received complete training, both didactic and practical, in physiological optics, geometric optics, ocular anatomy and pathology, general anatomy, diagnosis of ocular pathology, vision training, refraction, subnormal vision practice, contact lenses, ocular histopathology, physiology, psychology, general human anatomy, etc.

Before being licensed by the board, they must pass rigid State board examinations, covering all of the above subjects and must demonstrate their proficiency in refraction, vision training, visual field studies, subnormal vision, contact lens practice, and diagnosis of ocular pathology.

Laymen who have not received this type of training are simply not qualified to fit contact lenses. An interesting point to illustrate this is that malpractice liability insurance rates for opticians (that is, laymen) are 50 percent higher than for optometrists, according to insurance specialists. There have also been considerably more losses of lenses fitted by opticians than of those fitted by optometrists, indicating improper fittings. In an article entitled "Some Observations About Contact Lens Fitting by Technicians," Arthur Schwartz, a contact lens insurance specialist, said, "In the area of insurance against the loss or damage of contact lenses, there have been demonstrably greater losses of lenses among optician-fitted patients. The lenses so lost are more frequently lost in circumstances which indicate shortcomings in techniques of fitting \* \* \*."

He continued, "There is an interesting relationship between the rates charged optometrists and those charged opticians for malpractice liability insurance. The optometrist bears a heavy professional responsibility in refraction, visual training, recognition of trauma and pathology, as well as in contact lens fitting. He exercises this responsibility, for which he is thoroughly trained, examined, and State-licensed without supervision, or the need therefor \* \* \*."

These facts demonstrate the importance of States insisting that only properly trained and licensed professionals fit contact lenses.

We had a case in New Jersey—and there have been similar cases in other States—where a layman, whose entire formal training consisted of a 2-week course, was fitting patients for contact lenses.

(I am appending, for the committee's information, some various decisions which I believe are pertinent to this discussion.)

In the State of New Jersey, no one may fit contact lenses except an optometrist or a specially qualified physician. We feel this type of restriction is essential to afford the public adequate protection and we commend it to the attention of the legislatures of other States for their consideration and adoption.

Another important problem is the sale of readymade glasses, both through the mail and in stores. Advertisements by the purveyors of readymade glasses are misleading and are "bait," particularly to the elderly and especially to those who feel they must look for a bargain. Too often it results in a costly bargain.

In most instances, readymade glasses are offered for sale based upon the person's age, sometimes the sex is also requested. In many advertisements it is stated that these glasses will relieve fatigue and eyestrain, prevent squinting and make it easier to see small print. There can be no assurance that these glasses will accomplish any of these things and, in fact, they very often cause eyestrain, fatigue, and squinting and make reading more difficult.

A study made by an impartial organization disclosed that in more than 80 percent of the people there was a difference in the two eyes. Since readymade glasses have both lenses of the same strength of focus they could cause more discomfort and strain than without them. Age is only one factor in determining the prescription necessary for a patient and, in fact, is of very little importance. The sellers of glasses by mail seem to use age as the only basis for determining the lenses to be prescribed.

The sale of readymade glasses to an uninformed and gullible public is an evil which all professional and lay organizations in the eye health and vision care fields agree should be completely eliminated without delay. The specious argument that these glasses cannot harm one's vision or that poor people will be deprived of reading glasses is simply not true.

Vision problems, ocular and general disease, unfortunately increase with added years and are most prevalent among those who are most inclined to purchase readymade or so-called "grandmother" glasses. A great number of conditions, both ocular and general, can cause a decrease in vision. These causes can only be discovered by a professional examination. Some conditions can cause total loss of sight or even loss of life if not discovered in their early stages. Delay in seeking professional care and false reassurance caused by a possible increase in vision by using these magnifying spectacles is sufficient cause to eliminate their sale to protect an unwary public. Vision care is not a costly item by any standards and is well within the financial resources of virtually everyone. As professional men, we have great concern for persons in financial need, and it is incumbent upon us to provide eye care regardless of a person's ability to pay for our services.

There are also numerous civic organizations, State and municipal agencies that will readily render assistance in needy cases. In New Jersey in order to insure that no person in the State will go without adequate vision care for want of funds, all 11 of the local optometric societies, covering every area of the State, have a standing policy to provide services and eyeglasses without charge. No embarrassing means test is required; just a simple statement or request from any professional man, nurse, clergyman, or public official will suffice to obtain immediate attention of the highest caliber in a private office.

An amendment to the optometry act (S. 202) is now before the New Jersey Legislature which would prohibit the sale of readymade glasses in our State. We are hopeful that it will be favorably acted upon by the legislature and the Governor. We hope that other States will also enact this legislation. This is of real importance to the aged.

Dr. NUROCK. I want to mention one more thing in the area of readymade glasses. We take the same position that has been spelled out here before and I want to point out that we now have in the legislature in New Jersey a bill in the senate, S. 202, which will prohibit the sale of readymade glasses in New Jersey. I am hopeful that this will be passed this year and signed by the Governor and, if it is, that the other States will follow.

Senator WILLIAMS. How would you reach the out-of-stater who mails them in?

Dr. NUROCK. That would stop them and this is one way of doing it, to get every State to pass this. I believe it will be passed in New Jersey this year.

Senator WILLIAMS. If there were a national law prohibiting the sending of these glasses in the mail, that would reach part of it. That will not reach the over-the-counter market.

Dr. NUROCK. Talking about everything, yes, sir. If our act is passed in New Jersey, it will eliminate over-the-counter sale of glasses and anything being mailed into the State.

Senator WILLIAMS. Has any State passed such a law?

Dr. NUROCK. There are, I think, three States.

Dr. CHAPMAN. I could not tell you the ones.

Dr. NUROCK. There are three States. Massachusetts, I know, is one, and there are two others. Minnesota, I think. There are three States

that have passed it, but this is not many. Of course, the Pennsylvania company that manufacturers these readymade glasses has a very strong lobbyist and this has been the problem in getting it passed. I am hopeful that we will be successful this year.

I want to express again, Senator Williams and members of your committee, my gratitude for having this opportunity to be here to present this information, and again thank you for all the good work that you have been doing in the field of eye care.

(The material referred to in Dr. Nurock's statement follows:)

(Text continues on p. 482.)

INTERNATIONAL ASSOCIATION OF BOARDS OF  
EXAMINERS IN OPTOMETRY, INC.,  
March 30, 1964.

MR. DAVID C. SHARMAN,  
Washington, D.C.

DEAR DAVE: In keeping with our discussion I have made a search of the reported cases and I cannot find a case reported where an optometrist has been sued for malpractice in the fitting of contact lenses. I have checked the Federal Digest, American Law Reports, second series, Southern Reporter, second series, as well as some of the works dealing with negligence cases which would include malpractice suits.

Further, I have been representing optometric associations and State boards of optometry for over 30 years and during this time have made a special effort to keep abreast of litigation generally involving optometry and I have no personal knowledge of any malpractice suit having been filed against an optometrist as a result of his fitting of contact lenses.

We have just recently concluded the trial of a case in chancery court here in Mississippi involving what the State board of optometry claimed was the unauthorized and unlawful practice of optometry by an optician, who is not authorized by law, in Mississippi, to fit contact lenses. Several ophthalmologists appeared as witnesses in this trial and testified that in their opinion an optometrist should not be permitted to fit contact lenses and on this question the chancellor held as follows:

"The court in conclusion cannot refrain from a comment on the testimony, that since the statute (optometry) did not mention contact lenses that they were excluded, is to place such a narrow interpretation on the statute as to make it a mockery."

In all 50 States either the optometry law by its wording or its interpretation by courts and attorneys general all hold and authorize optometrists to examine for fit, and adapt contact lenses.

With every good wish and with best regards, I am

Cordially yours,

RICHARD A. BILLUPS, Jr.,  
Attorney.

*Legal digest information—51 State boards of optometry*

	Yes	No
1. Corporate practice prohibited by law.....	40	11
2. Space leased in mercantile establishment, prohibited by law.....	20	31
3. Readymade glasses prohibited by law.....	7	44
4. Minimum examinations required by law.....	21	30
5. Contact lenses included in law.....	26	25
6. Advertising prohibited by law.....	29	22
7. Professional card advertising permitted by law.....	40	11
8. Price advertising prohibited by law.....	35	16
9. Physicians and surgeons exemption.....	50	1
10. National board acceptable.....	24	27
11. Can grant reciprocity.....	34	17
12. Power to make rules and regulations.....	48	3
13. Can retain legal counsel.....	32	19
14. Attorney General used as counsel.....	42	9

Very best wishes and many thanks for your cooperation.

WILLIAM JOSEPH, O.D.,  
Chairman, Legal Digest.

*Contact lens fitting, legal aspects of*

Section 63-802 Tennessee Code: An optometrist is entitled to prescribe and fit, adjust or adapt ophthalmic lenses under the definition of optometry in the code. In subsection 14, the term "ophthalmic lens" is defined to mean "any lens which has spherical, cylindrical, or prismatic power or value." A contact lens contains these or some of these qualities and therefore is an ophthalmic lens and as such is available to the optometrist for the practice by him of his profession.

Section 63-1402 Tennessee Code: The practice of dispensing opticianry is defined as the preparation, adaptation, and dispensing of lenses, spectacles, eyeglasses, and optical devices. The law prohibits ocular refraction, orthoptics, visual training, prescribing contact lenses or prescribing subnormal vision aids or telescopic spectacles. Probably legislative intent was to prohibit fitting contact lenses, since opticians are tradesmen and do not prescribe anything. That which has been specifically proscribed to the optician left him free to do that which has not been prohibited.

Opinions of the attorneys general: The first few opinions were rendered in the 1946-47 era when contact lenses received their first modern spurt in public recognition. Prior to that contact lenses had been used primarily for conical cornea and the like. This was the era of the molded contact lens when plastic material was physically inserted into the eye so that a mold could be procured with the result that what is known as a scleral lens was molded therefrom.

These early opinions are in Indiana which holds that an optician may not fit contact lenses; in California (the second State in which opticians were licensed in this case under the Medical Practice Act) an unlicensed technician may not fit contact lenses. Wisconsin prohibits the optician fitting contact lenses. A very conclusive opinion in the District of Columbia prohibited contact lens fitting by technicians. In 1947 Missouri held that only an optometrist might fit contact lenses.

In the meantime, thanks to optometric research, imagination, and inventiveness, the corneal or microlens was discovered. This gave impetus to a new rise of public interest. In 1959 two unsatisfactory opinions were rendered. The attorney general of Arizona ruled that an optician might use the keratometer in order to fit contact lenses. Then later in the year he ruled that an optician might use a set of trial lenses (contact). The State board of optometry had not made the attorney general cognizant of the complexities of the prescribing and fitting of contact lenses, providing that very complete information should be given prior to a request for an attorney general's opinion. In March of 1959 the attorney general in Nevada ruled that only a physician or an optometrist might fit contact lenses. He was subjected to pressure and in April sent a letter to the president of the State board requesting a conference for the reevaluation of his previous ruling. The optometrists have sought to have the conference, but it has not been held. The opticians fit contact lenses in disregard of the original ruling.

Oklahoma has a clear-cut opinion that opticians may not fit contact lenses. So, likewise, has Montana. Utah holds that an optician may not even advertise the fitting of contact lenses, nor perform the fitting. In New Mexico one ruling holds that an optometrist may fit contact lenses and another states that a retail ophthalmic dispenser may not legally fit contact or corneal contact lenses. On August 11, 1960, the Alabama attorney general ruled that an optician might not fit contact lenses. On September 27, 1960, after the presentation of an oral hearing by the ophthalmologists without optometrists being present, he reversed himself and withdrew the August 11 opinion.

The 1961 Michigan opinion is lengthy and carefully drawn and reaffirms two other opinions of the 1940's and 1950's. It affirms and upholds them and holds that an optician may not fit contact lenses. In New Jersey the optician's law specifically prohibits an optician from fitting contact lenses, and the attorney general so states. In April 1962 the attorney general of Kansas upheld the principle that an ophthalmic dispenser may not fit contact lenses but that this function is reserved to the duly licensed persons who can examine eyes and fit glasses in Kansas.

*Contact lens litigation*

Comparatively few cases have been decided in the field. The first was tried in January of 1958, the case of *Commonwealth of Virginia ex rel. Friedenberg v. Spandorfer*. An oral opinion was rendered by the court. The statutes of Virginia hold that a person practices optometry by even possessing a diagnostic optometric instrument. The defendant admitted he used the keratometer. At

the end of the plaintiff's case, the remarks of the judge seemed to indicate that he believed the defendant to be guilty. However, the defendant called several very prominent physicians to testify for him, one being so prominent that he took the stand and the judge had to be reminded to swear him in. When the case was over there was considerable colloquy between counsel and the court; the court indicated that the keratometer was not used for diagnostic purposes but simply for the mechanical purposes of measuring the curve of the cornea.

Also in 1958 in the Court of Quarter Sessions of Philadelphia, Pa., the case of *Commonwealth v. Stemet and Lambert* held that a reasonable doubt existed as to whether the measuring of the curvature of the eye in order to grind contact lenses constituted a professional act. Since this was a criminal proceeding and the defendants would have to be proven guilty beyond a reasonable doubt, the judge acquitted them.

Three cases were tried in Florida courts in 1959 and 1960, to wit: *State Board v. Cobb*, *State Board v. Glaeser*, and *State Board v. Huntington*. All of these in effect hold that an optician may not fit contact lenses or do many of the things which opticians in that State were wont to do.

In Oregon the case of *Reed v. Vent-Air* (1959) held that a technician could not measure or examine the eyes for the purpose of determining whether the individual could wear contact lenses; nor could he fit, insert, adjust, or readjust finished contact lenses into the eyes of any person.

After many intermediate motions, the case of *Mississippi State Board v. Chester* instituted in 1958 still has not been terminated. The defendant has moved that the nine points of the plaintiff's bill of particulars be dismissed, contending that these are insufficient in law.

In November 1961 an Oregon court holds in the case of *Reed v. Kuzirian* that an optician may not fit contact lenses. The decision states further that the optician might have a proper function to fit contact lenses within the actual personal supervision of a professional person, not by telephone or written communication but direct personal supervision.

In a criminal case, the *State of Louisiana v. Ralph J. Tuminello, Jr.*, the defendant was charged with practicing optometry unlawfully by using an ophthalmometer in the fitting of contact lenses. Several physicians testified that the instrument as used by the defendant, Tuminello, was used only for taking a physical measurement of the curvature of the cornea. The court refused to find the defendant guilty beyond a reasonable doubt and, this being a criminal proceeding, the defendant was acquitted. This case was tried in the 19th Judicial District Court, Parish of East Baton Rouge.

The most recent case, *John T. High et al North Carolina State Board v. Ridge-way Opticians*, was tried in the Superior Court of Wake County in 1962. The complaint charged that the defendant optician used a keratometer contrary to the optometry laws. Medical testimony again stated that the keratometer was herein used as a mechanical and not a diagnostic tool. The case may be appealed.

[Senate, No. 202]

#### STATE OF NEW JERSEY

INTRODUCED MARCH 9, 1964, BY SENATORS HARPER AND GROSSI

Referred to Committee on Institutions, Public Health and Welfare

AN ACT Concerning the practice of optometry and amending sections 45:12-1 and 45:12-5 of the Revised Statutes

[EXPLANATION.—Matter enclosed in boldfaced brackets in the bill below is not enacted and is intended to be omitted in the law]

*Be it enacted by the Senate and General Assembly of the State of New Jersey:*

1. Section 45:12-1 of the Revised Statutes is amended to read as follows:

45:12-1. Optometry is hereby declared to be a profession, and the practice of optometry is defined to be the employment of objective or subjective means, or both, for the examination of the human eye for the purposes of ascertaining any departure from the normal, measuring its power of vision and adapting lenses or prisms for the aid thereof. A person shall be deemed to be practicing optometry within the meaning of this chapter who in any way advertises himself as an optometrist, or who shall employ any means for the measurement of the powers of vision or the adaptation of lenses or prisms for the aid thereof, practice, offer or attempt to practice optometry as herein defined, either on his own behalf or as an employee or student of another, whether under the personal



supervision of his employer or preceptor or not, or to use testing appliances for the purposes of measurement of the powers of vision or diagnose any ocular deficiency or deformity, visual or muscular anomaly of the human eye or prescribe lenses, prisms or ocular exercise for the correction or the relief thereof or who shall offer and market for sale at retail to the general public spectacles or eyeglasses containing other than plano lenses or who holds himself out as qualified to practice optometry. *Nothing in the foregoing provision shall be deemed to prohibit a duly licensed ophthalmic dispenser from providing spectacles or eyeglasses, as prescribed by an optometrist or a physician.*

2. Section 45:12-5 of the Revised Statutes is amended to read as follows:

45:12-5. A person desiring to commence the practice of optometry shall file with the secretary of the board, upon blanks to be furnished by the secretary, an application, verified by oath of the applicant, stating therein that he is more than 21 years of age, of good moral character, [has been a resident of the State of New Jersey for a period of at least 2 years prior to the date of filing of the said application], is a citizen of the United States, or has declared his intention to become such a citizen, has a preliminary education equivalent to a course of at least 4 years in an approved public or private high school and has been graduated from a school or college of optometry maintaining a standard satisfactory to the board and which was in good standing in the opinion of the board at the date of graduation, and shall have received a diploma conferring upon him the degree of doctor of optometry or what in the opinion of the board may be considered the equivalent thereof, and shall have taken an examination before the board to determine his qualifications therefor. If the examination of any applicant for registration shall be satisfactory to the majority of the board at the date of graduation, and shall have received a diploma conferring practice optometry. All examination papers of applicants shall be deposited in the New Jersey State Library, and remain there for a period of 1 year, at the expiration of which time they shall be destroyed, and they shall be prima facie evidence of all matters therein contained.

3. This act shall take effect on the ninety-first day following the date of enactment.

(Further information supplied by Dr. Nurock appears on p. 523.)

Senator WILLIAMS. Thank you very much, Dr. Nurock.

Now we have our anchorman.

Dr. CHAPMAN. Yes.

I would like to say that I wish I could take another hour to introduce the man who has meant so much to this profession over a long period of time but the time does not permit that.

I would like to introduce now Mr. William B. MacCracken, Jr., who is the Washington counsel with the American Optometric Association for a long, long time.

Mr. MacCracken.

#### STATEMENT OF WILLIAM P. MacCRACKEN, JR., COUNSEL FOR THE AMERICAN OPTOMETRIC ASSOCIATION

Mr. MACCRACKEN. Mr. Chairman and Senator Keating, I sort of gave myself a little pat on the back when, during the Senator's questioning, I refrained from stating that I am wearing trifocals and I commend them heartily to lawyers engaged in court work. They come in very handy when it comes to shifting your range of vision from the witness to the papers in front of you to the exhibits on the blackboard and things of that kind. When I first started wearing them, the optometrist who prescribed them said that I ought to have convention glasses, the idea being, of course, that it was easy to read the badge of some of these people whom you know well but only see at conventions. I understand there is some doubt as to whether you gentlemen are going to need convention glasses this year at the rate things are proceeding.

Getting back to my statement, I am practicing here in the District with an office at 1000 Connecticut Avenue. I was first admitted to practice by the Supreme Court of Illinois in 1911. Subsequently, in 1930, I was admitted to practice in the District of Columbia, and have represented the American Optometric Association as their Washington counsel for more than 20 years. It is in this capacity that I am privileged to appear before your committee.

My activities have had to do with legislation, litigation, and administrative problems with the executive branch of the Federal Government.

My interest in vision antedates my admission to practice law, because both of my parents were physicians. My mother was one of the pioneer women physicians in this country. Were she living, she would celebrate her 111th birthday next month. My father had an office in a suite with an oculist.

As a youngster, I had what was commonly referred to as granulated eyelids and an occasional sty, which necessitated having my eyes treated by the oculist. I recall quite clearly my mother taking my maternal grandmother to see the oculist to secure glasses. Prior to that time, she had been in the habit of selecting her own glasses, probably from a peddler because she lived on a farm in the Fingerlake country of New York State. I also recall distinctly both the ladies discussing the relative merits of the glasses which grandmother selected elsewhere and those which the oculist prescribed.

I mention this merely to illustrate that up until the latter part of the 19th century the majority of people who needed corrective eyewear made their own selection, without professional prescription or examination. Readymade glasses are frequently referred to as "grandmother glasses" because they are used by elderly people.

Practically everybody, after they reach age 50, needs glasses or lenses to assist them in performing their visual tasks. The importance and the volume of these tasks has steadily increased in my lifetime.

During World War I, I served as a flying cadet, a flying instructor, and was a student officer taking a night bombardment course at Ellington Field when the armistice was signed. While stationed at this flying field, I represented some of my fellow officers who were in difficulties. One case involved a vision problem. There was no radio communication between the ground and the pilot and, in order to communicate with a pilot during night operations, the signals were given by using red and green flashing lights.

This case involved the inability of the officer to distinguish the red from the green when he was engaged in night flying. All pilots were required to pass color vision tests before they were accepted for cadet training. They were given another similar test when they were ready to receive their commission, and still a third test when assigned to duty for advanced training.

The complaint, in effect, charged the officer I was representing with having fraudulently passed his color vision tests. On cross-examination, the medical witnesses readily admitted that their knowledge concerning the causes, severity, and degree of color vision deficiency were subjects concerning which they knew little or nothing.

When I say little, that is being charitable; it was really nothing.

The young man was relieved from flying duty, but was not found guilty of any fraud or misrepresentation in connection with his previous physical examinations.

Senator KEATING. Let me interrupt, Mr. Chairman.

Mr. MacCracken, are there now lens to correct color difficulties?

Dr. CHAPMAN. No, sir; there are not.

Senator KEATING. Are scientists working on that?

Dr. CHAPMAN. I don't believe so, Senator, in the area of trying to find a device to correct color vision. The greatest interest in this field is still in the area of determination of exactly why these things persist and the whole makeup of the physiology of color. It is a subject that has been widely sought into.

Senator KEATING. There are degrees of color blindness, I believe.

Dr. CHAPMAN. Yes.

Senator KEATING. Some people are acutely color conscious.

Dr. CHAPMAN. That is correct. There seems to be those people who have extreme sensitivities in relation to shades and hues where others have far less. There are different degrees of this condition but, as far as we know, there is no treatable procedure by which it can be improved.

Dr. BALDWIN. There is a great deal of difference in the study of the nature of color vision. In fact, the National Institutes of Health has awarded a grant to the University of California School of Optometry for a study in that field.

Mr. MACCRACKEN. Speaking of fraud, defective vision lends itself to the schemes of charlatans and the unscrupulous. The Federal Trade Commission and the Post Office Department have attempted to curtail the activities of those who, for their own profit, would prey upon individuals with impaired vision. It is so true that God has given us only one pair of eyes, and so far man has not been able to make a false eye that would do more than provide a cosmetic effect.

The contribution of optometry to the well-being of mankind is inestimable. This profession, through its singular dedication to improving vision, primarily has been responsible for an entirely new concept; namely, the concept of providing eyewear for the specific needs of the tasks that must be performed. This has meant a whole new development in bifocals, trifocals, safety glasses, and various other seeing aids; and has also resulted in a new approach to the partially sighted, who heretofore have had to reconcile themselves to the fact that they no longer were productive and no longer could enjoy seeing.

Optometry provided these people with new types of seeing aids which today are used universally in all of our major clinics, hospitals, and centers for the partially blind.

In addition to this magnificent achievement, optometry developed contact lenses and has so popularized them that untold millions have and will profit from the use thereof. Their acceptability by both professions may be noted in that the vision professions have clinics and centers which provide contact lenses.

Because of these contributions and the determination to continue in the development of further aids to those handicapped by poor vision,

it is my feeling that this profession should be singled out for meritorious acclaim.

The Food and Drug Administration has shown great interest in the fact that contact lenses, in a comparatively few cases, have caused damage to the eyes of the wearer. This is a very proper concern but, in my opinion, the resulting damage was due either to the fact that the lenses were fitted by an unlicensed, untrained layman or the failure of the patient to exercise the required care in the use of his lenses. Naturally, a patient is apt to report his trouble to the one who fitted the lenses rather than to the one who prescribed them.

Recently, there has been considerable litigation at the State level involving the fitting of contact lenses by opticians. You have already heard what happened in New Jersey.

The Supreme Court of Oregon, in a strong opinion, sustained an injunction barring opticians from fitting contact lenses, and a similar result has been achieved in Florida through an opinion of their attorney general.

There have been two cases decided by the U.S. Supreme Court in which the constitutionality of State statutes regulating the practice of optometry have been involved. One of these is frequently referred to as the *Oklahoma* case. The citation is *Williamson v. Lee Optical Company*, 348 U.S. 483, and the other case was decided last year. It is known as *Head et al. v. New Mexico Board of Examiners in Optometry*, 83 S. Ct. 1759.

The Oklahoma statute which was challenged prohibited certain types of advertising and practicing in commercial establishments. Obviously, the purpose was to protect the public from fraud. The Supreme Court, in a unanimous decision, sustained the law in its entirety.

The *New Mexico* case also involved advertising restrictions, and the Supreme Court noted probable jurisdiction because one of the means of advertising was by a radio station, which served parts of New Mexico and parts of Texas.

Notwithstanding the fact that the Supreme Court invited the Solicitor General to submit the views of the Federal Communications Commission on that question, it sustained the action of the New Mexico courts in enjoining the radio station from broadcasting in New Mexico advertisements which were submitted by a Texas advertiser, and which violated the New Mexico law. Again, the opinion of the Supreme Court was unanimous. Mr. Justice Brennan filed a special concurring opinion.

In both of these cases, the American Optometric Association filed briefs amicus curiae and, in the *Oklahoma* case, counsel for the association made one of the oral arguments. The association's action was prompted because they strongly favor the protection of the public from anything that can be regarded as bordering upon commercialism. I have with me a copy of the association's brief filed in the *New Mexico* case, and am most happy to make it available to the committee and its staff.

Senator WILLIAMS. That will be made a part of the record at this point.

(Transcript continues on p. 487.)

(The information referred to follows:)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1962

No. 392

AGNES K. HEAD, d/b/a LEA COUNTY PUBLISHING CO., AND PERMIAN BASIN RADIO CORPORATION, APPELLANTS

v.

NEW MEXICO BOARD OF EXAMINERS IN OPTOMETRY

On Appeal From the Supreme Court of the State of New Mexico

MOTION OF THE AMERICAN OPTOMETRIC ASSOCIATION, INC. FOR LEAVE TO FILE BRIEF AS AMICUS CURIAE, WITH BRIEF ATTACHED

The American Optometric Association, Inc. by its attorneys, hereby respectfully moves the Court for leave to file the attached brief as *amicus curiae*, and, in support of this motion, respectfully states as follows:

1. The appellee has given its consent in writing to the filing by the American Optometric Association, Inc. of a brief as *amicus curiae*, but the appellants have withheld their consent, thereby necessitating the filing of this motion.

2. The American Optometric Association, Inc., organized in 1897 and incorporated in 1918 as a nonprofit membership organization under the laws of the State of Ohio, is the national organization representing the profession of optometry, having approximately 11,000 members, which constitutes approximately seventy-five percent of all eligible practicing optometrists in the country.

The optometrist is the only practitioner especially and exclusively trained to examine and refract the eyes of his patient for defects in vision. The practice of optometry has been defined to be the science and art devoted to the examination of the eyes, the analysis of the ocular functions and the employment of preventive and corrective methods for the relief of visual and ocular abnormalities. The profession of optometry, as it has grown, and as it is now constituted, is a single, complete and unified service, consisting not only of the examination and refraction of the eyes, but also of the prescribing and furnishing of eyeglasses or vision training, or both, as may be found necessary by the optometrist.<sup>1</sup>

In the past fifty years, the public need for the best obtainable visual care and for the highest professional standards in the practice of optometry has greatly increased. Tolerances in a number of industries are measured with far greater accuracy than was formerly the case, making greater demands on human vision. The motor vehicle, car or truck, is a dangerous instrumentality in the hands of a driver with poor vision. The enormous increase in the use of the public highways demands more effective use of the police power in this area both for the better visual health of the citizen and for the public safety.

Devoted from its inception to the protection and care of the vision of the public, the American Optometric Association, Inc., seeks to elevate the standards and practice of the profession of optometry, so that the public health, safety, and welfare will be protected from the untrained, the unqualified, the unethical, the unprofessional, and the charlatan.

3. The Association has been, and continues to be, interested in legislation and litigation affecting the practice of the profession of optometry and the field of visual care. It constantly guides and counsels toward greater professional status, attainment, and achievement, through better education and through the enactment of salutary legislation for the public and the profession.

<sup>1</sup> For background purposes, it is helpful to distinguish the optometrist from the ophthalmologist, the oculist, and the optician. The ophthalmologist is a physician who has taken postgraduate work in the eye has passed examinations given by the American Board of Ophthalmology. He is specially trained to perform eye surgery and to treat diseases of the eye. He is accredited and is a diplomate in ophthalmology.

The oculist is also a physician, who, on his own, has decided to specialize in the eye. He usually practices, in addition, the specialties of the ear, nose, and throat. The ophthalmologist and the oculist usually write prescriptions for eyeglasses; they do not ordinarily fill the prescriptions or provide the glasses themselves.

The optician, sometimes called a dispensing optician or an ophthalmic dispenser, is a mechanic who fills the prescriptions for eyeglasses written by the ophthalmologist or oculist. The optician is not qualified to examine the eye or to write prescriptions for eyeglasses.

Hence, the American Optometric Association, Inc., has a vital interest in the matters asserted before the Court in this case. We support the decision in this case of the Supreme Court of New Mexico. But our interest in doing so is not believed to be identical with that of the appellee. In rejecting appellants' contention of a violation of the Commerce Clause, the Supreme Court of New Mexico distinguished New Mexico's provision against price advertising of eyeglasses from an absolute prohibition of all advertising of eyeglasses. Affirmance here on the basis of any such distinction would make doubtful the validity of an absolute prohibition on such advertising.<sup>2</sup> We believe the absolute prohibition better calculated for protection of health in visual care and strengthening of the standards of the profession of optometry. So we seek to defend New Mexico's partial advertising restriction on broader grounds than were utilized in the court below.

4. Our interest goes beyond that. The appellants urge the invalidity of the decision below on grounds of Federal preemption, violation of the Commerce Clause and violation of the First Amendment as included in the Fourteenth. The American Optometric Association, Inc., as a national organization, is particularly equipped to defend against these contentions of Federal law, and in aid of the Court's function of balancing State and Federal interests, to point up the deleterious effect of a reversal here on the laws of many States besides New Mexico.

5. The American Optometric Association, Inc., participated as *amicus curiae* in this Court in *Williamson v. Lee Optical Co.*, 348 U.S. 483, not only filing a brief, but also arguing orally before the Court. The Association is familiar with that proceeding and within the briefs and record in that case and is particularly well equipped to set forth an evaluation of the impact of the decision in *Williamson* on the interstate commerce questions presented here.

For the foregoing reasons, therefore, it is respectfully submitted that the motion of the American Optometric Association, Inc., for leave to file the attached brief as *amicus curiae* should be granted.

Respectfully submitted.

ELLIS LYONS

LEONARD J. EMMERGLICK  
1021 Tower Building  
Washington 5, D.C.  
Attorney for the American  
Optometric Association, Inc.

HAROLD KOHN

130 W. 42nd Street  
New York 36, New York

WILLIAM P. MACCRACKEN, Jr.

1000 Connecticut Ave., N.W.  
Washington 6, D.C.

*Of Counsel*

Mr. MACCRACKEN. One of the problems which has confronted the profession at the State level is that of corporate practice. Many of the States have outlawed this type of optometric practice by statute or board regulation. In each instance, where the validity of the statute or regulation was challenged, it has been sustained. The most recent case is that of *Michell v. Louisiana Board of Optometry Examiners*, 156 So. 2d. 457.

In several States, corporate practice has been barred by judicial decision due to the fact that optometry is a profession and, as such, could not be practiced by a corporation. Several of our prominent chain-store merchandise establishments have what they call optical departments and employ a physician or optometrist to examine the eyes of their customers. One of them has as many as 80 outlets and each month

<sup>2</sup> See, for example, the Oklahoma provision (Okla. Stats. Ann., Title 59, Sec. 943) against all such advertising which was upheld, at least against due process attack, in *Williamson v. Lee Optical Co.*, 348 U.S. 483.

they rate them on the volume of business transacted by the optical department. The manager, in his optical letter, uses such statements as:

Hail the champ. It's No. 1060. This fine operation repeated its stellar performance—and [the past year] found them ranking No. 1 again. Our congratulations to this fine optical department and its guiding light.

The concluding part of this letter, after stating that the preceding year "was a good optical sales year" went on to say "all of you are to be congratulated. I salute you."

This is all right for merchandising, but it has no place in any profession, and particularly one dealing with the sense of sight, the importance of which cannot be overemphasized.

As has already been pointed out, the first optometry law was passed by Minnesota in 1901 and during the past 40 years every State has required that an optometrist should be licensed and subject to discipline by the licensing board. In order to secure an original license at any time during the past 25 years, the applicant was obliged to meet some very strict educational requirements, and pass a thorough examination.

The American Optometric Association believes that the public should be free to choose either a licensed physician or a licensed optometrist to provide vision care. In order to carry out this policy, in 1950 Congress amended title X of the social security law (aid to the blind program) so as to provide that State plans, to be approved, must make available to the beneficiaries the services of an optometrist if they were desired. The Veterans' Administration has utilized optometrists in their hospital facilities for many years. You have heard this morning about the experience of one with a flammable frame for his lenses.

Congress, some 4 years ago, provided that veterans entitled to outpatient vision care should have the same freedom of choice of profession that they would have if they, themselves, were paying for the service rendered.

In conclusion, permit me to assure you that the members of the American Optometric Association who are practicing their profession in one or more of the 50 States and the District of Columbia, together with their lawyers and administrative staff, are ready and willing to cooperate in every way possible to further the objectives of this committee.

If there are any questions, Mr. Chairman, I will endeavor to answer them.

I want to thank you for affording me this opportunity to testify.

Senator WILLIAMS. Thank you very much, Mr. MacCracken.

We know of your long and learned service of the law. Evidently you have some very satisfied clients here, the American Optometric Association. How long have you been with them? I didn't hear it.

Mr. MACCRACKEN. Represented them or practiced?

Senator WILLIAMS. No; represented them.

Mr. MACCRACKEN. Over 20 years.

Senator WILLIAMS. Well, there certainly have been a lot of great strides made in these two decades; isn't that right?

Dr. CHAPMAN. Almost unbelievable, really, considering the time of the association's very being. It has been a miraculous progress.

Senator WILLIAMS. I don't have any question.

Senator Keating?

Senator KEATING. I have no questions but want to express my appreciation for your testimony.

Mr. MacCracken is just as good as he ever was; probably a little bit better.

Mr. MACCRACKEN. Not when it comes to dancing, Senator, or running.

Dr. CHAPMAN. Senator Williams, that completes the presentation of testimony.

We thank you for your generosity of time.

We are motivated by the desire to render a better service for the people of this country and I know the committee sits for the same purpose. You have been kind and generous to give us this hearing.

Senator WILLIAMS. You have been comprehensive, most enlightening, and very helpful to us.

Just one sidebar question on the sunglasses that we buy over the counters in the stores. Do you have to be professional to judge whether they are harmful or cause distortions?

Dr. CHAPMAN. Yes, sir; in fact, it is a rather difficult thing to do even for a professional. It is dependent upon the degree of distortion that you get. It is almost uncanny what the human eye will tolerate.

If you hold this poor lens in front of the eye and move it about, you would not necessarily see a blur, such as you saw on the screen in Dr. McCrary's presentation. However, when the device is placed on the face the light which goes through and gets into the eye is truly distorted to the degree that the lens is imperfect, but it is a very difficult thing to pick up with the natural eye just viewing through it.

Senator WILLIAMS. You have to use measuring devices?

Dr. CHAPMAN. It is not a matter of measuring; it is a matter of passing light through the lens onto a screen, thus making a picture, just as you saw demonstrated today. They did nothing more there than hold the glasses before the projector chart and as the light passed through the chart it was distorted to the degree the chart was blurred.

Now, certainly, some of these sunglasses are so poor that the distortion can be seen by the viewer without projection. When you look through such a lens at an object and move the lens, if the object bows and twists a little or moves with the lens, then you know that you have a fundamentally distorted lens.

Senator WILLIAMS. Well, I thank you. I was going to try an experiment here.

The secretary for the association has been wearing dark glasses here all day and I wondered whether she needs some type of a test. She just stepped out—

Mr. MACCRACKEN. Senator, I have some material I would like to submit for the committee files.<sup>1</sup>

Senator WILLIAMS. Fine.

Senator KEATING. Let me ask this.

I suppose you would advise a person who wears dark glasses for reading in the sun, for example, that it is better for his eyes to have ground lenses than it is to use just regular glasses and put dark glasses over them?

<sup>1</sup> The *Oklahoma* case referred to previously will be found in the committee files.



Dr. CHAPMAN. The very best care that can be rendered is a prescription lens just as you are wearing, ground in the proper absorptive color.

There are certain quality optical devices which can be placed over a pair of lenses which do a creditable job. They are ground out of good material and properly curved so that they are distortion free.

Senator KEATING. Are there varying grades of sunglasses? Some are much better than others?

Dr. CHAPMAN. Yes, Senator; this product is extremely variable. This is a major concern of my profession because the fashion item now plays such a large part in the wearing of them and many ladies will go to the department store and other places to buy sunglasses at a very inexpensive price, but the quality is usually very poor. We prefer that such practices could be eliminated. This is not a damaging thing, though. That, I think, we must be very sure you understand, the tissue is not damaged; the eye, itself, is not damaged, but the comfort, efficiency, and safety is definitely hindered.

Senator WILLIAMS. Thank you again, gentlemen. We are very, very grateful.

Dr. N. J. Rogers, an optometrist from Beaumont, Tex., has been with us all day.

Doctor, will you be seated?

I have gone through your statement and I know you have been here most of the day. Much of it would be a duplication, would you not say, of judgments expressed by the other witnesses, particularly in connection with the plastic and the charges made by Dr. Stone and amplified by Dr. Dobelle?

#### **STATEMENT OF DR. N. J. ROGERS, OPTOMETRIST OF BEAUMONT, TEX.**

Dr. ROGERS. Senator, may I say this to you and the committee that the matter of contact lenses as I want to approach it is quite different than what has been approached thus far and I would appreciate the opportunity to present this statement. I came all the way from Beaumont to present it and I will make it as brief as possible by possibly deleting some of the lesser important remarks of my prepared statement.

May I proceed?

Senator WILLIAMS. Yes.

Dr. ROGERS. About a month ago, this committee received some information regarding a plastic material used for the manufacture of contact lenses; this plastic is called polymethyl methacrylate.

This information was presented to your committee by Dr. Martin Dobelle, an FDA medical officer. The information Dr. Dobelle presented about contact lenses was taken from a report which was prepared and written for an organization known as the National Medical Foundation for Eye Care. It was written by Dr. William Stone, Jr., an eye physician of Boston, Mass. Dr. Stone is a member of, and a spokesman for, the National Medical Foundation for Eye Care.

This organization, despite its impressive sounding name, is not a foundation devoted to research nor to the treatment and cure of eye disease, but only, and I emphasize, only, a public relations arrangement for the purpose of disseminating pro-eye-physician (ophthal-

mologist) propaganda and anti-optometry propaganda. To be blunt, it is an organization whose primary objective is to steer the public into the offices of the eye physicians, for eye examination, glasses and contact lenses, through the use of some half-truths, and sometimes outright misrepresentations.

Let me make it clear to you that not all eye physicians are members or supporters of the National Medical Foundation for Eye Care. Only about 1,200 of them, which is about 15 percent of the eye physicians, support it. Further, the foundation is not a branch of, nor a part of, the American Medical Association; and I want it clearly understood that I am not accusing all eye physicians, nor even a majority of them, of being a part of this plan. In my opinion, most of them are dedicated, competent eye doctors whose only purpose is to serve their patients to the best of their abilities.

Further in this report, I will give you facts taken from printed material, to prove what I have said about the National Medical Foundation for Eye Care.

According to a newspaper story in the Los Angeles Times on March 10, Dr. Dobelle is quoted as having told this committee:

Acid seeping from the [contact] lens is one of the greatest reasons for the inability of patients to wear them.

This is not a true statement.

I presume Dr. Dobelle got this information from the report Dr. Stone submitted to FDA.

In another newspaper article printed in the Detroit Press on March 13, in large bold type the headline read—"U.S. Investigates Plastic Lenses, Blindness Linked."

The article stated:

Reports of blindness in persons wearing plastic contact lenses are under investigation by the Food and Drug Administration. Acid released by imperfect lenses appears to be the cause in some, an FDA spokesman said. Eight cases were reported to the agency by Dr. William Stone, director of ophthalmic plastics research at the Massachusetts Eye and Ear Infirmary in Boston.

Further in the same news story is the following:

He (Dr. Stone) also said no one but a physician should fit them (contact lenses).

In the New York Times on March 18, a story appeared, titled: "Contact Lenses Under Scrutiny—14 Blindness Cases Linked to Plastic Compound in Survey by Physician."

One paragraph in this article read:

Dr. Abraham Schlossman, president of the Contact Lens Association of Ophthalmologists, said here yesterday that he believed Dr. Stone had conducted an important survey. Contact lenses, Dr. Schlossman said, are not completely innocuous.

At this time, he noted, too many technicians and optometrists who are not medically trained are providing the lenses for patients. The wearing of contact lenses requires constant medical attention, Dr. Schlossman said. This is not a true statement.

Newsweek magazine, March 30 issue, carried a long story quoting Dr. Stone, "[The] Solution to the contact-lens hazard is to make sure only qualified physicians prescribe them and supervise their use."

These are but a few of the many similar news stories printed throughout the United States; stories that put a terrible, but unjusti-

fied and unwarranted fear into the minds of millions of Americans presently wearing contact lenses, as well as millions who have contemplated having contact lenses fitted.

By now, I feel sure that the members of this committee have a clear understanding and picture of the purpose behind the alarming news stories and the statements made by Dr. Stone and Dr. Schlossman. I say to you, the real purpose behind Dr. Stone's report to FDA was to get some information on contact lenses before your committee, using a very nebulous factor of methacrylic acid, as a means of getting FDA interested and into the matter, in order to get some sensational news stories about loss of vision, thereby creating the vehicle for Dr. Stone, the spokesman for the National Medical Foundation for Eye Care, to spread his antiophtometry venom.

I tell you, this Dr. Stone, or his advisers, are very shrewd; because their strategy and plan has worked beautifully, thus far, in their scheme to gain complete control over the prescribing and fitting of contact lenses, as well as gaining the profits from the fitting of contact lenses, by discrediting optometrists and optometry through the news media of the country.

Believe me, optometrists have really been hurt by Dr. Stone's statements and news stories. The National Medical Foundation for Eye Care can be very proud of the excellent "hatchet job" Dr. Stone and his colleagues have done on the 22,000 optometrists, let alone the disservice they've done to millions of Americans.

But what is also very unfortunate about this almost unbelievable phenomenon is the fact that Dr. Stone used an unsuspecting agency of the Federal Government, the FDA, as well as this Senate committee, to promote this diabolic plan and scheme to hurt and discredit optometrists, in order to promote his personal and private interest, as well as the private interests of the National Medical Foundation for Eye Care and its supporters.

I might add here, Mr. Chairman, that the National Medical Foundation seems to be conspicuous by its absence; at least I don't see, according to the names shown on the sheet of witnesses, that any will be here regarding this matter. If I am wrong, I stand corrected. Nor is Dr. Stone present.

Senator WILLIAMS. We have solicited statements.

Dr. ROGERS. Fine.

Let me prove to you now that what I have said thus far, I am right on.

Now, in the first place, Dr. Stone knows very well that optometrists are the persons who actually pioneered and developed the present-day corneal contact lenses. Dr. Stone knows that the U.S. patents issued for corneal contact lenses in 1950 and 1951, were issued, not to any medical doctor or physician, but to an optometrist named Dr. George Butterfield, of Portland, Oreg., and an optician named Kevin Tuohy, of Los Angeles.

All present-day plastic corneal contact lenses are made under one of these two patents. Dr. Butterfield is an authority and pioneer in the contact lens field. Dr. Butterfield, an optometrist, has taught many medical doctors how to properly prescribe and fit contact lenses. There are many optometrists in the United States who have pioneered the present day, successful contact lenses, but just to name two of the best known, they are Dr. George Jessen and Dr. Newton Wesley, of

Chicago. These two optometrists have taught hundreds, and perhaps thousands, of medical doctors (eye physicians) the prescribing and fitting of contact lenses.

So you see, Dr. Stone knows—that optometrists are not only qualified and competent in the contact lens field, but he may even know that many optometrists are even better qualified and more competent in prescribing and fitting contact lenses than are many eye physicians. But despite these well-known facts, Dr. Stone says, and I quote him :

[The] Solution to the contact lens hazard is to make sure only qualified physicians prescribe them and supervise their use.

Now, that is a direct quote of Dr. Stone.

Dr. Stone knows only too well this is not the solution to the contact lens hazard. It may be his solution to the hazard, faced by some eye physicians, of losing some contact lens patients to optometrists, but it surely is not any solution for the hazards of contact lens wearers.

The real and only solution to the hazards of wearing contact lenses—and I say to this committee there are hazards in wearing them—but the real and only solution to the hazards of wearing contact lenses is the proper written instructions and directions to the contact lens patient, and regular, periodic examinations or checkups by the optometrist or ophthalmologist.

Also, no one but a licensed optometrist or physician should be permitted to prescribe and fit contact lenses. If an optometrist or an eye physician desires using the services of a lay optician or contact lens assistant, this should be permitted only under the direct supervision of the optometrist or eye physician, such as is provided in our Texas statutes. These are the solutions to the hazards of wearing contact lenses. It goes without saying, of course, that all contact lenses should be free of any irritating or harmful ingredients, and should be flawless in every respect.

If Dr. Stone's real intent was only to investigate the possible dangers of the plastic used in the manufacture of contact lenses, surely then, he could have done this very quietly through the National Eye Research Foundation or the National Medical Foundation for Eye Care, without all these sensational and damaging stories.

I would like to mention at this point that in some of the printed matter that was given to the press, there are two reports, one from the Du Pont Co., their plastic department, regarding investigations of the methacrylic acids, and they say in their last paragraph :

It was not possible to detect any acidity in either the test or control. The method used would have been able to detect 10 parts per million of methacrylic acid if this had been present.

The other report here by the Kendall Infrared Laboratories, they conclude in their report, and these are tests on contact lenses, gentlemen :

The content of methacrylic acid present in the contact lens is extremely minute and even if it were present it is chemically unavailable to harm the human eye.

So, you see Dr. Stone had these things at his disposal, too, without having created all the sensationalism and damage to optometry which he has done.

In the Southern Medical Journal dated February 1962 of the Southern Medical Association, a report by Dr. T. J. Vanzant of Houston,

Tex., was printed, entitled "Symposium on Contact Lenses." In the interest of brevity, but for the purpose of pointing out the fact that as recent as 1962, many eye physicians were just beginning to learn the basic fundamentals of prescribing and fitting contact lenses, I will quote only portions of the article. I am quoting from Dr. Vanzant's article:

Ophthalmology can no longer hide its head in the sand and ignore contact lenses. Contact lenses are here to stay. Their worth has been proven; the public clamors for them; they are being fitted and worn, literally, by millions. As guardians of the eye health of the Nation, it is imperative that ophthalmologists acquaint themselves with the situation, and lead, rather than follow.

An ophthalmologist who writes a prescription and sends the patient to a technician and closes the case is doing his patient a great disservice.

This was covered quite adequately by some of the previous testimony presented here.

An aura of mystery has been built up around the fitting of contact lenses. Many ophthalmologists have false ideas of their inability to fit lenses and of the great time and effort and worry involved. In the past, perhaps, some of these worries were, in fact, present. However, with the present state of knowledge of the fitting of contact lenses, success can be achieved in a high percentage of cases with a minimum amount of time, effort, or worry.

It is the desire and the intention of this panel to draw back the veil of mystery and to show the ease with which the average ophthalmologist can become adept in the field of contact lenses.

These statements by Dr. Vanzant, a leading eye physician, point up the fact that as late as 1962, eye physicians were still just beginning to learn about fitting contact lenses, whereas, optometrists were up to their eyebrows, as the saying goes, in the fitting of contact lenses as far back as 1952, and even earlier. Yet, Dr. Stone proclaims, the solution to the hazards of contact lenses is to have them fitted only by eye physicians. This is quite ironic, to say the least.

The National Medical Foundation for Eye Care published a booklet in 1957, the title of which is "Medicine, Optometry, and the Public Welfare." The subtitle is "A Report to the Medical Profession." On the back page of this booklet is found the statement regarding the purpose for which the foundation was established. The following is the exact and full statement printed in their pamphlet. It is very short:

The National Medical Foundation for Eye Care was established for the purpose of gathering, studying, and disseminating information to the medical profession and the public relating to scientific eye care. It serves the public interest by helping the American people to understand the basic professional and scientific standards of good eye care, and the qualifications and functions of ophthalmologists and of the related technical personnel who assist them in providing eye care to the public.

From the above, it is obvious that the primary purpose for the establishment of the National Medical Foundation for Eye Care is to disseminate information, and not for any research of eye disease and the like.

In this regard, I bring to your attention a paragraph taken from an article entitled "Battle for Your Eyes," by Kenneth Alden, which was published in the December 1963 issue of *Coronet* magazine. The paragraph reads as follows:

What makes the ophthalmologist feel so superior? There are only about 7,000 of them in the United States, compared to 22,000 optometrists. The eye-doctors want complete control and dominance in the visual and eye-care field.

Yet they are profoundly unhappy with the little attention their specialty has received by the AMA nationally and by State medical associations. So, lately, they have organized their own State societies and the propaganda-promoting National Medical Foundation for Eye Care to get what they want.

On page 10 of the National Medical Foundation pamphlet is found the following:

Attempts to teach ophthalmic pathology to optometrists, or to any other non-medical group inevitably gives them a false impression of their ability, and so results in a disservice to the public. Highly important changes in early disease are missed and prompt attention is frequently denied the patient whose symptoms alone may suggest the need for medical care. Such a procedure as the charting of the visual fields by an optometrist is dangerous in many cases because even with apparently normal fields, many patients have early disease, but may be informed by the optometrist that their eyes are normal. Where there is any indication for visual field examination there is indication for medical opinion. Ophthalmologists frequently encounter patients with glaucoma simplex who have repeated "examinations" by optometrists, including the use of the ophthalmoscope and the tangent screen, and who have been told that their eyes were normal except for the need for glasses. They have not been referred for medical attention until the glaucoma has become well advanced.

On page 36 of the same pamphlet by the National Medical Foundation is found the following:

Of even greater importance is the assumption of the competence of the optometrist to examine the eyes of schoolchildren. A visual test is only part of an ocular examination. The latter should include an examination of the eye for disease and functional disabilities, a large percentage of which would not be discovered by any visual acuity test or any procedure available to an optometrist.

Now let me refer you to the article in the *Coronet* magazine, for the further purpose of pointing out the propaganda efforts of the National Medical Foundation for Eye Care as indicated in the above two quotations taken from their booklet.

On page 50 in the December 1963 issue of *Coronet* magazine, we find the following:

Here is another illustration of medical diagnostic blindness. Eighteen-year-old Peggy Barron, of Boston, suffered from dimness of vision, headaches, nausea, and vertigo. Three different doctors, including an ophthalmologist, diagnosed her condition as "migraine" and prescribed either tranquilizers, placebos or psychotherapy. Ultimately, for her vision—she kept seeing multicolored dots—Peggy consulted an optometrist. By examining her eye grounds (back of her eyes) he found that she had an edema, a swelling of the optic nerve. A visual field study disclosed that she couldn't see the side and her pupil reflexes were sluggish and unequal. The optometrist then sent her to a neurologist who operated and found a malignant brain tumor.

The point of the above illustration is obvious. The National Foundation for Eye Care claims that the procedure of charting the visual fields by an optometrist is dangerous. They also state that a large percentage of eye disease and functional disabilities would not be discovered by any visual acuity test or any procedure available to optometrists. Yet, the case of Peggy Barron, of Boston, certainly establishes basic facts regarding the abilities and competence of optometrists which are contrary to the statements shown above and which were taken from the pamphlet of the National Medical Foundation for Eye Care. The National Medical Foundation pamphlet is replete with similar statements which discredit optometrists.

On the subject of contact lenses, we find the following in the pamphlet by the National Medical Foundation for Eye Care. On page 43, the following is found:

Optometrists who adhere to their proper field and do not attempt ocular diagnosis and treatment, or such basically medical procedures as the fitting of contact lenses without supervision by ophthalmologists, may be considered skilled lay technicians who are acceptably engaging in the small segment of the field of eye care which they are permitted, by specific legal authorization, to share with ophthalmologists. They are entitled to ophthalmologic assistance and cooperation.

On page 49, we find the following:

An ophthalmologist should be consulted if the patient contemplates wearing contact lenses, to determine the suitability of the eye as well as the patient for wearing these lenses. Persons whose surface blood vessels dilate under all minor irritations, including the presence of dust, wind, sun and smoke, swimming, and the use of alcoholic beverages, usually do not tolerate contact lenses well. If a patient is allergic to plastic, lenses constructed from glass may be fitted. The prescribed contact lens should be checked by the ophthalmologist for fit and visual performance. The eye is examined periodically for signs of reactivation of healed or inactive pathological conditions of the cornea, as well as for corneal abrasion or irritation that may be caused by wearing the lens. Wearing time must be increased slowly and gradually to increase the tolerance to the lenses.

The point is it is apparent from the above that contact lenses are not only mechanical devices, but also present a very definite indication for medical supervision.

As you gentlemen heard heard throughout the day, this is the purpose of the Medical Foundation's booklet.

Now, as you can see from the above, the National Medical Foundation for Eye Care is certainly endeavoring to create the erroneous impression that the fitting of contact lenses should be done by the eye physician or, at least, under his supervision. The facts certainly do not substantiate this position at all.

Now, I have one last quotation from a medical publication. To my knowledge, the only book on contact lenses written by medical doctors is one called, *Contact Lens Management*, which was referred to earlier today and it is edited by Dr. Morgan B. Raiford, a medical doctor. The book is composed of different chapters on contact lenses, each chapter being written by a medical doctor. This book was published in September 1961 by the Little, Brown & Co. of Boston, Mass.

The last chapter of this book is entitled: "Potentials of Contact Lenses," and was written by a Dr. Edward A. Pushkin of Chicago, Ill. Bear in mind that this book was published only very recently, less than 3 years ago. But here is what Dr. Pushkin has to say about the prescribing and fitting of contact lenses by the eye physicians:

The education of the ophthalmologists in the fitting of contact lenses should begin in the residency training program. The ophthalmologist should know as much as possible about the measuring, manufacturing, fitting, and adjusting of contact lenses. He should particularly know the causes of discomfort, since it is to him the patient ultimately turns—

which is not a true statement. I am still quoting:

When sufficient education has been attained by the physician, then there would be moral backing necessary to promote State legislation to authorize prescribing and fitting of contact lenses only under the supervision of a physician.

The development of precise manufacturing skills will increase the number of ophthalmic problems that can be aided with contact lenses and eliminate the need for modifications in contact lenses. The consequent reduction of time spent with the patient can be reflected in economics of contact lens fitting. This, in

itself, will have a tremendous impact upon the potential of contact lenses. For the rest, time alone can tell.

As recent as 1961, Dr. Pushkin is telling his medical colleagues that they should learn as much as possible about the fitting and prescribing of the contact lenses, and when the physicians are sufficiently educated in the field, they would then be in a position to take over the entire, and I might say, lucrative field of contact lenses, thereby taking it away from the very qualified contact lens fitters, the optometrists—the persons who pioneered, developed, and patented contact lenses, as well as having taught hundreds, and perhaps thousands, of eye physicians the art and science of contact lens prescribing and fitting.

As is so very obvious, the ultimate goals and aims of the National Medical Foundation for Eye Care are to promote the personal and private interests of the eye physicians who support it, to the detriment, and possibly the ultimate destruction, of optometry.

In view of the great harm done to optometrists by Dr. Stone and others, as well as his clever use of the FDA and a U.S. Senate committee, which is this committee, I respectfully urge this committee to do the following in order to help reduce the damage which has been done to optometrists and the American public.

This touches not only the elderly, Senator Williams; it touches everybody. I am sure your committee is interested in the way it affects everybody in America; not just the elderly.

First, a report to the American people advising them that optometrists and ophthalmologists are qualified to prescribe and fit contact lenses. I believe you men have heard enough competent testimony today to verify this.

Second, an investigation of Dr. Stone and the National Medical Foundation for Eye Care to determine if any laws have been or are being violated through their conspiracy or their activities.

I frankly feel, gentlemen, that the whole purpose of bringing this matter of methacrylic acid, which has been proven beyond a shadow of a doubt is nothing more than a hoax, in the hopes this would be the means of getting this before the press in order that Dr. Stone could make some of the very damaging statements that he has made, damaging to optometrists.

Thank you.

Senator WILLIAMS. Well, you have made your point very strongly, very clear, Dr. Rogers. You were here most of the day.

Dr. ROGERS. Yes, sir; I was here.

Senator WILLIAMS. I showed the gentlemen from the Optometric Association this ad for contact lenses that appeared yesterday in a leading newspaper here in Washington.

Dr. ROGERS. Yes, sir.

Senator WILLIAMS. Their objection to this is that this is commercializing what should be professional care for health problems.

Dr. ROGERS. Yes, sir.

Senator WILLIAMS. Do you agree with that?

Dr. ROGERS. Only to the point that if it is misleading or misrepresenting in any way, then I do agree with them.

Senator WILLIAMS. Now, you see the doctors are very careful to circumscribe their activity in such a way that they don't advertise; they can't commercialize their healing arts; you know that.



Dr. ROGERS. You mean the medical doctors?

Senator WILLIAMS. The medical doctors.

Dr. ROGERS. It is my understanding—

Senator WILLIAMS. They join the country clubs and they let everybody know they are medical doctors but they cannot be party or even a second party to anything like this in a newspaper.

Dr. ROGERS. That is true. From the standpoint of their code of ethics, that is true. From a legal standpoint—

Senator WILLIAMS. I am only talking about their code.

Dr. ROGERS. Yes, sir.

Senator WILLIAMS. Code; not by law.

Dr. ROGERS. That is right.

Senator WILLIAMS. That gives great dignity to them. Whoever is doing this to you fellows is detracting from your dignity as optometrists.

Dr. ROGERS. Let me say this, then: You are not acquainted with me or my practice. I engage in certain forms of advertising. I, of course, do not resort to this particular type but it is an educational type of advertising which I think in my personal opinion, is that it is beneficial not only to the public but to optometry. We have differences of opinion in optometry. You must bear that in mind. I believe there are about 12,000 optometrists who are members of the American Optometric Association.

Senator WILLIAMS. 16,000.

Dr. ROGERS. Pardon?

Senator WILLIAMS. I think 16,000.

Dr. ROGERS. Who are members of the association?

Senator WILLIAMS. I thought that was what he said.

Dr. ROGERS. You may be right, but there are quite a few optometrists over the country who are not members. This is unlike medicine; it is somewhat more similar to dentistry in some areas.

As I understand, out in California the dentists, whereas the optometrists do not, the dentists do advertise.

Senator WILLIAMS. They do?

Dr. ROGERS. Yes, sir. I have seen that firsthand.

This gets into the area, you might say, of differences of opinion, regarding the practice of optometry and I think in regard to that, though, I would be glad to answer any question that you care to ask.

Senator WILLIAMS. I don't think so. I have been keeping a lot of New Jersey folks waiting for an hour, so I better get off the national scene and onto the State scene.

Dr. ROGERS. May I introduce this as a part of the testimony to show the fact that we are well aware of the dangers, the hazards, in wearing contact lenses. My advice to the patient, the contact lens wearer, as I stated in my statement in writing, what they must guard against. There are a few hazards. There are hazards in driving an automobile; people get killed every day, but we don't stop them from driving.

The title of this booklet is what we in our practice believe, "Wearing Contact Lenses Safely Is Up to You."

(Text continues on p. 514.)

*Wearing Contact Lenses*  
**SAFELY**  
*Is Up To You!*

**TEXAS STATE OPTICAL**



**CONTACT LENS SPECIALISTS**

**Your ultimate success as a contact lens wearer will depend primarily upon one factor—that factor is YOU!**

For your safety and eye protection, it is vitally important that you carefully read and study the following information.

You may have read or heard from some source, that under certain conditions there can be some hazard involved in wearing contact lenses. This is true—just as there can be some hazard in driving an automobile under certain conditions and circumstances. Let us explain.

You know, of course, how to control the conditions under which you drive your car. That is, in the interest of safety and well-being, you control your speed, obey traffic signs, and observe other rules of safety.

The conditions, or circumstances, under which you wear contact lenses are also under your control, and the purpose of this booklet is to outline the methods by which you must control these conditions, to provide the maximum in safety and comfort for your eyes.

*The responsibility for wearing your contact lenses in a proper, careful, and safe manner is yours. We cannot be responsible, since we have no control as to how, where and when you will wear your lenses.*

We can only inform you of the correct methods and procedures of wearing contact lenses, and of the possible causes of eye irritations and abrasions from improper or negligent wearing of your lenses. Therefore, once you leave our office, the responsibility for SAFE wearing then falls completely upon you, the contact lens wearer. It cannot be otherwise.

The consequences of careless or irregular contact lens wearing habits can be either mild or severe. Either of two types of difficulties may result: (1) **Eye irritations**, or (2) **Eye abrasions**.

1. **Eye Irritations:** The eye feels dry or gritty, with burning and stinging. The lids may be swollen. The white of the eye is reddened. There may be excess tears and extreme sensitivity to light. The vision may be slightly blurred. Eye irritation is caused by the same incorrect wearing habits (listed below) that cause an abrasion, but the condition is less serious than an abrasion. If an irritation develops in either eye, do not ignore, or

attempt to tolerate, the condition. Return as soon as possible to our office, in order that your eyes and your lenses may be examined, and that we may instruct you in methods of avoiding future irritations. If you are unable to return to our office at that time, discontinue wearing the lenses until you can return for re-examination.

2. **Eye Abrasions:** An abrasion of the eye results when the front of the eye (the cornea) is slightly scuffed or rubbed by a lens that is not being worn correctly. The result is a tiny break in the outer tissue of the cornea. Due to the fact that the cornea is so richly supplied with nerve fibers, an abrasion, though tiny in size, may be somewhat painful. Also, since in an abrasion, there is a break in the outer tissue of the cornea, there is the possibility that bacteria can enter the tissue and set up an infection.

The main causes of an abrasion are listed below. Although there are many causes for this condition, they can practically all be summed up in one sentence: In almost every instance, the patient *did not follow the instructions for correct, safe wearing!*

As noted below, it is sometimes difficult to pinpoint the exact cause of the abrasion, as it may have been brought about by a combination of more than one of the listed causes. The professional person who can most accurately determine the cause of an abrasion is the doctor who prescribed the lenses. He, and only he, knows the particular fitting technique utilized for each patient. This technique usually varies because of the differences in the fitting factors of individual contact lens patients. *No other doctor, not completely familiar with all the fitting factors, could determine the cause of an abrasion as accurately as the fitting doctor.* The doctor who is unfamiliar with all the fitting factors might even arrive at an incorrect conclusion, due to the fact that he may employ a different fitting technique, which involves differences in lens sizes, base curves, lens thicknesses, etc. There are several contact lens fitting techniques and each of them is used successfully.

The main causes of an abrasion are:

- a. *Over-wearing and exceeding the wearing schedule, or irregular wearing.* The corneal tissues have not been conditioned or adapted sufficiently to tolerate the lenses for the excessive hours of wear.
- b. *Rubbing the lids while the lenses are in place, or rub-*

*bing the lids over the corneas, after the lenses have been removed.* The friction on the cornea can transform a small irritation into a full-fledged abrasion. Rubbing the lids over the cornea can cause a break in the thin, outer layer of the corneal tissues.

- c. *Dust, sand, or grit under the lenses.* These small particles can abrade and scratch the cornea.
- d. *Poor insertion and removal techniques.* Corneal injury can result from the scraping and scratching of rough, hurried, or careless insertion or removal of the lenses.
- e. *Scratched or damaged lenses.* When the smooth surfaces and finely rounded edges of the lens are damaged by careless handling, the resultant rough area on the lens can produce an abrasion.
- f. *Living or working where there are chemical fumes, gases, solvents, or microscopic, air-borne particles.* Any of these materials might irritate the cornea, resulting in an abrasion.
- g. *Failure to keep the lenses clean.* If the hygienic procedures of cleaning, soaking, and wetting the lenses are not faithfully and regularly carried out, mucous particles and secretions will adhere to the lenses. These small, hard masses, sometimes barely visible to the naked eye, can cause an abrasion.
- h. *Switching the left and right lenses and wearing the wrong lens on each eye.* The curvature of each lens is prescribed to correspond to the curvature of the cornea for which it is made. If the wrong lens is placed on the cornea, an abrasion may result.
- i. *Disease or pathology of the eye or body, contracted by the contact lens wearer.* Nearly any disease of the eye or body can, to a certain extent, affect the corneal tissue and reduce its ability to tolerate the contact lens. An abrasion may result. (It might be mentioned that some rare eye diseases, such as the "herpetic" affections, produce lesions and marks on the cornea that *look like* abrasions. These are *not* caused by the contact lens, however, but by the disease.)
- j. *Hereditary eye conditions.* Such rare eye conditions as the so-called "conical cornea" and the "corneal dystrophies", and others of like nature, can cause the cornea to be thin and fragile, and abnormally susceptible to abrasions. These are *not* caused by the contact lens,

but by the inherent corneal factors.

- k. *Rough, body-contact sports, such as football and wrestling*, may cause the lens to be pressed forcefully against the cornea, causing an abrasion.
- l. *Sleeping in the lenses*. Contact lenses are not designed to be worn during sleep. If the lenses are worn on the closed eyes during sleep, there will be a stagnation of tears under the lenses. This may result in corneal swelling, edema, and abrasions.
- m. *Ideopathic (Unknown) causes*. In some cases, several of the above factors might be responsible, rather than just one. It is not always possible to pinpoint exactly which factors cause an abrasion.

**WHAT TO DO IF YOU HAVE AN ABRASION:** An abrasion usually develops during the day's wearing of the contact lenses; but the patient does not usually become aware of it until after retiring at night. If you should ever develop this condition, you will probably feel a burning and stinging of the eye, accompanied by a fairly sharp pain, as though there were a large particle of dust or grit in the eye. The first thing to remember is, don't become excited. Recall that we mentioned above that the eye is so richly supplied with nerve fibers, that even the tiniest corneal irritation may be felt very keenly. The actual size of the abrasion is probably so small that it is barely visible to the naked eye. The front surface of the cornea has such remarkable healing powers that the condition usually clears up in a matter of hours. If the abrasion occurs at night, the following steps should be taken, in order to give you as much comfort as possible, during the hours that it takes for the healing process to clear up the abrasion.

1. Keep the eye closed. The constant rubbing of the abrasion during blinking slows down healing and causes discomfort. Do not look at bright lights. A patch may be applied to the eye if desired.
2. Cold compresses may be kept on the eye for several hours.
3. Aspirin or similar household pain-relieving agents may be taken, according to the directions of the makers thereof, to help relieve the discomfort or pain.
4. If the pain persists and you want more immediate relief, call your TSO optometrist, who will arrange for treatment by an ophthalmologist. If you are unable to reach your TSO optometrist, call a local ophthal-

mologist (M.D.), or the receiving room of your local hospital for the necessary treatment.

5. The following morning, call your TSO office, and arrange to have an eye examination that morning. The optometrist will examine your eyes to determine the degree of the abrasion and how soon wearing the lenses may be resumed. The average mild case ordinarily clears up in less than 24 hours, but should be taken seriously while it exists.

The above eye conditions are discomfoting, painful, nerve-racking, so every contact lens wearer should strive always to avoid them. (They can also be somewhat expensive, if medical treatment is required. Naturally, the original fee for the contact lenses did not include any charge for medical treatment made necessary by improper wearing.) How can the wearer avoid the negligence or carelessness that brings on such conditions? *The answer is, by striving always to develop and maintain the proper contact lens wearing habits!* During the adaptation period, and after, you simply *must* develop and maintain those habits and patterns of action that will set you on the road to success. Eternal vigilance and attention to detail will achieve that success. The habits that you must develop are as follows:

- I. The "*Regular Wearing*" Habit.
- II. The "*Clean Lens*" Habit.
- III. The "*Wearing According to Conditions*" Habit.
- IV. The "*Semi-Annual Check-Up*" Habit.
- V. The "*Lens Protection*" Habit.

We will discuss each of these habits in turn.

- I. **The "Regular Wearing" Habit:** When you receive your lenses, you will be given a schedule of gradually increasing daily wearing time. By following this schedule faithfully, every day, you will increase your wearing from a few hours daily, initially, to all-day wearing. To achieve and maintain this all-day wearing of contact lenses, the following factors are of the greatest importance:

- A. *Follow very carefully the schedule of wearing that is given to you. Do not exceed the daily number of hours on the schedule.*

In the beginning of your adaptation process you may experience several common and harmless symptoms. One of these is "**Spectacle Blur**". This condition may occur when you remove your contact lenses, after completing your wearing schedule for the day, and replace them with your eyeglasses. You may notice that your

vision through your eyeglasses is slightly cloudy, or hazy. This is spectacle blur. It is caused by microscopic changes of the cornea as a result of the adaptation process taking place.

Some patients never experience any spectacle blur. Others find that it disappears in a matter of two or three hours. With some patients it lasts overnight into the next day. As the wearing time is increased and the eye adapts to the lens, the condition generally becomes less apparent, and may finally disappear completely. If it proves annoying during the early stages of wearing, it can be minimized by starting the wearing period later in the day and wearing the lenses until bedtime. It will disappear with most people overnight.

There are several other normal symptoms that many contact lens patients experience during their adaptation period. You may not experience all of these symptoms but you will almost certainly experience some of them. Although they may seem a bit unusual at first, they are merely indicative of your body's reaction and adjustment to the lenses, and are not a cause for concern or alarm.

**The following are normal symptoms during the adaption period:**

**1. Upper lid irritation and difficulty in looking up:**

The focal point of sensation for the new contact lens patient is the upper lid. This lid must come down and cover the lens at every blink, and no matter how perfectly profiled and finely finished the lens is, there is some sensation and occasional irritation at this point in the early stages of wearing. It is this lid sensation that causes the new patient to experience difficulty in looking up. In the beginning, you may notice that you have a tendency to blink more frequently and more rapidly. Try to avoid this reaction, and if possible, blink even less frequently than normal. As the wearing time is increased, the lids become adjusted to the lenses and the lid sensation becomes much less noticeable.

**2. Blurring and changes in the clarity of the vision; reading difficulties:** The vision may not be absolutely clear at first, due to:

- a. Excessive tears under the lens.
- b. Poor centering of the lens. It has not settled down as yet, and you are seeing the edge



(bevel) of the lens.

In other words, the vision is blurred due to the fact that the ideal physical fit has not yet been attained. It is not due to the fact that the prescription is incorrect. Once the correct *physical fit* has been achieved, the doctor will concern himself with the *visual correction*. It is not always possible to do these things simultaneously.

3. **Excess tears symptoms:** There are several normal symptoms that are caused by the excess tears that are present in the eyes of nearly every new wearer.

Some of these symptoms are:

- a. Drooping of the lenses (lag).
  - b. Sparkling and shininess of the eyes.
  - c. Nasal or temporal floating of the lenses.
  - d. Appearance of a peripheral ring or blurriness around the field of vision.
4. **Photophobia, or increased light sensitivity:** As a beginning contact lens wearer you may notice that your eyes have become much more sensitive to bright light. This is usually more noticeable outdoors, but can also be experienced indoors. The photophobia is due to the fact that the plastic contact lens is more transparent than the glass spectacle lens, and thus admits more light to the eye. The frame that you formerly wore also reduced the intensity of the light entering the eye. The third and probably the most important factor in the photophobia, is that the eye is temporarily more sensitive to light, due to the presence of the lens.
  5. **Lenses falling out:** Due to excess tears, and to the fact that you have not developed the necessary skill or knack for wearing contact lenses, the lenses may fall out at times. There is no cause for alarm, should this happen; it merely indicates that the lens has not as yet settled on your eye, as it will do later. It does not indicate that the lens is not fitted properly; it is merely a normal part of the adaptation process.
  6. **One-eye symptoms:** You may notice that most of your sensation is coming from one eye; that is,

one of your eyes itches more than the other, or feels more irritated. This is merely a sign that one eye is somewhat more sensitive than the other; it is more richly endowed with nerve fibers, and has tissues that respond with greater intensity to the presence of the lens.

*There is little that can be done to alleviate any of the above symptoms.* These symptoms will decrease day by day, as the wearing time is increased. In most instances, they will disappear when the adaptation period is completed.

- B. You will be advised to return for a progress examination approximately one week after you receive your lenses. *It is very important that you keep this appointment so that your progress may be checked and the condition of your eyes observed.*
- C. Wear your lenses every day unless you have an eye irritation which prevents you from wearing them. Only in this way can the corneas stay conditioned and adapted to accept the lenses.
- D. Avoid an irregular daily wearing schedule. That is, do not wear the lenses 3 or 4 hours one day, and 10 or 12 hours the next. After attaining all-day wearing time, you must wear the lenses every day, or nearly every day, on this schedule, to keep your corneas conditioned to the lenses. If, for any reason, you should stop wearing the lenses for two or more days, upon resuming your wearing you must start with a reduced schedule and gradually build back up to all-day wearing. Our office will be glad to advise you regarding a schedule.

The importance of a regular wearing habit cannot be over-emphasized. To do otherwise is to minimize your chances of success, *and to increase the risk of irritation and discomfort to your eyes.* Even after you have attained 8 to 12 hours daily wearing time and are considered a successful contact lens wearer, you may notice on occasion a difference in the feeling and comfort of the lenses. *There may be times when they will not feel as comfortable as they usually do.* You may experience certain hard-to-define symptoms that seem to "come and go". There is actually nothing that can be done about such symptoms and sensations. They are just a result of the general physical and physiological condition of your body and eyes at that particular time.

- II. The "Clean Lens" Habit: We can't emphasize too strongly the absolute necessity for keeping your lenses *clean* and properly "wetted out". The cultivation of the "clean

lens habit" will pay big dividends in contact lens safety, comfort, and satisfaction. In order for the lenses to be comfortable, the tears must flow over all surfaces of the lenses in a smooth, unbroken film. This is the so-called "wetting out" of the lenses. The lenses cannot wet out properly unless they are absolutely clean. There must be no trace of oily or mucous secretions, finger prints, cosmetics, soil, or any other foreign matter on them.

Some patients at times may have difficulty keeping their lenses clean because their eyes, or lids, or the skin around the eyes begin to secrete greater-than-normal amounts of mucus, or oily substances. These substances may adhere to the lenses and cause the vision to be foggy and blurred. The lenses look cloudy and frosted, like a foggy windshield on a car. This condition is usually more severe, and is more prevalent, in the warm, humid summer months, though it may occur at any time.

If you should develop this excess secretion problem, our office can advise you as to the proper methods for dealing with it. Briefly, these methods are based on extreme cleanliness of the lenses and correct personal hygiene. Before handling the lenses, the hands must be thoroughly washed and rinsed. The skin around the eyes must be washed and rinsed to remove excess oils from the complexion. *The proper cleaning, wetting, and soaking procedures for the lenses must be faithfully maintained.*

Many individuals have in their eyes, upon arising in the morning, substantial amounts of deposits and foreign matter, such as mucous particles, oily substances, and dust particles. All of these particles, though very small, are a potential source of irritation to the contact lens wearer, and should be washed out of the eyes before the lenses are applied. As a rule, a small amount of tap water in the cupped hand will remove the deposits, but if this method doesn't work, a simple, non-prescription type eye wash may be used.

The correct method for cleaning and "wetting out" the lenses is as follows: (THIS IS VERY IMPORTANT.)

1. Wash hands thoroughly, to remove oils, cosmetics, soil, etc. Wash around eyes.
2. Apply a couple of drops of wetting solution to the lens and rub gently but thoroughly into both surfaces of the lens, for 20 or more seconds.

3. Rinse the lens under running water. (Some brands of wetting solution recommend that you apply another drop or two of solution to the lens after rinsing. Check directions on bottle.)
4. Hold the lens up to the light to inspect for dust particles. and to see if lens is properly wetted out. A lens that is correctly wetted out has a smooth film of water over the surfaces. If the water is standing up in droplets or globules on the surfaces of the lens, the lens is not properly wetted out, and the cleaning and wetting procedure should be repeated.
5. Apply lens to the eye.
6. Upon removing the lens, clean with wetting solution, or a specialized contact lens cleaner, (see para. 7. below) and rinse with running water. *It is very important to clean the lenses at the end of the wearing period, because the mucous and oily deposits become much more difficult to remove if they are allowed to remain on the lenses overnight.*
7. A few patients may find that they need to clean their lenses with a specialized contact lens cleaning solution, due to excess mucous or oily secretions on them. If such a product is needed, our office will recommend one to you.
8. After cleaning, store in soaking solution or wetting solution. Never store your lenses dry, or in ordinary tap water.
9. At least once a week, remove the inner, plastic part of your case and wash it with soap and water. Rinse thoroughly. **IT IS EXTREMELY IMPORTANT THAT YOUR CASE BE KEPT CLEAN, TO PREVENT CONTAMINATION OF YOUR LENSES. AN UNCLEAN CASE WILL BREED POTENTIALLY DANGEROUS GERMS.**
10. *Never, never* wet the lenses with saliva, before applying them to the eyes. Saliva contains germs which are relatively harmless in the mouth, but which may be dangerous or harmful to the eye. Always use wetting solution.

**III. The "Wearing According to Conditions" Habit:** There are, at times, certain conditions, either in the environment in which you live or work—or within your own

body—that require you to exercise additional effort and caution in order for you to become a successful contact lens wearer. These conditions, to refer back to our analogy of driving an automobile, are like encountering rain or sleet on the road. Because you are wearing contact lenses, you must use extra care and caution—“slow down”. Some of the conditions that indicate the need for additional caution and extra effort are as follows:

1. Living in a dusty, windy area, or working where there is much dust, smoke, or fumes. As noted above, dust under the lenses can cause abrasions. When dust or grit particles are felt under the lenses, the upper lid should be pulled away from the eye, in an effort to dislodge the particle. If this does not dislodge the particle, the lens must be removed from the eye and the offending material flushed away. *No matter what the occasion, never wear the lens if there is foreign matter under it.* Smoke and fumes, especially chemical plant fumes, are irritating to the eyes of some contact lens wearers. If you experience this difficulty, report this fact to our office for an alteration of wearing schedule.
2. Excess glare may prove irritating to some eyes. This can be overcome by wearing sunglasses over the contact lenses while out-of-doors, or by wearing tinted contact lenses.
3. There are several body conditions that make it more difficult, and in some cases impossible, to wear contact lenses. Such things as colds, hay fever, and sinus trouble increase the sensitivity of the eyes, and may require the wearing schedule to be reduced.

The patient with granulated lids should wash the lids thoroughly before applying the lenses. Otherwise, the tiny, hardened particles of mucus will work under the lenses and cause irritation.

Losing too much sleep, excess crying, and over-indulgence in alcohol also make it more difficult to wear contact lenses.

The patient who has, or develops, diabetes should wear the lenses only with great caution, and only with his physician's permission.

In female patients, greater difficulty in wearing is found during pregnancy. There are also more problems in fitting the patient during pregnancy. Some women find that their lenses are more difficult to wear during their menstrual periods.

4. A few patients may fall into the habit of occasionally sleeping in their lenses, due to forgetfulness, excess fatigue, etc. *Do not wear your lenses while sleeping*, as this can cause discomfort, irritation, and abrasions.

### A Few Persons Cannot Wear Contact Lenses

Even if none of the above conditions is present, a very small percentage of contact lens patients will find that they simply cannot adapt to the lenses. *This is neither the fault of the patient nor of the doctor*; both may do everything possible to make the case successful—yet this cannot be done. The problem is essentially similar to that of the patient who is allergic to penicillin—or to other drugs or foods. The patient is just too sensitive or allergic to the presence of the foreign body (plastic lens or wetting solution) on the eye. *Unfortunately, there is no way to pre-determine this hypersensitivity; it can only be determined by the patient's wearing the lenses over a period of time.* In a few cases, it is possible for a mild sensitivity to become more severe after a few weeks or months of wearing the lenses, forcing the patient to discontinue with them.

In a very few instances, some physical, physiological or even psychological factor, which the examining doctor cannot always detect, may force a patient to discontinue wearing the lenses. Fortunately, these conditions are extremely rare. In cases of this type, let us again emphasize, failure to wear the lenses comfortably and successfully is not the fault of the patient nor of the doctor; it is just that there is a very, very small percentage of patients who, for the reasons stated above, simply cannot successfully adapt to a foreign body on the eye. *The fault lies with neither the patient nor the doctor!*

- IV. The "Semi-Annual Check-Up" Habit: In order that your contact lens wearing be as comfortable, safe and beneficial as possible, it is important for you to have **a regular, semi-annual check-up** of your eyes, your lenses, and your vision. Only in this way can the con-

dition of the corneas and the eyes be determined. This is your responsibility. **DO NOT FAIL TO HAVE THIS DONE.**

- V. **The "Lens Protection" Habit:** Strive always to form the protective habits that will prevent your lenses from becoming scratched, chipped, warped, or otherwise damaged. A lens so damaged is much less comfortable to the eye, and may actually cause an irritation or abrasion.

The following protective procedures, if incorporated into a regular routine, will pay big dividends:

1. When not wearing the lenses, always keep them in the case, in soaking or wetting solution. Never simply drop them in a pocket or pocketbook.
2. Do not leave the lenses where they will be subjected to extremes of heat. Such conditions can cause the lenses to become warped.
3. When removing the lenses, cup the hand underneath the eye to keep them from falling to the floor. If you drop the lens, do not scrape it across a surface to pick it up. This may cause scratches. Wet the tip of the finger and touch the lens; it will adhere to your finger.
4. When you place the lenses in the case, be sure that they are centered and are flat in the case. The lenses can be warped if they are not positioned properly in the case when the case is closed.
5. When cleaning the lenses, *always rub them gently*, so as not to warp or scratch the surfaces. Always wash the hands to remove any dust, grit, or dirt that might scratch the lenses.

To summarize, strive always to protect and preserve the extremely fine polish of your contact lenses. It was put there by many tedious, time-consuming operations and it is very important to the comfort and safety of your eyes.

In conclusion, we would like to say that we are deeply pleased and gratified at your decision to be fitted with our TSO Micro-Sight Contact Lenses and to use them as your visual aid. We know that you will be glad you made this choice because, to our knowledge, there are no finer lenses than today's TSO

Micro-Sight Lenses, no matter how much greater might be the price. Every step in their production is controlled and carefully inspected, resulting in a product that meets the highest standards of today's contact lens quality.

The conscientious optometrists associated with TSO are always ready to help you during the adjustment or adaptation period, or anytime thereafter.

As we said in the beginning, *wearing your contact lenses safely is your responsibility*. The prevention of an eye irritation or abrasion depends upon you, as you are the only one who has control over where, when and how you wear your contact lenses. Just as the safety of driving a car is in the hands of the driver, so is the safety of wearing contact lenses in the hands of the wearer. You are the driver in the driver's seat . . . therefore, Wearing Contact Lenses Safely Is Up To You! IF THERE IS ANY QUESTION IN YOUR MIND NOT COVERED IN THIS LITERATURE, BE SURE TO ASK US ABOUT IT.

A good rule for contact lens wearers to follow:  
**WHENEVER IN DOUBT . . . TAKE THEM OUT**



Dr. ROGERS. We spell out everything that they need to know to protect themselves from any damage to the eye.

Senator WILLIAMS. Are you a member of the American Optometric Association?

Dr. ROGERS. No, sir; I am not. I am a member of the Texas State Board of Examiners in Optometry, however.

Senator WILLIAMS. Thank you.

It has been a long journey for you. You had a long day's wait to get on.

Dr. ROGERS. Thank you very much.

Senator WILLIAMS. Thank you for your cooperation.

We are adjourning at this point until further call.

Dr. ROGERS. Is the hearing over?

Senator WILLIAMS. The hearings are concluded.

We are leaving the record open for statements that have been solicited. The record will remain open for a time.

The hearing is adjourned.

(Whereupon, at 4 :25 p.m., the subcommittee adjourned.)

## APPENDIX

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, INC.,  
*New York, N.Y., April 23, 1964.*

SUBCOMMITTEE ON FRAUDS AFFECTING THE ELDERLY,  
*U.S. Senate, Room G-233,  
Washington, D.C.:*

The enclosed statement is submitted for inclusion in the record of the hearings of the Senate Subcommittee on Frauds and Misrepresentations Affecting the Elderly. I hope that this material will be helpful.

Unfortunately it is not possible to provide photographs and other exhibit material as requested.

Cordially yours,

JOHN W. FERREE, M.D.,  
*Executive Director.*

### STATEMENT ON EYE CARE OF THE ELDERLY, SUBMITTED BY NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, INC.

Through research in the causes of blindness conducted by the national society during the last 30 years, it has been determined that the most important causes of loss of vision in the older age groups are cataracts and glaucoma. The diagnosis and treatment of these diseases require the services of a medical eye specialist.

Therefore, the sale of eyeglasses to older persons who have some difficulty in seeing and have not had the benefit of a medical eye examination may delay early diagnosis of diseases such as glaucoma and cataract. In the instance of glaucoma, early diagnosis and prompt medical care are imperative in preventing loss of vision.

The only recommended method of treatment for cataracts, responsible for 17 percent of all blindness, is surgery. If patients are misled by claims made that various salves and drops will dissolve cataracts, they may delay in accepting the recommendation for surgery, which will seriously affect its potential success.

It may be of concern to the committee to know that the prevalence of blindness in the age group 40 to 64 is 237.5 per 100,000 of the population; this figure increases to 1,098 per 100,000 of the population in the 65 and over age group. These data indicate the urgent need for protecting senior citizens from the influence of information directed to encouraging self-diagnosis and treatment through the use of home remedies; and the purchase of spectacles, contact lenses, and other visual aids without examination by a qualified practitioner.

Attention should be called to the need to emphasize the warnings on the possible deleterious effects on eye conditions of some drugs sold over the counter. Older people should be urged to carefully read labels and informational material packaged with drugs sold over the counter.

It is highly desirable that protective eyewear which meets standards established by the American Standards Association be prescribed for persons in all age groups who require corrective lenses and for those persons not wearing protective lenses when engaging in a hazardous activity such as home workshops, operating power lawn mowers, pruning, etc.

Adequate support should be given to those agencies charged with responsibility for reviewing advertising claims that are inimical to the health and well-being of the public. For example, the use of lenses or glazing materials which are claimed to improve visibility for night driving under the pretext of reducing glare. Scientific investigation has proven that such materials reduce visibility and therefore create a hazard.

The attached publication, "Your Eyes for a Lifetime of Sight," carries the definitions used by U.S. Department of Health, Education, and Welfare for an ophthalmologist (oculist), optometrist, and an optician.

CONTACT LENS SOCIETY OF AMERICA, INC.,

*Philadelphia, Pa., April 23, 1964.*SUBCOMMITTEE ON FRAUDS AFFECTING THE ELDERLY, SPECIAL COMMITTEE ON AGING,  
U.S. Senate, Washington, D.C.:

Please find enclosed my statement, in behalf of the Contact Lens Society of America, to your committee's investigation relative to contact lenses.

As pointed out in my statement, the membership of our society, though rather small, is responsible through its membership for a great part of the development of corneal lenses. Much of our membership depends solely for their livelihood on the fitting of contact lenses on prescription of physicians. Our very existence is being threatened by a much larger group who do not adhere to medical prescription of contact lenses. This threat is very aptly stated in the American Optometric Association's statement.

For these reasons our society is most grateful for this opportunity you provided us to prepare and present the enclosed statement.

Very truly yours,

JOSEPH W. SOPER.

STATEMENT OF JOSEPH W. SOPER,<sup>1</sup> REPRESENTING THE CONTACT LENS SOCIETY OF AMERICA, INC.

The membership of the Contact Lens Society of America consists of technicians who work solely on prescription of eye physicians. A portion of the membership are independent opticians while others work solely in physicians' offices. The creed adhered to by society members includes that they, "will fit no one with a contact lens without the consent and knowledge of a qualified doctor of medicine." Members, "make no attempt to determine the refractive power of the eye, nor perform services other than those delegated directly to them by the prescribing physician."

Reportedly 6 million people have been fitted with contact lenses, 4 million of this number were fitted prior to 1960. The vast majority of these people were fitted by a relatively small group of individuals consisting of physicians, optometrists and society members. These society members include the inventor of the corneal lens, as well as many of the individuals credited with much of the research and development of present-day custom fitting techniques. They also were responsible for fitting a large percentage of pre-1960 contact lens wearers. Since that time there has been a tremendous upsurge in the number of lenses fitted and the number of people fitting them.

This increase in fitters has been predominately in ophthalmological and optometric groups. The latter, who are not medically trained nor supervised, are outspokenly opposed to technicians being allowed to continue to perform their services for the physicians. We do not wish to engage in the pros and cons of optometry's right to prescribe and to fit contact lenses, but we will say that we will not quietly tolerate this group's attack on our abilities and rights to fulfill the prescription directed to us by a physician. We further defend the right of the physician to decide whether he will do the mechanical duties of fitting the lens himself, or delegate it to a technician on his staff or to an independent optician or even an optometrist. This prerogative should be maintained and strengthened, as certainly the physician of all people is dedicated to his creed and action for the welfare of the public.

We do agree that there are certain dangers associated with contact lenses, as was pointed out recently in publications. Following the most recent report, which brought much public attention to the contact lens industry, we made the following statement: "The executive committee of the Contact Lens Society of America (an organization composed of skilled technicians who fit contact lenses only on prescription from and under the supervision of a physician) agrees that there are hazards involved in the wearing of contact lenses. We further state that scientifically designed and individually custom fitted lenses can be worn with safety, provided the wearer realizes that, unlike spectacles, contact lenses require continuing care, especially proper handling, hygiene, wearing, and periodical evaluating. Certainly the public must be made cognizant of the danger involved in wearing poorly fitted contact lenses."

<sup>1</sup> President, Contact Lens Society of America; staff member, contact lens section, Baylor University College of Medicine. Past president, Contact Lens Association of Texas. Coauthor of textbook, "Corneal Contact Lenses."

The reports mentioned previously have been labeled by some as "scare stories." We cannot agree with this attitude. These medical reports are of utmost value to everyone in this industry to aid them in evaluating and improving materials, techniques, and procedures. Certainly progress is never accomplished by only examining success and completely ignoring failures. These investigations should be encouraged and continued until enough experience has been gained in the fitting and wearing of contact lenses.

It is the recommendation of the executive committee of this society that if proposals for Federal legislation relative to contact lenses are to be made by the Senate Subcommittee on Frauds and Misrepresentations Affecting the Elderly, that such legislation, for the safety of the public, should be of a nature to insure and strengthen the physician's role in fitting and prescribing of these devices. We appreciate the opportunity to submit this statement.

NEW YORK, N.Y., April 30, 1964.

Re ready-to-wear spectacles.

HON. HARRISON WILLIAMS,  
New Senate Office Building,  
Washington, D.C.

MY DEAR SENATOR WILLIAMS: Although I have filed the required copies of this memorandum with your Subcommittee on Frauds and Misrepresentations Affecting the Elderly, I am taking the liberty of leaving this additional memorandum directly with your office.

I respectfully call to your attention the opinion of Dr. John Scillieri of Paterson, N.J. This is of particular value since he is a distinguished member and officer of the Medical Society of the State of New Jersey, the Passaic County Medical Society, and the New Jersey Academy of Ophthalmology and Otolaryngology. There are also photostatic exhibits of letters from the National Association of Optometrists & Opticians and from Dr. Robert Hamilton Peckham in opposition to some of the legislation Dr. Nurock's organization has proposed in New Jersey, which is pertinent to the matters discussed at your hearing.

I sincerely hope you will find the opportunity to read this memorandum and examine the ready-to-wear spectacles I have handed you herewith. These, of course, are reading glasses and should be tested that way.

Sincerely yours,

ROBERT L. GRAHAM, Jr.,  
Counselor at Law.

#### MEMORANDUM ON READY-TO-WEAR READING GLASSES BY PENNSYLVANIA OPTICAL CO.

##### STATEMENT

It is most fitting that your committee, dedicated to the care and protection of the aged, be informed of the service rendered to our elder citizens through the use of ready-to-wear spectacles, popularly known as "grandma" glasses.

At the hearing on April 6 before this committee a considerable amount of unanswered testimony was submitted by officers and affiliates of the American Optometric Association, Inc., which by innuendo or inaccuracy might have created an erroneous conclusion with regard to these products.

This memorandum is respectfully submitted by the Pennsylvania Optical Co., which manufactures and supplies the greater proportion of this type of glasses. These are primarily available in the variety and department stores, and are used by hospitals, welfare departments, and institutions for our older residents.

##### POINT 1. THESE GLASSES PROVIDE THE NECESSARY AID TO MIDDLE-AGED VISION

Both ophthalmologists (physicians) and optometrists recognize (p. 297 of testimony) that with the advancing years the lens of the eye loses its elasticity and the "near point" of clearest vision is farther and farther away at each birthday. This is presbyopia, a perfectly natural development of age in the body.

"For the presbyopic, that is to say the person past the age of 40 years, a *separate plus strength lens* is necessary in order to permit him to read with comfort; in other words to make up for the loss of accommodation (elasticity of the lens) that comes on gradually with age." (Italic ours.) "The Truth About Your Eyes" by Derrick Vail, M.D.

Our forebears used a hand magnifier to provide this plus lens. This prompted Charles Rhein Essick, M.D., a professor at Johns Hopkins University, to realize that a great service could be rendered to the older folk by putting magnifiers in

convenient spectacle frames, thus creating, in effect, a two-eyed magnifying glass that leaves the hands free for use in reading and close work. He and his father, William Essick, created the Pennsylvania Optical Co. in 1886 to put his idea into manufacture and distribution. Since that time the public has purchased and used over 600 million pairs of these spectacles without a single injury to the eye and with vast relief to the aged at prices commensurate with limited incomes; i.e., one-tenth to one-quarter of the cost of prescription glasses.

**POINT 2. THESE READY-TO-WEAR READING GLASSES SERVE THE PUBLIC AND CANNOT INJURE THE EYES**

Optometrists (testimony, p. 27) and physicians (exhibit A) agree that the wearing of these self-selected glasses cannot injure the eye.

Attention is respectfully called to the supporting opinions of two of the country's leading experts on eye care and ophthalmology; i.e., John Scillieri, M.D., eminent ophthalmologist (exhibit A) and Robert Hamilton Peckham, Ph. D., professor of ophthalmology (exhibit B). Both of these highly qualified gentlemen have written letters this month in opposition to New Jersey bill S. 202 to which Dr. Nurock referred (p. 355), which is sponsored by the New Jersey Optometric Association to outlaw the sale of ready-to-wear magnifying spectacles. No State prohibits the sale of ready-to-wear reading glasses. Some 30 years ago, or more, Massachusetts, Minnesota, New York, and Rhode Island enacted laws which are still on the statute books requiring an optometrist to be present at the place where ready-to-wear reading glasses are sold.

The National Association of Optometrists and Opticians, Inc., believe that it is in the consumers interest to have freedom of choice to buy ready-to-wear or prescription glasses, and that the sale of these "grandma" glasses serves to keep down the cost of prescription optical wear (exhibit C). On the other hand, the American Optometric Association and its State affiliates, for over 30 years, have been continuously trying to have legislation enacted to deprive the middle-aged and older people of the right to purchase, over the counter, these two-eyed magnifying spectacles. Since it is admitted that the wearing of these spectacles cannot injure the eye, could economics and competition be the motivating cause?

The legislators recognize the valued and inexpensive comfort such glasses provide, since they have rejected every attempt to enact these destructive proposals.

The optometrists testified to concern that the self-selection of these magnifiers may deceive the purchaser into thinking he has cured himself of a possible eye ailment. It is hard to believe that a reasonably intelligent person could fool himself to this extent. Confusion prevails, however, between a doctor of optometry, authorized to measure the eye (to refract), and a physician, trained and authorized to refract, diagnose, and treat eye disease.

Another concern of the optometrists seems to be that ready-to-wear reading glasses have the same power of magnification in each lens, whereas the vision of the wearer's eyes may be different. The answer is simple. These magnifying spectacles leave each eye exactly the way it is. There is no attempt at correction no more than there is when a hand magnifying glass is used. If one sees better then one is helped—otherwise the glasses are rejected.

Charles E. Jaeckle, M.D., speaking on behalf of the medical profession before the Federal Trade Commission on the occasion of the preparation of a Trade Practice Code for the Optical Products Industry, said.

"The medical profession does not endorse the principle of self-treatment of any condition. Neither does it recommend the prohibition of self-treatment by legislation unless there is a clear danger to the public.

"Many people buy aspirin and delay going to a doctor. But it has not been proposed that an aspirin be made unavailable.

"No glasses will harm the eye, cause any permanent effect, with the possible exception of young children who are never involved in the situation that has been under discussion here (the sale of ready-to-wear glasses)."

As a result of this hearing the Federal Trade Commission recognized the value of these "nonprescription magnifying spectacles \* \* \* to persons approximately 40 years of age and older who do not have astigmatism or diseases of the eye and who require only simple magnifying or reducing lenses \* \* \*" (rule 2 of the Trade Practice Rules for the Optical Products Industry, promulgated June 30, 1962).

POINT 3. THESE GLASSES ARE ATTRACTIVE AND EFFECTIVE AND SOLD AT A FRACTION OF THE COST OF PRESCRIPTION GLASSES

The lenses in these glasses are of the highest quality optical glass. The frames are fashionable and cosmetically designed. The cost ranges from between \$1.50 to \$4. (See Senator Keating's "Little Lady," p. 244.) They provide comfortable vision aid for those with limited income who need attractive magnifiers. They serve the aging.

POINT 4. THE FRAMES OF OVER-THE-COUNTER GLASSES ARE NONINFLAMMABLE

To Senator Keating's question with regard to the inflammability of eyeglass frames, Mr. Winton B. Rankin of the Food and Drug Administration stated expressly that this is a very unusual occurrence since "frames manufactured in this country are made from a relatively noninflammable material." This is particularly true of the frames used in the manufacture of ready-to-wear glasses, most of which are made by the Pennsylvania Optical Co., which uses a cellulose acetate material which is noncombustible.

There are at this time a few frames of foreign manufacture which on occasion may be found on any kind of spectacles. These are all imports.

POINT 5. FURTHER RESTRICTIONS ON THE SALE OF READY-TO-WEAR GLASSES ARE UNNECESSARY

No matters have been raised at this hearing that were not thoroughly discussed and determined at the hearing before the Federal Trade Commission.

Respectfully submitted.

ROBERT L. GRAHAM, Jr.,  
*Attorney for Pennsylvania Optical Co.*

NEW YORK, N.Y., April 30, 1964.

EXHIBIT A

PATERSON, N.J., April 3, 1964.

Re Senate bill No. 202

HON. ANTHONY J. GROSSI,  
*New Jersey State Senate  
State Capitol, Trenton, N.J.*

MY DEAR SENATOR GROSSI: I note that you are cosponsor again this year of S. 202, which is identical with S. 290 introduced by you in 1962. Both of these bills propose an amendment to expand the definition of optometry to include all of those "who shall offer and market for sale at retail to the general public spectacles or eyeglasses containing other than plano lenses" followed by a provision exempting ophthalmic dispensers, who provide spectacles pursuant to prescription.

Permit me to introduce myself and state my qualifications.

For more than 28 years I have been a practicing ophthalmologist (eye physician and surgeon), qualified under the laws of the State of New Jersey by education and experience to diagnose and treat, medically and surgically, all manner of eye diseases or eye problems. In addition to my medical and college degrees I have been honored by election to the Passaic County Medical Society, Medical Society of the State of New Jersey, American Medical Association, American Academy of Ophthalmology and Otolaryngology, and the New Jersey Academy of Ophthalmology and Otolaryngology. I am a fellow of the International Academy of Surgeons, diplomate of the American Board of Ophthalmology, and I am on the staff of the Paterson General Hospital.

The opinion that I express herein is based on almost daily experience in my professional work. I speak as an individual professional man, not as an officer of any of the societies or organizations with which I am affiliated.

The effect of Senate bill 202 would be to prevent anyone, except a physician or optometrist, from selling ready-to-wear reading glasses. To my knowledge the practice of selling magnifiers or plus lenses in convenient frames, as merchandise, has been carried on for over a half century here in New Jersey. In my experience, I have never known of anyone who was harmed or injured by the wearing of these glasses.

As a physician I believe the ideal situation would be to have a law requiring everyone to have a periodical physical examination and a prescription from a physician for every drug that is sold. We know that aspirin is sold in tobacco shops, and cathartics at newspaper stands. This is what is known as innocuous

self-medication and one of the most innocuous is the self-selection of magnifying glasses in convenient frames to help those who are growing older to see better. I say this is the most innocuous because even though they may be too strong, or too weak—they will never harm the eyes, either temporarily or permanently.

The wearing of glasses does not accomplish an anatomical change in the eye. The primary purpose is to help one to see better. Prescription glasses aim to provide the best possible accommodation and focus. When ready-to-wear glasses help a person to see better they have served at least partially the purpose of spectacles.

As a person grows older the accommodation of the lens of the eye is less elastic. This is a natural phenomenon with advancing years, and there is nothing that can be done about it. A magnifying or plus lens provides the necessary accommodation, and brings the light into better focus and thereby helps them to see better. This is what these ready-to-wear glasses are—magnifiers in convenient frames.

I fully realize that the lenses of these ready-to-wear spectacles are exactly the same strength and that one's eyes are usually different. A prescription provides the different strengths needed. The magnifying glasses make no correction but they may help you to see better. If you are myopic, have any astigmatism or acute disease of the eye, you just won't wear them, but if worn, I concur with Dr. Derrick Vail that no permanent injury to the eye is effected.

I see no justification for this bill from a professional point of view. From the point of view of the public I recognize that for many reasons if this bill is enacted, those who now derive some comfort from magnifying spectacles will be deprived of that comfort, and be obliged to pay for the cost of an examination and prescription from a physician or optometrist, and the grinding and fitting of glasses by an optician.

In my opinion the bill should not become law.

JOHN SCILLERI, M.D.

P.S.—As a matter of fact, all bifocal segments of any pair of glasses (reading portions) is nothing more than a +2.00 to +2.50 D magnifying glass added to the normal prescription one requires. This is similar to the "plus" lens of the ready-to-wear glasses sold over the counter. The patient is doing himself no harm except depriving himself of the normally corrective glasses for his refractive error in his eyes.

#### EXHIBIT B

BETHESDA, MD., April 8, 1964.

HON. GEORGE B. HARPER,  
Layton, N.J.

DEAR SENATOR HARPER: In 1962 I had the opportunity to appear at a public hearing in the State capitol at Trenton on a bill that is identical to the one under discussion this year, namely S. 202. Since the purpose of this bill is to outlaw the sale of ready-to-wear reading glasses, I respectfully request your consideration of this letter.

I am qualified to speak on this subject because I am a doctor of philosophy in physiological psychology, Johns Hopkins University, 1933. As a faculty member of Temple University School of Medicine I was associate professor of research ophthalmology from 1934 to 1952. My duties included the teaching of optics and statistics to medical students, basic research into the causes of blindness, and the correction of ocular defects. At present I am vice president of the Eye Research Foundation of Bethesda, Md., a nonprofit trust devoted to studying the causes of blindness through medical research.

The problem of ready-to-wear reading glasses has been under my scrutiny since 1936. The following specific questions will be answered below, to the best of my ability and knowledge.

1. What are ready-to-wear glasses?
2. Can they be harmful to the eyes of wearers?
3. Are they of good quality?
4. Why should they be available to the public?

1. Ready-to-wear glasses are made in a single type only. They are plus spheres, or magnifying glasses, of a type essential to good vision during reading and close work for those persons whose eyes are normal, but elderly. This

condition is called presbyopia, or old-age eyes. Ready-to-wear glasses are in no essential manner different from spectacles prescribed by eye specialists for the same purpose.

2. No glasses can harm the eyes, even when eye specialists prescribe, as they sometimes cannot avoid, the "wrong glasses." Eyeglasses are not in contact with the delicate tissues of the eye. If the ready-to-wear glasses improve vision, they are purchased only after actual trial by the patient himself, at low cost, and with no risk. If an adequate pair cannot be found by the patient at the counter, the trouble with the purchaser's eyes cannot be corrected by ready-to-wear glasses. Much has been said about the failure of the patient to have received an eye examination when he purchases ready-to-wear glasses. It must be emphasized that likewise an optometric examination, however time consuming and however expensive, is not a medical examination. Optometrists are not doctors of medicine. The most serious causes of blindness—cataract and glaucoma—must be diagnosed and treated by medical practitioners, who alone are licensed to use the essential drugs required for diagnosis and treatment.

3. Ready-to-wear spectacles are of the same quality, made of the same optical glass, to the same rigid specifications, as are prescription spectacles. They are made in only a few shapes, thus avoiding the costs of fancy, unique, and expensive styles. These lenses are mounted in sturdy frames, again in limited styles. The lenses are clearly marked in focal length and frequently in dioptric powers also. The lenses are selected by the purchaser in the same manner as if he were in an eye specialist's office. The purchaser decides, for himself in both cases, which is better, "this glass," or "this glass." If none of the available ready-to-wear reading glasses helps the purchaser to read, he buys none of them. If he finds one which will help him to read, his problem is solved.

4. The reasons why such ready-to-wear reading glasses should be available for unrestricted purchase are purely and simply economic. At a time when even legitimate drug prices are under congressional investigation against mulcting the public, we have here a clear example of an attempt to legislate greater expense for the very people who can least afford it—middle-aged and elderly workers whose only ophthalmic difficulty is their increasing age. The enforced ocular examination which is emphasized may not be a true or legitimate medical examination, even if the victim of this enforced practice believes this to be true. To this cost of from \$10 to \$20 is added the greater cost of tailormade spectacles, plus the temptation to spend money on style and fashion, adding another \$30 or more. In the end, those who can least afford it must spend \$50 or more instead of \$5 or less for exactly the same service that has been beneficial to millions of persons for the past 50 years.

ROBERT H. PECKHAM, Ph. D.

NATIONAL ASSOCIATION OF OPTOMETRISTS & OPTICIANS, INC.,

New York, N.Y., April 6, 1964.

HON. FREDERICK J. SCHOLZ,  
Camden, N.J.

DEAR SENATOR SCHOLZ: The National Association of Optometrists & Opticians representing optometrists, opticians, and optical firms in the United States has become increasingly apprehensive of legislation being proposed in various States which places greater and greater limitations and restrictions on the public's right to make a free choice as to the type of eye care one wishes and the place where this eye care may be obtained. Senate bill 202 now before you attempts to further enforce this type of restriction and in so doing automatically will raise the cost of eyeglasses to a substantial number of the people of New Jersey. These proposed restrictions are not justified or warranted by any current information or research.

In the recent past, stringent laws have been passed governing the freedom of practice of optometry in the State of New Jersey. All of these regulations have related directly to the restriction of practice, trade, and competition. The result is:

- (1) Cost of eyeglasses is increasing in New Jersey.
- (2) An estimated 25 percent of the New Jersey licensed optometrists are not practicing their profession in the State of New Jersey and many are occupied in other trades and occupations. This causes many New Jerseyites to migrate into neighboring States to seek optometric eye care.



These facts serve as further evidence of the deleterious effects of such restrictive legislation.

In the interest of the consumer's freedom of choice and maintaining reasonable and practical costs of eyeglasses, the NAOO respectfully requests your vote to reject senate bill 202.

Very truly yours,

GALEN E. ROWE, Jr., O.D.,  
*President.*

STATEMENT OF A. G. JEFFERSON, PRESIDENT OF THE GUILD OF PRESCRIPTION  
OPTICIANS OF AMERICA, INC.

The Guild of Prescription Opticians of America has asked for the right to have the following statement incorporated into the official minutes of the Senate Subcommittee on Frauds and Misrepresentations Affecting the Elderly because the officers of the guild feel that prior testimony given before the subcommittee on March 9 and April 6, 1964, is in itself misleading and not representative of current practices in the field of eye care in the United States today.

First, we would like to state just who we are. The Guild of Prescription Opticians is an association of more than 3,000 dispensing opticians throughout the country and nearly 600 firms located in some 500 cities. Guild opticians represent the highest ethical standards in the dispensing of optical products on the prescription of the ophthalmologist and they yield to no person or group, medical or occult science, in their desire to see that the highest standards are maintained in the field of optical dispensing.

One of the purposes of this hearing, as we understand it, was to get an up-to-date report on the cases of blindness which, according to the Food and Drug Administration, had apparently resulted from impurities in plastic used for contact lenses.

In the statement to the subcommittee of the American Optometric Association, in part an outgrowth of the inquiry on contact lenses, certain implications and innuendos were made which might lead the subcommittee to believe that the optician is an unqualified, unprincipled layman who is prescribing and fitting contact lenses without regard to any medical considerations that might be involved.

The following facts in connection with the guild and the practices of its members may be of interest to this subcommittee:

(1) The guild's code of ethics forbids its members fitting contact lenses to any person except and until that person has had a complete medical examination by an ophthalmologist (eye physician) and only then on the written prescription of that ophthalmologist and under his supervision. A guild optician does not initiate the prescribing of contacts nor does he mislead a contact lens patient. The guild believes that contact lens fitting is a medical function; it should begin with the doctor and end with him. The patient is referred to the optician by the ophthalmologist and when he has completed the technical duties assigned by the ophthalmologist the patient is referred back to the ophthalmologist for a thorough check and dismissal, as he see fit. If a person walks in off the street for contact lenses a guild optician will not fit him.

(2) In fitting contacts we consider ourselves in the same relation to the doctor as a nurse or other technicians to whom he assigns duties. We are "contact lens technicians" and only do what the doctor authorizes. We might also be analogized to the manufacturer and fitter of a prosthesis where a person has lost an arm or leg. In either case the orthopedic surgeon prescribes the type or kind of artificial limb which is desired, and although measurements are taken by the manufacturer and fitter, the final fitting and approval rests with the doctor and not with the technician to whom the task has been assigned.

(3) If we learn of a guild optician fitting contacts in any other manner he will be immediately censured and if he persists will be expelled from the guild.

(4) Notwithstanding the statements of the American Optometric Association in classifying us an "unlicensed, untrained, and unsupervised laymen" many of us, yes, most of us, took the same contact lens fitting course that the optometrists took. In fact when I took my training there was an M.D. and an O.D. taking the same course.

(5) We consider the part we play in fitting contact lenses as purely technical and perfectly safe, as time and experience have proven, when performed in cooperation with and under the control of an ophthalmologist (eye physician).

No medical judgment is exercised by the optician. The optician may make measurements both of the human eye and of the lens after it is prepared. As a trained technician he may instruct the patient in the proper method of inserting the lenses. He may instruct him in the care and protection of the lenses when not in use. The fact remains, however, that the final fitting—that is the medical approval of the whole procedure—rests with the ophthalmologist.

Despite anything that may have been said in any other statement, opticians do not prescribe contact lenses and cannot and will not come into the picture unless and until they have received from a properly licensed ophthalmologist a prescription setting forth the needs of the patient; nor will the optician accept the final responsibility for the fitting and always instructs the patient to return to the ophthalmologist for final approval.

The statement by anyone that opticians are prohibited in all 50 States and the District of Columbia from fitting contact lenses is absolutely false, and the subcommittee should take due note of this willful misrepresentation. I happen to live and work in one of those States, Virginia, where this is not true.

The guild stands ready, willing, and able at all times to provide any information which will be of help to the Congress in seeing to it that the citizens of this country shall receive the best possible eye care.

#### MEMORANDUM

To: Subcommittee on Frauds and Misrepresentations Affecting the Elderly.

Subject: Ready-to-wear reading glasses.

From: American Optometric Association, New Jersey Optometric Association, International Association of Boards of Examiners in Optometry.

STATEMENT BY DR. E. C. NUROCK, OPTOMETRIST, TRENTON, N.J., CHAIRMAN, ADVISORY LAW COMMITTEE, INTERNATIONAL ASSOCIATION OF BOARDS OF EXAMINERS IN OPTOMETRY

On April 6, 1964, representatives of the American Optometric Association and the International Association of Boards of Examiners in Optometry appeared before your committee and submitted factual information in the interest of the public health and welfare and particularly our elder citizens and especially concerning vision care.

Subsequently, the Pennsylvania Optical Co., who admittedly manufacture and supply the greatest proportion of readymade glasses, submitted a memorandum defending the sale of these items. Obviously, their interest is in protecting their enterprise with very little if any concern for the health and welfare of the public who purchase their merchandise.

Exhibits A and B attached to the memorandums submitted by the Pennsylvania Optical Co. were used in opposition to the passage of a bill pending before the New Jersey State Senate earlier this year. The passage of the bill was supported by six ophthalmologists, the labor unions, and numerous civic organizations interested in the prevention of blindness. A list of those who supported the passage of the bill is hereto attached.

In point 1, Mr. Robert C. Graham, Jr., the attorney for the Pennsylvania Optical Co., described presbyopia as the normal loss of accommodation that comes on gradually with age, but he makes a completely misleading statement when he indicates that a pair of plus lenses in a frame serve the same function as a hand magnifier. The latter held at a certain distance away from the object being viewed enlarges the size of the object (reading material) and makes it easier to see. Plus lenses in a frame are not for the purpose of enlarging the object being viewed but to assist the eyes in bringing the object into proper focus. The following is a statement from John H. Carter, Ph. D., research associate professor at the Pennsylvania State College of Optometry.

"Of course, the assertion that readymade reading glasses constitute simply a convenient form of magnifier is absurd. The function of a magnifier is to enlarge an already in-focus retinal image. The function of reading glasses is to replace that portion of the eye's focusing ability which has been lost due to presbyopia. As such, reading glasses allow good vision at near not by enlarging a clear image but by converting a blurred image into a clear image. Thus, reading lenses compensate for a defect within the eye and do not function at all after the fashion of a hand magnifier."

Mr. Graham mentions Charles R. Essick, M.D., the originator of the Pennsylvania Optical Co. in 1886. Fortunately, for the public, in the field of eye care the professions of optometry and ophthalmology have had fantastic developments since that time, and nearly fourscore years later we should not expose the public to inferior substitutes (grandma glasses) for scientific eye care. The Pennsylvania Optical Co. memorandum talks about "injury." This is a matter of semantics. The utilization of the company's product results in neglect due to a false sense of security people have when they derive some temporary improvement by using "grandma glasses."

At the New Jersey public hearing on the question of readymade glasses, practically every organization interested in prevention of blindness either sent representatives or presented statements in support of legislation to eliminate this great danger.

The U.S. Supreme Court in the case of *Lee v. Williamson*, Nos. 134 and 185, October term, 1954 (March 28, 1955) stated in a unanimous decision in dealing with S. 4 of the Oklahoma Act which reads as follows:

"No person, firm, or corporation engaged in the business of retailing merchandise to the general public shall rent space, sublease departments, or otherwise permit any person purporting to do eye examination or visual care to occupy space in such retail store."

"It seems to us that this regulation is on the same constitutional footing as the denial to corporations of the right to practice dentistry. *Semler v. Dental Examiners*, supra 611. It is an attempt to free the profession, to as great an extent as possible from all taints of commercialism. It certainly might be easy for an optometrist with space in a retail store to be merely a front for the retail establishment. In any case, the opportunity for that nexus may be too great for safety, if the eye doctor is allowed inside the retail store. Moreover, it may be deemed important to effective regulation that the eye doctor be restricted to geographical locations that reduce the temptations of commercialism. Geographical location may be an important consideration in a legislative program which aims to raise the treatment of the human eye to a strictly professional level."

As recently as June of this year Rabbi Abraham J. Heschel in addressing the American Medical Association's annual meeting in San Francisco on a program entitled, "The Patient as a Person" said, "In our acquisitive society, the ambition to get rich is generally regarded as a most respectable trait. \* \* \* There are some callings where such an ambition is a dangerous impediment; among these I would include ministers, teachers, lawyers, and physicians,"—and may I add, optometrists—both optometrists and physicians are dedicated to protecting and improving the greatest of God's given blessings—the power to see. In carrying out this mission, there is no place for commercialism as exemplified by the Pennsylvania Optical Co. in the sale to the elderly of ready-to-wear spectacles.

There is no confusion concerning a doctor of optometry as stated by Mr. Graham:

"Confusion prevails, however, between a doctor of optometry, authorized to measure the eyes (to refract), and a physician, trained and authorized to refract, diagnose, and treat eye disease."

Mr. Graham has made every effort to confuse the public. The New Jersey Supreme Court has determined, after much opposition from others who would like to confuse the issue, that doctors of optometry are qualified to recognize and diagnose eye diseases.

The fact that more than 80 percent of the population requiring prescription glasses have difference in refraction in the two eyes is glossed over by Mr. Graham by saying, "If one sees better, then one is helped—otherwise, the glasses are rejected." It has long been well established that because one sees better with a pair of glasses does not mean they are correct for that individual.

The New Jersey State Board of Optometrists in 1955 amended their act to read:

"Prior to prescribing for or providing eyeglasses or spectacles a complete minimum examination shall be made of the patient to determine the correct lenses necessary for such a patient. The requirements of such minimum examination shall be defined by rule or regulation of the New Jersey State Board of Optometrists."

They promulgated rule 8, requiring a minimum examination procedure. The validity of this rule was unanimously sustained by the New Jersey Supreme Court. This rule provides that every practicing optometrist in New Jersey must make an examination to determine the presence or absence of ocular pathology

and many other tests before he can prescribe glasses or any other corrective measures. If the courts have agreed that this is in the interest of the public health and welfare, how can anyone condone self-prescribing by an individual?

To advertise that readymade glasses are not suitable for people who have astigmatism or diseases of the eye is utterly absurd. No individual can determine whether or not he has astigmatism or some other disease of the eye unless he is given a complete examination by a qualified optometrist or physician.

## PROPOSERS

1. Henry C. Fattell, M.D.
2. Charles A. Perera, M.D.
3. John Insabella, M.D.
4. Ned Shaw, M.D.
5. Irvin Levy, M.D.
6. Michael Curcio, M.D.
7. Sidney S. Boyers, M.D.
8. E. C. Nurock, O.D., secretary-treasurer, New Jersey State Board of Optometrists.
9. Herbert L. Moss, O.D., president, New Jersey Optometric Association.
10. Paul Ellin, O.D., chairman, board of trustees, New Jersey Optometric Association.
11. Robert MacLeod, O.D., president-elect, New Jersey Optometric Association.
12. Phillip Jackman, O.D., president, New Jersey State Board of Optometrists.
13. Martin R. Snook, O.D., past president, New Jersey State Board of Optometrists.
14. Leslie Mintz, O.D., first vice president, New Jersey Optometric Association.
15. Andrew F. Fischer, O.D., administrative director, New Jersey Optometric Association.
16. Franklin Foote, M.D., commissioner, Connecticut State Department of Health.
17. John W. Ferree, M.D., executive director, National Society for the Prevention of Blindness.
18. Joseph H. Kler, M.D., president, New Jersey State Commission for the Blind.
19. United Steelworkers of America, AFL-CIO.
20. Teamsters Industrial and Allied Workers, Local Union No. 97.
21. Local 447, IUE, AFL-CIO.
22. Local 575, International Brotherhood of Teamsters-Chauffeurs-Warehousemen & Helpers of America.
23. United Optical Workers Union, AFL-CIO.
24. National Society for the Prevention of Blindness.
25. Russell Sage Foundation.
26. Better Vision Institute, Inc.
27. Vision Conservation Institute, Inc.
28. Enterprises for the Blind, Inc.
29. Trenton Association for the Blind.
30. New Jersey State Commission for the Blind.
31. Connecticut State Department of Health.
32. Pennsylvania State College of Optometry.
33. Ohio State University, School of Optometry.
34. Indiana University, Division of Optometry.
35. Martin Noble, O.D.
36. Meyer J. Burt, O.D.
37. Industrial Home for the Blind, Brooklyn, N.Y.
38. New Jersey Optometric Association.
39. New Jersey State Board of Optometrists.
40. New York Optometric Center, Alden Haffner, O.D., executive director.
41. Massachusetts College of Optometry.