

Chairman L. A. Seltzer and Vice-Chairman Ambrose Hunsberger were then installed as officers for the ensuing year.

S. L. Antonow as a first order of business made a motion that a rising vote of thanks be given the outgoing Chairman of the House of Delegates and the Committee on Resolutions. The motion was generally seconded by rising vote.

Chairman L. A. Seltzer announced the Committee on Place of Meeting, Committee on Patents and Trade Marks, and the Committee on Status of Pharmacists in Government Service. They follow:

Place of Meeting.—*Chairman*, T. J. Bradley, Boston, Mass.; R. A. Lyman, Lincoln, Neb.; W. F. Rudd, Richmond, Va.; C. G. Merrell, Cincinnati, Ohio; Laird J. Stabler, Los Angeles, Cal.

Patents and Trademarks.—*Chairman*, F. E. Stewart, Philadelphia, Pa.; S. C. Henry, Chicago, Ill.; F. W. Nitardy, Brooklyn, N. Y.; L. F. Kebler, Washington, D. C.

Status of Pharmacists in Government Service.—*Chairman*, E. F. Cook, Philadelphia, Pa.; A. C. Taylor, Washington, D. C.; C. C. Cannon, Baltimore, Md.; R. P. Fischelis, Trenton, N. J.; C. L. Eddy, New York, N. Y.

The final session of the House of Delegates was then adjourned.

COMMITTEE REPORTS

REPORT OF COMMITTEE ON COLORED GLASS CONTAINERS.

BY H. V. ARNY, CHAIRMAN.

NOTE: At the 1926 meeting of the Section on Dispensing of the AMERICAN PHARMACEUTICAL ASSOCIATION a discussion of the deterioration of certain chemicals by light rays was discussed and an outcome of the discussion was the authorization of the creation of a committee to study the problem. This committee, now known as the Committee on Glass Containers, as appointed by Chairman Nichols consisted of H. V. Arny of New York, I. A. Becker of Chicago and Fitzgerald Dunning of Baltimore. The results of their first year of work is outlined below.

Your committee, upon receiving official notification of its appointment, began operations on November 1, 1926. Realizing that a large field of work had been entrusted to us, we early agreed that the efforts of our first year should be devoted to organization. Whether we have accomplished this aim, the following report will show.

At the outset of our work we decided upon the following general principles:

1. While it is generally accepted that amber glass is the proper type of glass for delicate chemicals we take the protecting value of such glass too much for granted.
2. The mere fact that a certain glass is colored yellow does not necessarily indicate that such glass will give adequate protection against the actinic action of day-light and other sources of light.
3. Our committee should therefore investigate the light-protecting properties of various types of glass containers; not merely those made of amber glass but also those of other colors.
4. The study should also include the amount of protection afforded or deterioration produced by light rays from ultraviolet and infra-red regions of the spectrum.
5. The field is too vast to be satisfactorily solved by a committee of three. That we must obtain the cooperation of other research agencies goes without saying.
6. One of our first tasks will be to get some information as to work already performed or being now carried out by these other research agencies. In short, the preparation of a bibliography of work of this character is our first obligation.
7. As to outside agencies to whom we will turn for information and aid the following have been suggested.

U. S. Bureau of Standards
 Mellon Institute
 Chemical Manufacturers
 Pharmaceutical Manufacturers
 Corning Glass Works
 Manufacturers of glass bottles for chemicals and pharmaceuticals
 Bausch and Lomb Optical Co.
 Eastman Kodak Research Laboratories.

8. Supplementing this list, we should get in touch with all individual research workers in the field of Pharmacy (or outside of it) who are engaged in this sort of research work. In short, we should bring our problem to the 400 (or more) persons now on the mailing list of the National Conference on Pharmaceutical Research.

In accordance with these general principles, the following questionnaire was drawn up and sent out with an explanatory circular letter:

QUESTIONNAIRE.

1. Has your research work brought any light upon the question of the preservation of pharmaceuticals and medicinal chemicals by use of colored glass containers?
2. Have you published the results of your investigations on this subject?
3. If so, will you kindly give bibliographical references, or if possible, send reprints of your publications on the subject?
4. Are you doing research along these lines at the present time?
5. If so, will you be willing to coöperate with us in attempting to serve the physicians of this country and their patients by pointing the way to retail and manufacturing pharmacists of properly protecting medicaments in suitably selected glass containers?
6. Will you be willing to serve on one of the three sub-committees noted above; either as now constituted or when sub-divided into more specialized groups?
7. Could you suggest some person doing work of this character who might be willing to aid us?
8. Could you suggest bibliography (other than your own) dealing with this subject?

Seven hundred copies of the questionnaire and circular were distributed and the scope of distribution may be summarized as follows:

1. Every physicist connected with the National Research Council.
2. Every chemist connected with the National Research Council.
3. Every pharmaceutical research worker connected with the National Conference on Pharmaceutical Research. This list totaling about 500 comprises:
 - (a) Members of the Scientific Section of the American Drug Manufacturers' Association.
 - (b) Members of the revision committees of the United States Pharmacopœia and of the National Formulary.
 - (c) Pharmaceutical research workers of the Bureau of Chemistry and of the Association of Official Agricultural Chemists.
 - (d) Teachers in the leading colleges of pharmacy.
 - (e) Individual research workers, retail pharmacists, etc.
4. Chemical manufacturers.
5. Glass manufacturers.
6. Scientists in optical and electric manufacturing plants.

From these 700 questionnaires, we have had 52 answers and of these 13 stated that they were not interested in the problem before them. From the 39 answering favorably, we have obtained quite a bit of valuable information, which is given below in summarized form.

Taking the questions in irregular order, for purposes of lucidity:

The answers to Queries 5 and 6 brought 14 expressions of willingness to serve on sub-committees and 20 willing to coöperate in our work. Those ready to take part in sub-committee work may be grouped as follows:

Pharmacists and pharmacy college teachers	5
Chemical manufacturers	2
Pharmaceutical manufacturers	5
Chemists	2

As to offers of coöperation, the most valued response has come from the Research Laboratory of the National Glass Container Association. This is particularly valued since no practical results can be obtained unless the bottle manufacturers are with us in our work. Offers of coöperation have also been received from the Bausch & Lomb Optical Co., Dr. Schwarz, of the Mellon Institute, Corning Glass Works and a number of glass bottle manufacturers. A number of the latter group have written expressing interest and then referring us to the Research Laboratory of the Glass Container Association.

Special mention must be made of the kindly interest expressed by Dr. J. Eisenbrand of Frankfurt-on-Main, Germany, whose suggestions will be discussed on another page.

As to Query No. 1: Research work on the subject of the decomposition of chemicals and pharmaceuticals by light; the following comments are of interest and importance:

P. A. Houseman, of the MacAndrews and Forbes Co., Camden, N. J., is interested in the effect of light on hematoxylin in solid form and in solution.

H. J. Goeckel, of Cranford, N. J., has been studying the effect of light on 0.1 sodium thio-sulphate V.S.

C. S. Marvel, of the University of Illinois, has observed the influence of light on pyrrol.

H. C. Lythgoe, director of the Division on Food and Drugs, Massachusetts Department of Public Health, published the results of his experiments on the influence of light on spirit of nitrous ether in 1914.

W. L. Scoville, of Parke, Davis & Co., Detroit, is about to publish his findings on the influence of light on precipitation in tinctures and fluidextracts.

R. E. Lyons, of Indiana University, studied some years ago the effect of light (arc and ultra-violet) upon the polymerization of linseed and tung oils.

Jules Bebie, of Monsanto Chemical Works, St. Louis, tested the stability of chloramine-T solutions in white and amber glass and found no difference.

A. D. Holmes, of E. L. Patch Co., Boston, Mass., has published several papers on the influence of light on the vitamin-A of cod-liver oil.

J. A. Pierce, now a graduate student at Johns Hopkins University, states that when in the employ of a pharmaceutical manufacturer, he conducted experiments on the influence of light on tincture of aconite.

Anton Hogstad, of the St. Louis College of Pharmacy, states that his experiments showed that cresol kept in colorless sealed tubes did not darken even when exposed to sunlight. He raises the question as to whether the darkening of cresol is not due to some ingredient of the glass container.

L. C. Roche, of the Maryland Glass Corporation, Baltimore, states that his laboratory has just started research work with different colored glass bottles containing unstable compounds. The work will not be ready for publication for at least six months.

M. W. Tapley, of E. R. Squibb & Sons, Brooklyn, cites the work performed by Dr. Giesy and himself in 1926 (*JOUR. A. PH. A.* 15, 46) on the light-sensitivity of bismuth subcarbonate.

W. B. Rayton, of the Bausch & Lomb Optical Co., Rochester, N. Y., returns filled-in questionnaire stating that it will "show you how little we know about the subject matter your committee is investigating."

Dr. J. Eisenbrand, of the University of Frankfurt, Germany, was brought to the attention of the Committee on Colored Glass Containers, through an important paper on the subject of the effect of light on chemicals and pharmaceuticals published by him this year (*Pharm. Zeit.* 72, 247). Correspondence brought from Dr. Eisenbrand a courteous letter under date of May 6th, in which he stated (a) that as far as he knew his paper in the *Pharmazeutische Zeitung* and one by Bordier (*Compt. rend.* 163, 205) were the only published papers on the preservation of

medicinal chemicals and pharmaceutical preparations; (b) that as assistant to Professor von Halben in revising Landolt's "Physikalisch-chemischen Tabellen" he studied the light absorption by various glasses; (c) that this work showed him that our colored glass containers for medicines are in a large degree of little value; that particularly our knowledge of the protective value of amber glass leaves much to be desired. Dr. Eisenbrand also gives in his letter an excellent bibliography.

As to Query No. 3: bibliography on the subject: Dr. Eisenbrand furnished the following:

Effect of Light on medicinals:

Eisenbrand, see above.

Bordier, see above.

As to light absorption by colored glasses:

Gibson, *Jl. Opt. Sec. Am.*, 7, 693 (1923).

Federtieff and Lebedoff, *Zl. anorgan. Ch.*, 134, 87 (1924).

Belar, *Wein. Ber.*, 132, 45 (1923).

Bayley, *Phys. Rev.*, 24, 495 (1924).

Gibson, Tyndall and McNicholas, *Tech. Pap.*, Bureau Standards, 148.

Gibson and McNicholas, *Tech. Pap.*, Bureau Standards, 119.

Eckert, "Jahrbuch. Rad. Elektronik," 20, 93 (1924).

Dean Koch of the Pittsburgh College of Pharmacy suggests

Hans-Jacob Moller and W. Lens, "Proc. Int. Pharm. Cong." (1913).

Corning Glass Works sent the Committee the Bureau of Standards *Paper*, No. 148 (mentioned above) and also

Coblentz, Emerson and Long, *Scientif. Pap.*, Bur. Standards, No. 325.

Dr. Holmes, of the E. L. Patch Co., Boston, sends a reprint of a paper cod-liver oil (mentioned above), viz:

Holmes and Pigott, *Boston Med. & Surg. Jl.*, 195, 263 (1926).

To these may be added the following papers:

Lythgoe, Spirit of Nitrous Ether, mentioned above.

Macht and Krantz, Effect of Radiation on Digitalis, *Proc. Soc. Exp. Biol. Med.*, 23, 340 (1926).

Backstroem, Oxidation of Benzaldehyde, *Jour. A. C. S.* 49, 1480 (1927).

Tapley and Giesy, Effect of Light on Bismuth Subcarbonate, mentioned above.

The foregoing concludes our results to date. Now we will turn a few minutes to the utilization of information received. Your committee believes that the next work that should be performed represents problems in pure physics such as:

1. What types of glass are theoretically best adapted to hold back the rays influencing the deterioration of medicinal chemicals and pharmaceuticals?

2. Are recipes for such glass mixes available to the members of the Glass Container Association?

3. Can such containers be purchased by chemical and pharmaceutical manufacturers at reasonable prices; or rather at prices that are not prohibitive to the ultimate consumer?

4. The United States Pharmacopœia and the National Formulary list 423 chemicals and pharmaceuticals that experience has shown are sensitive to light. A list of these medicaments will be furnished at the proper time. Assuming that problems 1 to 3 are solved by physicists and that the physicists' findings are put into practical shape by the Research Laboratory of the Glass Container Association, then the individual medicaments mentioned above can be studied within the containers deemed theoretically satisfactory by such members of our other groups who have promised their coöperation.

5. The suggestions of Professor Hogstad and the paper of Tapley and Giesy mentioned above point out two other phases of our problem.

(a) When is air the cause of deterioration rather than light?

(b) When do certain constituents of the glass-mix produce the deterioration we ascribe to light?

To properly carry out such research the coöperation of the Bureau of Standards is essential and while your chairman has corresponded with two of the officials of the Bureau, no results are available for this report.

Last week your Chairman had a personal conference with an official of the Research Laboratory of the Glass Container Association, who expresses an earnest desire to coöperate along the lines suggested above, but who is awaiting specific instructions to that effect from the officers of his association. In the same way we should secure the active coöperation of the pharmaceutical manufacturing groups. Your chairman addressed the 1927 meeting of the American Drug Manufacturers' Association on this subject and likewise interested the officials of the American Pharmaceutical Manufacturers' Association in the same problem. We have heard that these two organizations have authorized appointment of committees to coöperate with us but up to now no official confirmation of the rumor has been received.

That we must receive the aid of the manufacturing groups goes without saying; as these groups are really more interested in the deterioration of medicinals through action of light than are the rank and file of the A. Ph. A. membership. We must also make some arrangement as to a mutual bearing of the expenses of properly carrying on our work. This year, for example, printing, typing and postage expenses of your committee far exceeded the routine \$25.00 committee budget.

At the conference with the official of the Glass Container Laboratory that gentleman suggested immediate research work by the pharmaceutical group on the question of relative preservative value of amber glassware now on the market. His idea was that instead of awaiting the precise work of physicists, as outlined above, that we start right in with glass containers now available and with certain typical unstable products, such as spirit of ethyl nitrite, solution of silver nitrate, solution of physostigmine salicylate, santonin and other dry chemicals; each investigator taking up a specific product and conducting observations of a period of a year or more. For such work he agrees to furnish all of the containers necessary for a comprehensive study of the subject.

In conclusion, your committee begs to state that the preliminary work is now completed except the enlisting of the active coöperation of the Bureau of Standards and of the organizations of the chemical and pharmaceutical manufacturers.

While we believe that the first experimental work should be that carried on by physicists and container manufacturers, we are ready to proceed to work within the pharmaceutical group, if the Section and the ASSOCIATION so direct.

THE MUSEUM AND LIBRARY OF THE A. PH. A. HEADQUARTERS.

Has your State Association prepared its history? If not this should be looked after. Those who have historical material—which should permanently be preserved and the owners would like to present for that purpose to American Pharmacy—should set it aside, marked "For the AMERICAN PHARMACEUTICAL ASSOCIATION, to be turned over to the ASSOCIATION when the Headquarters is completed," or, if it is not convenient to store it send it to the ASSOCIATION, 10 West Chase St., Baltimore. However, write for further instructions before shipping.

Many would like to have their names remembered by endowments and memorials to pharmacy during lifetime or by their will. Every one gives thought to other worthy purposes, but American Pharmacy, in general,

has never before had the opportunity of serving, as will now be possible in the A. Ph. A. Headquarters.

The time to give this matter attention is "as soon as possible." Due acknowledgment will be made of all donations. If you have no historical material or books, you may know of some one who would like to make a donation or provide an endowment.

IDAHO'S OFFICIAL LIST OF THE 14 LICENSED PROFESSIONS.

The Department of Law Enforcement, Bureau of License, Idaho, has compiled a new list of members of the 14 licensed professions, as recognized by the State; 684 pharmacists are listed, 260 of these reside outside of Idaho.