

President's thanks to all Chairmen and members of committees and to the membership at large for their splendid co-operation in the Society's work and to bespeak your continued efforts for the progress of our profession and of the oil industry.

H. P. Trevithick, Pres.,
December 7, 1927

Progress on Color Glass Standardization

The President of the American Oil Chemists' Society has received the following correspondence from the Bureau of Standards, Department of Commerce, reporting on the status of the Lovibond color-glass standardization work, as of October 1, and on the further progress attained in October. As outlined in the reports, it is the purpose of the Bureau to submit a monthly statement of progress to the Society.

Mr. H. P. Trevithick, President,
American Oil Chemists' Society,
New York Produce Exchange,
No. 2 Broadway,
New York, N. Y.

Subject: Standardization of
Lovibond Glasses.

Dear Sir:

1. I am transmitting herewith report on status of cooperative work on standardization of Lovibond glasses as of October 1, 1927.

2. Another copy of the same report is being sent to Mr. Putland.

3. Your attention is particularly invited to Mr. Priest's recommendation that either yourself or Mr. Putland (or both of you) make regular monthly visits to the Bureau in order to keep in close touch with the progress of this investi-

gation. I hope you will find it possible to follow this suggestion.

Respectfully,

L. J. Briggs,
Acting Director
Bureau of Standards
Department of Commerce.

Report on Status of Work,
October 1, 1927

1. Miss Geraldine K. Walker, employed as Research Associate by the American Oil Chemists' Society, reported for duty at the Bureau of Standards Monday morning, September 12, 1927.

2. Status of Standardization at Time of Miss Walker's Arrival:

(1) The specifications for American Standard Red and Yellow Scales had been established by Priest and Gibson. (Reported at Memphis Convention, A.O.C.S., May, 1927.)

(2) The following glasses had been standardized in terms of this scale:

(a) In Bureau of Standards set (B.S. 9940) glasses of *nominal* values as follows: Red glasses of integral values from 1.0 to 20.0; yellow glasses of integral values from 1.0 to 20.0; fractional red glasses from 0.01 to 0.09, and the exact tenths from 0.10 to 0.90; fractional yellow glasses, 0.01, 0.10, 0.20, and 0.40.

(b) Glasses belonging to A.O.C.S. (B. S. Test No. 41960): Red glasses, nominally integral values from 1.0 to 20.0, and nominally exact tenths from 0.10 to 0.90; yellow glasses, nominally integral values from 1.0 to 10.0, and 20.0, 30.0, and 35.0.

(Results on the A.O.C.S. glasses were reported at Memphis Convention, A.O.C.S., May, 1927.)

(3) During July, Priest, with Judd's assistance, had made a thorough study of the relations between the transmission of the yellow glasses for a certain few particular wavelengths and the sunlight transmissions and correct Lovibond numerals of the same glasses. These relations will be useful in routine calibration of the yellow glasses.

(4) During July, Priest also made a preliminary study of the project of standardizing the red glasses alone without reference to the 35-yellow.

(5) The following glasses submitted by the A.O.C.S. (through Mr. Trevithick) were at the Bureau September 12:

66 35-yellows submitted August 4, 1927; 124 reds submitted August 4, 1927; 1 35-yellow submitted by letter of August 27, 1927; 3 7.6 reds submitted by letter of August 27, 1927.

(6) Preliminary determination of the red corrections to be applied to each of 64 of the above mentioned 35-yellow glasses had been made by Judd in August. These corrections have not yet been verified.

(7) A preliminary sorting of 123 of the above mentioned red glasses, for the purpose of selecting a group between true values 7.5 and 7.7 had been carried out by Priest, Judd and Riley. In this sorting, errors as large as 0.7R in the nominal values as submitted have been discovered.

(8) Work on selecting red glasses of exactly integral values at unit intervals and exact tenths at intervals of one-tenth had been started. This selecting was undertaken in order to provide a *convenient* set of "working standards" for routine calibration of other glasses.

3. Progress by Miss Walker, September 12-30:

(1) The equivalents of 129 red glasses (submitted by Mr. Trevithick, August 4, August 27, and September 24) have been determined in terms of the scale of Priest and Gibson. It is highly probable that nearly all of these equivalents are correct to within about 0.1R but they ought to be verified before being finally reported. Errors as large as 0.7R in the nominal values as submitted have been found. (The calibration of these 129 glasses occupied about 57 actual working hours.)

(2) About 1/6 of the task of selecting red glasses for exact integers and exact tenths has been completed.

(3) Determinations of the spectral transmissions of the following glasses from the B. S. Set 9940 have been made: 1.0, 0.84, 2.8, 3.8.

4. Cooperation of other Members of Staff, September 12-30:

(1) Gibson, Judd, and Riley have continued work on the selection of red glasses for exact integers and tenths.

(2) Priest and Judd have prepared the preliminary draft of report on "Selection of a Group of Correct Lovibond 7.6 Red Glasses from a collection of Red Glasses of Nominal Values between 7 and 8." (This will have to be revised.)

5. In Regard to Future Reports:

It is expected that a monthly report of progress will be prepared at the end of each month to be forwarded to Mr. Trevithick and Mr. Putland.

However, it will be very difficult to make all matters clear by such written reports. In order that the Society may be more fully advised than is possible by such

written reports, I strongly recommend that either Mr. Trevithick or Mr. Putland, or both make regular monthly visits to the Bureau beginning about December 1st. (I will probably make an oral report at the New York Meeting of the Society, October 28th). The first Saturday in each month would be a date agreeable to me for such visits.

Report for October, 1927

1. The preliminary selection of individual red glasses to represent as accurately as possible exact tenths from 0.1 to 0.9 inclusive and exact integers from 1 to 11 has been completed by Gibson, Judd, Walker and Riley. Unfortunately, there were some cases in which no one glass could be found in the Bureau set (B.S. 9940) to represent the exact integral values. These cases will require further attention. Exact integral values can probably be realized by combining two glasses.

2. In the program of verifying by spectral transmission, the values of glasses selected by color match, the spectral transmissions of eleven more red glasses (0.84, 2.8, 3.8, 5.4, 6.8, 7.8, 8.8, 9.8, 0.11, 0.17, 0.18, maker's numerals from B.S. 9940) have been determined by Walker and Gibson.

3. The values of eight more glasses (0.84, 2.8, 3.8, 5.4, 6.8, 7.8, 8.8, 9.8, maker's numerals from B.S. 9940) have been computed by Riley, under Gibson's supervision, on the new scale of Priest and Gibson.

4. Further tests of the additivity of values of red glasses on the new scale of Priest and Gibson have been made by Judd and Walker by the method of direct comparison of colors in the Martens photometer. All of these tests indicate

that the errors in the values assigned to individual glasses by Priest and Gibson are less than 0.1. The method of direct comparison of colors is not adequate to detect errors smaller than this.

5. Report on the calibration of 129 red glasses submitted by the A.O.C.S. has been prepared by Judd and Walker as planned by Priest. This report was communicated orally by Priest to the meeting of the A.O.C.S., New York, October 28, 1927. It is being prepared for publication in the Society's Journal (OIL AND FAT INDUSTRIES). (For detailed discussion reference must be made to the complete report.) These glasses have been returned to Mr. Trevithick.

6. At the meeting of the A.O.C.S., New York, October 28th, Priest reported on the tests of color sense of oil chemists made at the Memphis convention, May, 1927. This report dealt particularly with the sensibility to differences in Lovibond red at 35-yellow 7.6 red. It is being prepared for publication.

7. Priest has planned a new method of using the Arons chromoscope to grade the red glasses. Preliminary tests of it have been made. It is expected that this method will afford an independent check on the calibration by spectral transmission and may perhaps be developed into a rapid routine method for regarding the red glasses submitted for test.

Irwin G. Priest,
Chief Colorimetry Section.

It is with regret that we announce the death, on October 29, at Fresno, California, of Robert Hulme, a member of the American Oil Chemists' Society and a well known oil chemist.
