The American Oil Chemists' Society

Notes and Correspondence

President's Call for Annual Meeting

Dear Fellow Members:

Our annual meeting will be held May 14th and 15th at the Hotel Roosevelt, New Orleans, and it is very desirable that every member should try to be present.

It is essential that the chairmen of all the committees have their reports in the hands of the Uniform Methods Committee not later than April 1st, in order that they can be considered and proper recommendations made on them at our annual meeting. The Chairman of this committee is N. C. Hamner, c/o Southwestern Laboratories, Dallas, Texas. Will you also send copies of your report to H. J. Morrison, Chairman of the Planning Committee, c/o Procter & Gamble Company, Ivorydale, Ohio, and to the President at No. 2 Broadway, New York City?

Hoping to see you all there, I am,

Very truly yours

H. P. TREVITHICK,

PRESIDENT.

To The Editor,
Oil & Fat Industries,
New York, N. Y.

Sir:

Referring to Mr. Priest's article published in the Journal this month, regarding tests on the sensitivity of certain of our members to color. Mr. Priest informs me that any one, who desires, can be examined at the Bureau of Standards at any time, provided arrangements are made direct with Mr. Priest.

These examinations will be made under the best possible conditions, and will definitely establish whether the member is color blind or not. Mr. Priest has stated in his article, that each man who was tested at Memphis will be given his own number, so that he may ascertain what his own results were. The key to these numbers is in Mr. Priest's possession, and will not be disclosed. However, the Referee Board will probably require that persons applying for a referee certificate, will either have to pass this test, or have it passed by some one in their employ, in order that the Board will know that each Referee laboratory has some one capable of reading colors correctly. If it seems desirable, Mr. Priest will again arrange to have tests made at the New Orleans meeting for those who would prefer to have it done at that place.

If I remember correctly, the Society was willing at the last meeting that the results of the tests at Memphis should be given to the Referee Board, but it would seem fairer that those men who did not have as good a reading as the others be given another test under more favorable conditions. Those who passed the test at Memphis, of course, can stand on the results of these tests, if they choose. Will those who wish to have the test made at New Orleans, please write me or Mr. Priest, in order that he can decide whether to bring the apparatus with him?

Very truly yours

H. P. TREVITHICK,

PRESIDENT.

Standardization of Lovibond Glasses

Report for January, 1928

I. Tests of Sixty-five 35-Y Glasses Submitted by A.O.C.S., August, 1927.

The chief activity this month has been the examination and intercomparison of sixty-five Lovibond 35-Y glasses submitted by Mr. Trevithick in August, 1927. At the same time, and a few weeks later, there were submitted 129 red glasses. A few observations were made by Judd in August to determine the red correction of the yellow glasses. They were then put aside and all work was concentrated on two tasks, viz: (1) the calibration of the red glasses; and (2) the task of selecting (from the set B. S. 9940) red glasses of exact integral values and exact fractions by steps of 0.10. The first of these tasks having been disposed of (see published report, Oil and Fat Industries, p. 16, January, 1928) and the second being well advanced, we have now returned to the examination of this large group of 35-Y glasses.

The temporary paper labels bearing the A.O.C.S. identification numbers have been replaced by engraved marks, and a detailed inventory of the glasses has been prepared showing all marks engraved on them and noting scratches, pits, striae, haze and other blemishes. The following data have been obtained on these 35-Y glasses;

(1) The "red correction" (that is the Lovibond red required to be combined with each of these glasses to match a constant comparison 35-Y, or required to be combined with the constant comparison 35-Y to match the glass being tested) has been determined for each of these glasses by each of two observers, with results which agree to within 0.05R except in twelve cases which are now being reviewed. The range of the "red correction" for this group of sixty-five 35-Y glasses appears to be about 0.3R (or perhaps 0.4); that is to say, the two extreme glasses in this lot differ by about this amount of red. The overall range of the "red correction," considering all 35-Y glasses which we have ever observed, appears to be about 0.5 or 0.6R. (Judd and Walker).

(2) The transmission of each of the glasses has been determined at each of the following wavelengths:—480, 510, 550, 610 millimicrons. In making these measurements temperature is taken into account and the results reduced to 25°C. (Gibson and Brown).

(3) The white light transmission of each of these glasses has been measured relative to a comparison standard 35-Y (B.S. 10-289B) by means of the Martens photometer. (Judd).

(4) The dominant wavelengths are being measured by direct comparison with the dominant wavelength of 35-Y (B.S. Test 41960). Observations on 42 out of the lot of 65 were completed at the end of the month. These data will form a check on the red corrections obtained by Judd and Walker. (Priest).

Besides obtaining the above mentioned experimental data, the following computations have been carried through for each of these 65 glasses:—

(1) The Lovibond numeral on the additive scale of Priest and Gibson (established April-May, 1927) has been computed by means of the empiric formula

(Numeral = $-37\log_{10}\left[\ T_{480}/T_{550}\ \right]$ where T_{480} and T_{550} are respectively the transmissions for wavelengths 480 and 550 millimicrons.) derived by Priest last summer. (Gibson and Brown).

(2) The sunlight transmission has been computed from the transmissions for wavelengths 510, 550, and 610 millimicrons by means of the empiric formula derived by Priest last summer. (Gibson and Brown). These transmissions are being compared with transmissions measured by Judd relative to a comparison standard 35-Y (B.S. 10289B). Some large discrepancies which appear between the two sets of transmissions are accounted for by the numerous scratches and pits on the glasses. The propriety of continuing the use of these badly damaged glasses in questionable.

II. Establishment of Transmission Standards for 35-*Y Glasses.*

Extensive measurements by flicker photometry have been made by about 15 observers (with the cooperation of the Photometric Section, Electrical Division) to determine the transmission of a working standard 35-Y (property of the A.O.C.S. and designated as B.S. Test 41960) for sunlight (and also for the light from a lamp at color temperature 2077°K, i.e., a carbon filament lamp operating at 4 watts per candle). As a result of these extensive measurements the sunlight transmission previously computed from the spectral transmission and published in B. S. Sci. Paper No. 547, Table 6, has been verified to within an uncertainty less than 1 per cent. The adopted sunlight transmission for this glass is 0.632. The transmission for light from the carbon filament lamp is 0.667. The use of this glass as a working standard will greatly expedite the measurement of the transmission of glasses to be tested. (Priest, Judd, and Others).

The ratio of the sunlight transmissions of two 35-Y glasses (B.S. 10289B and B.S. Test 41960) has been determined as the result of extensive measurements by means of the Martens photometer. (Judd).

III. Further Calibration of the Bureau's Red Glasses.

Calibration of the Bureau's set of Lovibond red glasses has progressed as follows:

(1) The spectral transmission of the following glasses (designated by maker's numbers) has been determined:

1.8, 5.6, 0.13, 0.58, 0.86, 4.8, 8.2, 4.9, 4.6, 7.2, 5.8. (Walker and Gibson).

(2) The search for glasses having exact tenths and exact-integers on the additive scale of Priest and Gibson has been continued on the basis of the just mentioned determinations of spectral transmission. This has resulted in adding the following better approximations to the list given in the report for December, 1927:—

Desired Numeral	Maker's Mark	Computed Numeral	Computed Numeral minus Desired Numeral
0.200	0.13	0.199	—0.001
1.000	0.86	1.003	+ .003
5.00	4.9	5.08	+ .08
8.00	8.2	8.04	+ .04

(Gibson)

(3) Including all previous work, seventy-five red glasses from the Bureau set (B.S. 9940) have now been calibrated, by means of computation from their spectral transmissions, in terms of the scale of Priest and Gibson. The results to date are as follows:

Maker's Numeral (engraved by Lovibond)	New Numeral (Priest and Gibson)	Maker's Numeral (engraved by Lovibond)	New Numeral (Priest and Gibson)
.01	0.093	1.0	1.173
.02	.104	1.8	1.95
.03	.122	2.0	2.30
.04	.112	2.8	2.99
.05	.132	3.0	3.02
.06	.148	3.8	3.94
.07	.152	3.9	3.94
.08	.154	4.0	4.11
.09	.156	4.6	4.78
.10	.172	4.7	4.89
.11	.185	4.8	4.91
.12	.167	4.9	5.08
.13	.199	5.0	5.58
.17	.232	5.4	5.82
.18	.296	5.6	6.16
.19	.272	5.8	6.19
.20	.277	6.0	6.53
.26	.361	6.8	6.85
.28	.365	7.0	6.83
.30	.357	7.2	7.36
.32	.454	7.6	7.59
.38	.495	7.8	7.90
.40	.549	8.0	8.27
.46	.593	8.2	8.04
.50	.626	8.8	8.81
.54	.677	9.0	9.17
.56	.711	9.8	10.00
.58	.665	10.0	10.07
.60	.732	11.0	10.63
.64	.806	12.0	12.17
.70	.875	13.0	12.98
.74	.900	14.0	13.90
.80	.879	15.0	15.47
.84	.984	16.0	16.65
.86	1.003	17.0	17.12
.88	.984	18.0	18.15
.90	1.021	19.0	18.81
		20.0	19.67

(4) Notable progress has been made in determining (by comparison in the Martens photometer) the relative white light transmissions of nineteen working standard red glasses in combination with 35-Y, but these data are not ready to be reported. (Walker, Judd, Priest).

(5) Preliminary data on spectral transmission obtained in 1920 by Dr. M. Katherine Frehafer are being reviewed and compared with the data of Gibson and Harris (B.S. Sci. Pap. 547), and are being used to make a partial calibration independent of that of Priest and Gibson (April-May 1927). When finished this review and computation will afford a valuable check on the data of Gibson and Harris and the scale derived by Priest and Gibson. (Gibson and Riley).

(6) The rate of change of Lovibond numeral and dominant wavelength for constant 35-Y and variable red has been computed from the O.S.A. data on excitations. The same function has also been derived from experimental data taken by Priest last spring. Study and final tabulation of these data are in course but not yet completed. Some new experimental data have also been taken. The rate of change of hue with Lovibond number has also been studied in a preliminary way. (Priest and Judd).

IV. Calibration of Red Glasses Submitted by A.O.C.S.

Calibration of fourteen red glasses submitted by the A.O.C.S. (Through Mr. Putland) January 16, 1928 has been started. (Walker)

V. Publication.

The report by Judd and Walker on "A Study of 129 Lovibond Red Glasses with Respect to the Reliability of their Nominal Grades" was published in the January number of OIL AND FAT INDUSTRIES."

IRWIN G. PRIEST,
Chief, Colorimetry Section.