

# INTER-SOCIETY COLOR COUNCIL

## NEWS LETTER

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SYMPOSIUM ON VISUAL  
PROBLEMS OF COLOUR

The National Physical Laboratory, Teddington,  
Middlesex, England, held a symposium on Visual  
Problems of Colour, September 23rd through 25th.

The meeting was divided into six sessions: Selig Hecht Commemorative Lecture; Visual Pigments (Particularly in Relation to Colour Vision); Brightness Matching and Colour Matching (Normal and Defective Colour Vision); Subjective Colour Measurement and Allied Topics; Electrophysiological Aspects of Vision (Particularly Colour Vision); and Colour Theories.

From the advance programme and invitation: "The symposium has been planned to cover a number of problems of colour in which the mode of functioning of the eye is important, and on which there have been substantial new contributions in recent years. It will take place almost exactly ten years after the death of Selig Hecht, an outstanding American scientist whose vigorous attacks on visual problems of all kinds have had a far-reaching influence in the development of the subject. As a tribute to his memory, the first session of the symposium will be devoted to a Hecht Commemorative Lecture, which Professor George Wald of Harvard University has kindly agreed to give."

Many of the scientists on the program are familiar to ISCC members including Dr. Judd, National Bureau of Standards (USA); Professor Wright, Imperial College; Dr. Hurvich and Dorothea Jameson, Kodak (USA); Dr. Hunt, Kodak Research (England); Dr. MacAdam, Kodak Research (USA); Cdr. Farnsworth, US Naval Medical Research; and Professor Fry, Ohio State University. Other nations sending scientists were USSR, Germany, Holland, France, Italy, Sweden, Finland, and Spain.



\*Copies of the proceedings of the symposium, consisting of papers and summaries of the discussions, will be on sale from Her Majesty's Stationery Office (Britannic).

DUTCH GROUP ATTEMPTS  
TO ESTABLISH AN  
INTERNATIONAL  
ASSOCIATION

The ISCC secretary received the following communication from Mr. E. Rijgersberg. Mr. Rijgersberg is known to many ISCC members for his work with the Dutch Society for Color Study. This announcement is reproduced without editing. I am sure you will find it as delightful and interesting as I did.

W.R.

"Perhaps the readers of your Inter-Society Color Council News Letter will be interested to hear something about the activities in the dutch color world. Recent developments in the dutch color world may prove of international significance.

Firstly a few words about the "Dutch Society for Color Study." This society has been established by the undersigned in 1934. It studies color problems theoretical as well as practical with which she is confronted, promotes a justified use of colors, warns against misuse of colors; in short it develops a large range of activities. The society organizes yearly its so called Color Days, where various recent color problems are discussed by expert scientists.

In its practice the Dutch Society for Color Study has repeatedly been confronted with serious dabblery in color advising, which is finding its cause in the lack of scientific training and in general the lack of sufficient color knowledge of the greater part of so called color advisers. Really all round and expert color advisers are very scarce in Holland and presumably this will be the case also in other countries. The demand for color advisers, however, is permanently increasing, every paintfactory being anxious to appoint or to extend quite a staff of color advisers. But whence could they all at once welltrained advisers? Indeed they did not find them but appointed any man who passed himself off as such. Of course this was leading to an enormous pettifoggery in colorconsulting and as a result the Dutch Society of Color Study had to deal with many complaints from consultees about dead failures of color advises, especially from factories, hospitals and schools.

This situation raised the serious concern of the Dutch Society for Color Study and to improve the situation it decided to fight the pettifoggery in color advising by setting up a written course for color advisers, dovetailed with a number of practical lessons and demonstrations. The course consists of 90 lessons, comprising the following subjects:

\*We have asked Dr. Wyszecski and Dr. Judd if they will report on these meetings for us in the next News Letter.



Physics of Color  
Physiology of color  
Colorpsychology  
Paint technics  
Architecture  
Color in architecture

General color science  
The practice of color advising  
Wallpaper  
Home textiles  
Lighting

After having passed through the course the coursists have to undergo an examination; to the successful candidates a diploma will be presented by the Dutch Society for Color Study, earmarking them as trained, allround color advisers. The interest is enormous.

Another concern of the Dutch Society was the question of the behavior and the mutual relations of the diplomed color advisors. Would they compete each other to death, would they overcharge the clients, would they demand commissions from the suppliers, etc. etc.? To bring the diplomed color advisers under the necessary discipline and to settle their mutual relations the Society gave the impulse to the foundation of the "Union of Color Advisers". (Bond van Kleurenadviseurs, secr. Goudenregenstraat 1, Wageningen, Holland.) This Union has been founded in November 1956. The Union of Color Advisers accepts only as members diplomed color advisers. As a temporary provision, however, advisers may join as candidate-members when they have given distinct evidence of capability. Candidate-members are obliged to pass the course for color adviser. Rules of order and a scale of minimum charges have been accepted and a board of discipline looks closely after the correct observation of the standing orders. Members bear the initials: B.K.A.

The foundation of the Dutch Union of Color Advisers attracted the attention and the interest of german color advisers and especially of the "Institut für Farbenpsychology" at Marquartsheim. (Dr. Frieling). An invitation to the direction of the Union for a conference at Bonn followed, which conference has been held on mai 2nd. The result of this conference was, that a committee has been set up consisting of german and dutch reputed color advisers to prepare the organisation of an International Union of Color Advisers, residing in Holland (Goudenregenstraat 1, Wageningen.) The Germans, having good relations in Austria and Switzerland took on themselves the foundation of a Union in these countries, whereas the dutch would take up their contacts with the scandinavian countries, belgium and france. Each country is to set up an independent national union of color advisers; the committee is striving for the foundation of a spanning organisation in the form of an International Union of Color Advisers. To start it draw up the aims of the International Union and agreed upon the following purposes:

- a. Normalisation of the professional training of color advisers;
- b. Equalization of the requirements the qualified color adviser has to meet and of the examinations;
- c. Normalisation of the color nomenclature;
- d. The foundation of a chair in color science; (colorology) in universities of the joined countries;
- e. The designing of a common colorbook, including special color-groups for machinery, schools, hospitals;



- f. The formation of a fund to enable the interchange of color-experts and also of color advisers with the purpose of widening their horizon;
- g. The setting up of an international color research centre;
- h. The publication of an international color magazine;
- i. The composing of a collection of demonstration material.

The definite foundation of the International Union of Color Advisers will probably take place during the "i-Punkt Farbe"-show in Cologne in the beginning of July 1957.

I hope you will find the above information interesting enough to deserve a small place in your News Letter.

Yours very truly

E. Rijgersberg"

The following announcement was received at the same time.

"Dear Sirs: The Committee of Preparation for the foundation of an International Association of Colour Advisors beg to draw your attention to the following announcement, as we believe it will interest many of your readers."

\* \* \* \* \*

"At Bonn a group of colour advisors from various countries have decided to found an International Association of Colour Advisors. In many countries a great need for this has been felt for some time, as charlatanism is running riot in this field and the young science of colour determination is being pursued by incompetent persons out of mercenary motives. The parallelism of mutual interests as well as the urgent need of a uniform international system of professional practice and etiquette were the reasons for the decision about founding this international association, further steps concerning which will be taken during the Journees Internationales de la Couleur at Amiens and the actual foundation of which will take place during the exhibition "Farbe" to be held at Cologne. As chairman of this inauguration meeting has been chosen Mr. E. Geelhuysen from Hilversum, Holland, and the secretariat of the Committee of Preparation has been entrusted to Mr. A. V. Hartogh, 1 Goudenregenstr., Wageningen, Holland.

Next to its purely organizing activities the International Association will carry on its working program such items as: the coordination of the training of colour advisors and their examination qualifications; remunerations; professional etiquette; colour fans; nomenclature; the erection of funds for research work; the exchange of colour-technical experts; propagating the creation of colour science chairs, etc. The (future) association is fully aware of the fact that the task to be undertaken is an extensive one, but with a view to the great need of a correct colour application it believes an energetic tackling of this task to be necessary, as it concerns not only the interests of the professional colour people, but primarily those of the



great public who are constantly faced with problems of colour application and - matching and are being consciously or unconsciously influenced by them."

\* \* \* \* \*

More about the Dutch Society for Color Study will be found in News Letter Nos. 95, 96, and 100.

BELGIAN COMMITTEE  
ON COLORIMETRY  
ISSUES REPORT

The "Commission Belge de Colorimétrie" set up by ATIPIC (Association des Techniciens de l'Industrie des Peintures et des Industries Connexes) in 1956 has issued a progress report for 1956. This report has been published in La Chimie des Peintures, 20, 183-198 (May, 1957).

The Belgian Committee on Colorimetry was set up as a result of the great interest shown at the 3rd FATIPEC Congress in May 1955 at Spa on theoretical and practical aspects of colorant formulation; see News Letter No. 119. Its purposes are:

1. The adoption of a standard instrument for colorimetric analysis.
2. The standardization of measuring instruments and systems of coordinates.
3. The definition of color and its characteristics.
4. The elaboration of a standardized terminology.
5. The determination of the size of color differences.
6. The choice of colorimetric tolerances admissible in color comparisons.

The report consists of the four separate reports of four subcommittees.

The subcommittee on Study of Instruments and Colorimetric Methods recommended the adoption of the Hardy-GE spectrophotometer as a reference instrument. It also recommended that all photoelectric colorimeters for industrial use employ the tristimulus filters specified by R. S. Hunter in NBS Circular C429, and that these instruments illuminate the specimen at angles between 8 and 15° from the perpendicular and view the specimen diffusely. The conditions of use of such instruments are specified (stable mounting, protection from vibration, use in a darkened room, control of voltage input, protection against dust and excessive humidity), and arrangements have been made to have the University of Louvain make performance tests of photoelectric colorimeters under the supervision of the Belgian Committee on Colorimetry and at the expense of the manufacturer. The performance test will consist of measurements of 12 standard filters well distributed over the Maxwell triangle and of measurements of combinations of them. These measurements will be made daily on each of six consecutive days, and the concordance of the results with those of the Hardy spectrophotometer will be examined.



The subcommittee also recommended two chromaticity-coordinate systems: (a) The CIE (x,y)-diagram, and (b) the Hunter alphabeta diagram. To express the visual importance of color differences the NBS unit of color difference based on the Judd formula is recommended, and a formula is given by which even glossiness differences are to be expressed in NBS units. Lightness and chromaticness differences are to be expressed separately. Specimens failing the glossiness tolerance are rejected first, then those that fail the lightness tolerance, and finally the remainder are tested for conformance to the chromaticness tolerances.

The subcommittee on Study of Colorimetric Terminology and Its Standardization proposed definitions of color impression, object color, specular reflection, diffuse reflection, white body, black body, colored body, physical characteristics of color (kind, purity, intensity), colorimetric characteristics of a colored body (gloss, chromaticity, visual intensity), additive mixture, subtractive mixture, subjective characteristics of color (kind, saturation, intensity), curves of equal saturation, saturation vector, and numerical identification of color. Many of these definitions are strange to American ears, and some appear to be inadmissible. For example, color impression is defined as that produced by the subtractive mixture resulting from the superposition of (a) the sensibility of the eye, (b) the color proper of the body, and (c) the nature of the light illuminating the body.

The subcommittee on Study and Determination of Tolerances for Colorimetric Measurements announced its intention to establish colorimetric tolerances applicable to pigments, colorants (used in paint, varnish and printing ink), vehicles, supports (papers), paints and varnishes, printing inks, plastics, linoleum, and so forth. For each material they intend (1) to determine the best practical way to prepare samples for measurement, (2) to define tolerances in accord with each particular industrial application, (3) to work with the first subcommittee in setting tolerances permitted for precision of spectrophotometers and photoelectric colorimeters, and (4) to coordinate the results of these studies with the decisions of the first subcommittee regarding standardization of the methods of measurement. The subcommittee has proposed a standard method for preparing pigment samples for measurement (mulling in castor oil as prescribed by the National Printing Ink Research Institute) both for masstone and let-down, and a standard colorimetric method for masstone, and has set a tolerance on visual importance of the difference between actual and intended color of 2 NBS units as a point of departure for the study.

The subcommittee on Study of the Possibility of Standardizing Pigments proposes to commence by studying eight representative pigments whose dominant wavelengths shall be distributed throughout the spectrum by steps of about 160 NBS units. They have presented a table specifying 56 colors on the boundary of the chromaticity diagram each separated from its two nearest neighbors by a chromaticity difference of about 20 NBS units. This information is intended to be used as a guide in selecting the eight representative pigments.



I close this summary by a translation from the French of the two concluding paragraphs:

"The above reports, communicated by the four subcommittees that make up the Belgian Committee on Colorimetry, created by ATIPIC, do not pretend to be definitive documents, but they hope to be considered as a serious base for discussion. All organizations representing industries and personalities of the international scientific world interested in the progress of colorimetric science and its standardization are urged to join in this discussion.

"The Belgian Committee on Colorimetry therefore invites you to send as soon as possible to Commission Belge de Colorimetrie, 32, rue Joseph II, Bruxelles, Belgium, all remarks arising from an examination of the above-cited reports for the purpose, starting now, of putting the colorimetric studies on the path of a fruitful collaboration, very timely, considering the prospective approach of the common market in Europe."

D. B. Judd

MICHAEL WILSON TO  
ADDRESS THE IDI  
OCTOBER 24

Michael Wilson of the Goethean Science Foundation will lecture and visit (while in this country) a number of groups interested in color, among them the Washington Colorists on October 7, and the Chicago Industrial Designer's Institute on October 24th where his subject will be "Goethe's Theory of Colors and its Implication for the Designer." The following is an abstract prepared by Mr. Wilson:

Goethe considered the spectrum to be composed of two complementary and overlapping fringes of color, rather than one scale of monochromatic colors. These two opposing sets of 'boundary colors' or 'edge spectra' have some interesting characteristics which have been largely overlooked, but which can lead to further observations which are of interest to the artist and designer. They have to do with the nature of 'ideal colors' and 'optimal colors'; with the qualitative difference between additive and subtractive mixing; and with the difference between pairs of hues which are complementary by addition and those which are complementary by contrast. Some examples will be demonstrated.

(See News Letter No. 120, September 1955, pp. 9-13; and No. 129, May 1957, p. 17.)

COMMANDER DEAN  
FARNSWORTH RECEIVES  
LONDON ASSIGNMENT

From the Department of the Navy, Office of Naval Research, I received the following terse statement: "Commander Dean Farnsworth, for 14 years Head of the Visual Engineering Laboratory at the Submarine Base, has been assigned to the London Office of the Office of Naval Research, Box 39, Navy 100, Fleet Post Office, New York, New York, for a period of approximately two years as Scientific Liaison Officer in the fields of psychophysics, visual perception and spectrophotometry. His reports should



be helpful to the Council\* in establishing further color contacts with the rapidly accelerating work in color in England and on the Continent."

It seems to me that this statement is too condensed to describe the interesting assignment given to Commander Farnsworth. He is on the program of the National Physical Laboratory Symposium, and he will take an interest in the activities of the many color groups on the continent. As reported in the News Letter, some of these are becoming very active.

Editor's Note: Commander Farnsworth has accepted the coveted, (although low-paying) position of London Correspondent for the News Letter. The following is the first of many reports from Europe which we can expect from this eminent correspondent.

W. R.

COMMANDER FARNSWORTH  
LONDON LETTER

The day we arrived in London the newspapers carried the rather disturbing account of a lease-holder having painted his house in a sort of red-purple color. It was stated that the situation was being put before the London County Council. When we chose a flat in a row of Regency terraces on Hyde Park Square, our landlady assured us that all the houses were correctly painted in Paddington Stone as demanded by the L.C.C. "Paddington Stone" is the yellowish buff or dark cream found all over the town and which does so much to make London seem hazily sunshiny on the greyest days. The streets are colorful, full of variety and surprises, but all in a harmonious sort of way which it appeared must be the working of this omnipresent L.C.C.

Therefore I arranged to meet the Principle Assistant in the Planning Division of the Architects Department of the London County Council. It appears that the Town and Country Planning Act of 1948 permitted very extensive powers over architectural appearances, including the color of all exterior painting, but was "much too complicated." The General Development Order of 1950 further defined the responsibilities of the L.C.C. Areas in London are designated according to their "amenity value." They range from Westminster Abbey "of high historical importance" to the terraces on our own little Hyde Park Square "which by reason of continuity of design should be maintained as a whole." The unwritten standards are encompassed in the concept of "high visual amenities," a phrase which is paramount and deliberately undefined. The L.C.C. are particularly concerned with exterior finishes, colors and textures, trying to insure continuity with the surroundings. The "new red brick should not be introduced into a yellow brick area, and vice versa, as for example, in Kensington." The Principle Assistant disclaims any suggestion that the Architects Department has written standards, or makes demands, issues orders or enforces decisions. So there's nothing to enforce. (To an American, this seems like no control at all). Agreements

\*Inter-Society Color Council



are made in consultation. "We look at the surroundings and try to treat things in a human way." On new buildings decisions are made in connection with architects. In areas of lesser amenity value everything is left to the local councils.

Nevertheless, the aura of the L.C.C. hovers over all councils and is credited with unlimited powers by leaseholders. All are aware that there is a L.C.C. representative on each local council and this may be the strong hand in the smart suede glove. Whatever the secret behind the control, or uncontrol, it has produced a beautifully integrated color range in London streets, not yet found in any North American city.

Against the background of warm greys, yellows and weathered brick are accents of clear, pure colors for doorways, millions of flower boxes and tiny gardens profuse with blooms which do so well in this climate of alternating sunshine and showers, fruit and flower stands on the corners, glossy red busses which hurtle through the streets like bumbling beetles and the tall verticals of bright blue street-lamp poles which are left from the Queen's coronation.

There is one other repeated accent -- the first floor (second to us) bedroom drapes. There are more magentas in the windows than all other colors combined. No one knows why. But it is evident that the Fuchsias are popular with the English. "Vogue says Fuchsia" in the show windows, but it -- or they -- have not appeared on the streets. One wing of the Kew Gardens conservatories has been devoted to a magnificent display of hundreds of varieties with a color range from "pinkish-orange" to ultramarine. At the entry way I heard in best Cockney, "There dearie, I'm showing you what you'll be wearing next year," and the reply was "yes love, but which?".

Dean Farnsworth

W.E.K. MIDDLETON  
AWARDED D.SC. BY  
BOSTON UNIVERSITY

From Günter Wyszecki, National Research Council of Canada we have the following announcement:

On 2 June, 1957, Mr. W. E. K. Middleton, Head, Photometry and Optical Instruments Section, Division of Applied Physics of the National Research Council of Canada, was awarded an honorary D. Sc. degree by Boston University, Boston, Massachusetts.

STUDIES ON COLOR  
RENDITION OF  
LIGHT SOURCES

A report by Takashi Azuma, Leo Mori, and Haruo Sugiyama, on Color and Color Rendering Properties of High Pressure Mercury Vapor Lamps, from the Matsuda Research Laboratory of the Tokyo Shibaura

Electric Company, was recently received by your Editor and sent on for review to Dorothy Nickerson, chairman of the I.E.S. subcommittee on Color Rendition of Light Sources, and American representative on the C.I.E. international committee W-1.3.2, on this subject. The paper is in Japanese, with an abstract in English and headings and titles of tables and diagrams in English.



The authors report that while colorimetric data indicate that the color of their high-pressure, super-high-pressure, and color corrected mercury lamps should be named greenish white, yellow-toned-greenish white, and yellow-greenish white, respectively, subjective studies indicate that they change from white to a quite saturated green, according to the observing conditions. Their paper reports on the reasons for this, and evaluates the color rendering properties of these lamps and of their mixture with incandescent lamps according to the "Azuma-Mori" method.

Miss Nickerson reports that she hopes to have more information on this method after the next meeting of the CIE committee, which is being held in September in Paris, but meanwhile she has been very much interested to see that they are describing their color differences in terms of the Munsell concepts of hue, value, and chroma. They have worked out printed sign characters that would be very useful to anyone working in this field--e.g., the I.E.S. subcommittee could save a lot of words if these signs were available in type! They also report their results as vectors on a Munsell hue-chroma diagram. These practices seem so very practical that we illustrate Table 3, and Figure 4 from their report.

TABLE 3

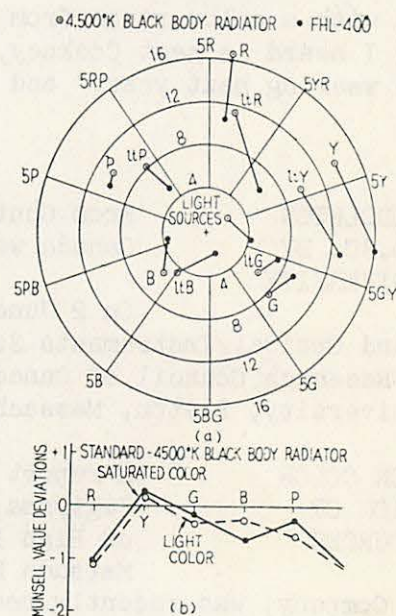
第3表 高圧水銀灯 (HL-400 H) およびその白熱電球との混光による色紙の色ずれ量

Color displacements under the high-pressure mercury vapor lamp (HL-400 H) and its mixtures with incandescent lamp in terms of 0.1 V=0.40 = 1 H (at C=6)

Mixing luminous flux ratio of HL:IL	10:0	7:3	5:5	3:7
Approximate lamp ratio	Without mixing	1:1 of 500 W IL	1:1 of 1,000 W IL	2:1 of 1,000 W IL
Temperature of standard black body radiator	5700°K	4500°K	4000°K	3500°K
Color paper				
R	39.3 ↓	17.1 ↓	9.3 ↓	2.8
Y	19.1 ↑	13.0 ↗	9.5 ↗	3.3 ↗
G	11.5 ↓	7.4 ↓	6.2 ↓	5.1 ↓
B	18.4 ↓	11.6 ↓	8.0 ↓	4.8 ↗
P	11.2 ↓	7.1 ↓	5.2 ↓	4.6 →
1t. R	28.8 ↓	16.4 ↓	9.0 ↓	4.9 ↓
1t. Y	13.5 ↑	8.5 ↗	3.3 ↗	1.3
1t. G	8.3 ↓	6.0 ↓	3.7 ↓	3.0
1t. B	13.5 ↗	8.8 ↗	7.5 ↗	5.0 ↗
1t. P	11.2 ↓	6.3 ↓	4.4 ↓	2.7
Mean	17.5	10.2	6.6	3.7
Over-all lumens per watt using 100 W IL	44	35	29	23

↑ : Value increase, ↓ : Value decrease, ↗ : Chroma increase, ↘ : Chroma decrease, ↗ : Hue shift in R→YR→Y direction, ↘ : Hue shift in the inverse direction.

FIGURE 4



第4図 けい光高圧水銀灯による色紙の色ずれ

Color displacements under the color corrected mercury lamp



Receipt of this paper suggested the thought that our News Letter readers might be interested to know that the CIE committee W-1.3.2 (Color Rendering) is at present compiling summaries of current papers on the subject of color rendition from its members. This means that there will be available in three languages (French, German, and English) summaries of all outstanding papers on color rendition, regardless of the country of origin. Mr. Azuma, it may be noted, is serving as Expert on the committee from Japan, as Miss Nickerson is serving from the United States. The following ten papers have been submitted from the United States for this international summary as representative of work now being done on this subject in this country.

B. T. Barnes, Band Systems for Appraisal of Color Rendition, in press for Jour. Opt. Soc. Amer. publication.

A. C. Barr, C. N. Clark, and J. Hessler. Evaluation of Color Rendition by Fluorescent Lamps. Illum. Engin. 47:649-656 (1952)

R. W. Burnham, R. M. Evans, and S. M. Newhall. Influence on Color Perception of Adaptation to Illumination. Jour. Opt. Soc. Amer. 47:35-42 (1957)

H. Helson, D. B. Judd, and Martha Wilson. Color Rendition with Fluorescent Sources of Illumination. Illum. Engin. 51:329-346 (1956) (3)

H. Helson, D. B. Judd, and M. H. Warren. Object Color Changes from Daylight to Incandescent Filament Illumination. Illum. Engin. 47:221-233 (1952) (1)

C. W. Jerome and D. B. Judd. Specification of Color Rendering Properties of Fluorescent Lamps. Illum. Engin. 48:259-267 (May 1953) (2)

D. Nickerson, Ch. IES subcommittee on Color Rendition. Progress Report on Color Rendition Studies. AMS No. 126, U.S. Dept. Agr., 24 pp. (June 1956)

D. Nickerson, Measurement and Specification of Color Rendition Properties of Light Sources. (Preprinted for I.E.S. National Technical Conference, Sept. 9, 1957, Atlanta, Ga., to be published later in Illum. Engin.)

Research and Engineering Council of the Graphic Arts and Illuminating Engineering Society Joint Committee, Recommended Lighting Practice for the Color Appraisal of Reflection-type Materials in Graphic Arts, Illum. Engin., Sept., 1957, also separate publication by RECGA, Sept., 1957.

On September 9, at Atlanta during meetings of the I.E.S., the U. S. Technical Committee (CIE) W-1.3.2, met to discuss the color terminology of color rendition, so that a report could be made at the Paris meeting, September 19, regarding definitions that would cover U. S. needs and practices. Dr. Günter Wyszecki, now with the National Research Council with Dr. Middleton at Ottawa, met with the committee. Both Dr. Judd and Dr. Wyszecki attended the Paris meeting of the committee.



ELEMENTS OF COLOR IN  
PROFESSIONAL MOTION  
PICTURES - NEW BOOK  
BY SMPTE

From Illuminating Engineering we quote the following announcement by I.E.S. concerning a publication of her ISCC sister Member-body--the SMPTE:

Elements of Color in Professional Motion Pictures, edited by Wilton R. Holm, published by Society of Motion Picture and Television Engineers, 55 West 42nd Street, New York 36, New York, 1957, 104 pages, 27 pages in color. \$3.50

This book represents more than a year's work by members of a special committee under the SMPTE Color Committee and has been prepared for those who work with color film--artist or engineer, craftsman or laboratory and production worker. There are twelve chapters with such titles as: Color Fundamentals, Characteristics of Color, Color Films and Processes, Photographing a Motion Picture in Color, Color Photography Outdoors, Color Photography in the Studio, Special Effects. Topics such as: nature of light, color vision, color mixture, color temperature and the effects of lighting in color photography are included and should be of particular interest to the illuminating engineer.

D.N.

COLOR BLINDNESS  
TEST BARGAIN

In the New York Times, Sunday, August 4, 1957, page 14 S, appeared the following advertisement: "Color Vision Test Book, Gov't Surplus, Never Used, M.D. U.S. Navy, Mfd. by Amer. Optical, 18 Pseudo-Isochromatic Plates for Testing Color Blindness, selection of charts and instruction approved by the Inter-Society Color Council Subcommittee.

"\$3.75, P.P. 25¢ (Reg. \$19.00), instructions included, Job Lot Trading Co., 53 Vesey St., New York City."

This test does not serve to separate protan from deutan types of red-green deficiency, nor does it give any reliable indication of degree of deficiency; but it is probably the best validated dichotomous test ever made available for the purpose of distinguishing subjects having a significant degree of red-green deficiency from those not significantly red-green defective. It would seem that the Navy has adopted for official use a diagnostic, quantitative test, thus releasing to the general public a superb 18-plate selection from the original AO 46-plate test at the bargain price of \$4.00. Members of the ISCC may wish to point out this bargain to their friends. No physician, personnel office, school, or hospital should be without a color-vision test, and those who already have one or more tests will find it advantageous to purchase this test if only as a control on the reliability of those in current use.

D. B. Judd

In a reply to my letter, the Job Lot Trading Company said, "We only have about 50 of these left, and we do not think they will last too long."

W.R.



NICKERSON COLOR FAN  
NOW AVAILABLE

Many of us in the Council have known that for a number of years Dorothy Nickerson has been working on the design and production plans for a color chart that would not only be of general use, but would be suited particularly to horticultural needs, both for color identification and for teaching color relationships, a chart "that would be inexpensive, easy to handle, based on sound principles of color organization, and equally useful for identification, specification, and for color harmony studies." It should be just as useful to illuminating engineers, architects, designers, and specific applications are planned for these fields later, but at present the emphasis is on horticultural needs.

The Munsell Color Company, through its manager, Blanche R. Bellamy, announces the September publication of the NICKERSON COLOR FAN, Maximum Chroma-40 Hue Fan, the first of four that are planned as a complete series. This maximum chroma fan displays 262 color samples, arranged on 40 fan leaves, each displaying a value scale of six or seven samples in a single hue. Each sample is identified by its Munsell notation and ISCC-NBS name printed directly on the sample. The fan is 7-1/2 by 1-3/4 inches, each sample is 1-3/4 by 13/16 inches, and its construction lends itself to mounting in the form of a large color wheel.

There will be three principal distributors for the fan, the American Orchid Society and the American Horticultural Council for the fields of horticulture, and the Munsell Color Company for fields other than horticulture. The American Orchid Society will distribute the first 1000 because it was through the chairman of the Color Committee, Mrs. L. Sherman Adams (who could forget her rainbow of orchids at Operation Rainbow, ISCC's 1950 meeting?) that arrangements were first made to produce the fan. The American Horticultural Council, following an invited report of the Color Fan development to its annual meeting, October, 1956, made arrangements for copies to carry the AHC name and be distributed by them for other horticultural uses (including the AOS once their first 1000 is distributed). Copies may be obtained at \$5 each, c/o Arnold Arboretum, Jamaica Plain 30, Massachusetts. \*Reprints of Miss Nickerson's paper to the AHC, as it appeared in the Proceedings of their 11th Annual Congress, may be obtained by writing either to the author at the U. S. Department of Agriculture, Washington, D. C. or to the Munsell Color Company, Inc., 10 East Franklin Street, Baltimore 2, Maryland.

Perhaps some idea of the cooperation of the American Horticultural Council may be gained from the following resolution, passed at their 11th Annual Congress:

BE IT RESOLVED, that this organization express its appreciation and acknowledge its debt of gratitude to Miss Dorothy Nickerson, of the United States Department of Agriculture, for her extended and unselfish devotion, for her considerate application of highly



technical competence, and her infectious enthusiasm, to render needed assistance to plant and flower lovers of every country, by having designed a horticultural color fan in conformance with acknowledged color standards, and of a form useful to professional and amateur, that our needs in this field may more adequately be met than ever before.

Miss Nickerson asks that we mention the fact that many of those involved in the development and production of this fan are individual members of ISCC and that their participation was typical of ISCC cooperation. "Blanche Bellamy comes first, of course, for without her there might have been no fan, then Helen Adams, Hugh Davidson and Henry Hemmendinger's staff at Easton, Tobey Lewin and his staff in St. Louis, and many others with whom it was a pleasure to work."

**SUN CHEMICAL DEVELOPS NEUTRAL PAINT** Sun Chemical Corporation has announced the development of a completely neutral grey paint for use in printing plants and experimental laboratories where color tests are being conducted. The new paint, called Graphic Arts China-Luxe Grey, resulted from joint studies by two Sun Chemical divisions, the General Printing Ink Company and A. C. Horn Company, Inc.

When measured spectrophotometrically, surfaces finished with the new paint show virtually linear response to all wavelengths in the visible spectrum. For this reason distortion of a color under observation is held to an absolute minimum, the company says. The overall reflectance has been established at approximately 60%.

The paint is now available in three finishes - flat, semi-gloss and enamel. It will be sold on a custom or prescription basis, rather than carried as a stock item. Although developed primarily for the printing industry, this new product is expected to receive acceptance in many other fields where color-testing and matching is an important factor.

Additional information is available from A. C. Horn Company, Inc., division of Sun Chemical Corporation, 10-10 44th Avenue, Long Island City 1, New York.

**ADDITIONAL REPRINTS OF "A CHALLENGE TO COLORIMETRY"** This is a forward-looking, progressive publication. In anticipation of the great demand for reprints of Professor Wright's article we printed more than was needed for distribution in the News Letter. These are available at no cost through the secretary, R. M. Evans, Color Technology Division, Eastman Kodak Company, Kodak Park, Bldg. 65, Rochester 4, New York.

**MISCELLANY** In a letter one reader (We do have readers. We get an occasional letter.) sent me a story, explaining that there was very little humour in the News Letter. Now, we're human, too, and we enjoy a good story as much as anyone. Just to prove it, we're instituting the "Miscellany" section. Hope you like it. If you have an impulse to send in something light and interesting, send it to us. Maybe we'll print it, too.



Seems like everyone in Texas isn't rich. A lady who ran a sheep and lamb ranch was dyeing her curtains one day and a lamb blundered into the vat in the back yard and got dyed a deep green. She rescued the lamb and put him in the front yard to dry. A man came along, saw the lamb and bought it for \$50.00. Seeing what looked like a good thing, she grabbed another lamb, dyed it purple and sold it for another \$50.00. Don't you know she became the biggest lamb dyer in Texas?

Margaret M. Balcom

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The situation must have been really serious because we got another letter from T. S. Andrews, Martin-Senour.

"Dear Mr. Rhodes: It isn't too often that the Inter-Society Color Council News Letter has a chance to be enlivened by a little humor.

Perhaps you would like to use the tongue-in-cheek article by John T. McCutcheon, Jr. which recently appeared in the Chicago Tribune."

From the Chicago Tribune: AUTOMATION TAKES TO MIXING PAINT

We stopped by the Union League club the other afternoon to see the unveiling of automation's latest achievement, a paint mixing device called "Colorobot."

We shall leave it to others to tell you about the useful things that Colorobot can do; what always fascinates us about automation is the amazing number of useless things it can do.

Colorobot, briefly, is shaped like a big throne. Around the arms are eight containers of standard "colorants" connected by tubes to a container on the seat of the throne, where the basic paint, to which the colorants will be added, is placed. Up on the back is a control panel with a slot in which to insert the desired punch card. The machine can deliver three colorants at a time, in measurements as small as one-thousandth of a quart. Its purpose is to enable dealers to make and reproduce an unlimited number of tints with scientific accuracy. Already cards have been punched for about 7,500 tints.

What especially appealed to us were two statements. In one, William M. Stuart, president of the Martin-Senour company, which fathered the device, said that the number of colors it can produce is 999 cubed times 8 to the 7th power, or roughly 16 quadrillion. In the other the firm's color stylist, Margaret Hutchison, told us that the average person can distinguish 2 million colors.

"You can see," she said, "that there is point thinking beyond that."

But she was too late. Our mind was already wandering far beyond anything that Martin-Senour had in mind. Dividing 16 quadrillion by 2 million, we



got 8 billion. This means that for every distinguishable color the machine can make, it can make 7,999,999,999 others which are different and yet cannot be distinguished from it by the human eye.

In more personal terms, it means that 6 million different colors can be produced for each inhabitant of the earth, and that all of these will look just the same to him.

It also means that at the rate of 16 seconds per gallon mixture (the time it took during a demonstration), it would take 8 billion years for the Colorobot to run thru its complete repertoire. We had to leave before the ceremonies were over. The North Western trains sometimes run late, they are never that late.

But we do recall something else in Mr. Stuart's dedicatory words. "Long ago," he said, "we decided that we would hitch our wagon to a star, and that that star would be color."

It must be satisfying to him now to realize that he can hitch his wagon to any star in the universe and that with the help of Colorobot each one can be a different color.

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In the files which I received from Eugene Allen I found the following letter:

"Dear Dr. Allen: Enclosed with this letter is an amusing lipstick color card. ...the unusual color names given to the six shades of ELVIS PRESLEY Lipstick: Heartbreak Pink, Hound Dog Orange, Cruel Red, Tender Pink, Tutti Frutti Red, and Love Ya' Fuchsia.

This certainly is not the first time that a personality "in the public eye" has had an influence on fashionable color names (even though, in this instance, it may not be high-fashion in any sense of the word). But it is somewhat unique (if not Heartbreaking) to imagine a teen-age girl with Tender Pink cheeks and Cruel Red lips saying to her boy friend, "You're nuthin' buta Hound Dog if you don't get me a tube of Tutti Frutti Red lipstick." The prospect of such a scene might be enough to turn some of us Elvis Green with nausea (or envy as the case may be).

I think that it is safe to conclude that all of these color names may never be adopted by the Color Association of the United States (formerly TCCA) nor they may never be recorded in future editions of the Maerz and Paul Dictionary of Color. These queer lipstick color names, however, do indicate the taste of some of the young set for colors and terms they think appropriate.

E. Taylor Duncan"

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Color, it is said, is becoming increasingly important in homes. From Dr. Arlene Morris, Visual Detection and Concealment Section, US Naval Electronics Lab, San Diego, California comes this note about one home owner who went all out.

"No matter what the weather is like there's always a rainbow around the home of H. T. Lawson in Cattaraugus, New York. That's because Lawson, a sign painter, impressed by the use of pastel shades on homes in Florida, painted his house in rainbow hues.

Lawson has 21 tints adorning his home, known throughout the county as 'Rainbow House.' He has renamed his acreage, which is a locally famous landmark, 'Colorama Farm.'"

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Another interesting item was sent in about homes. HOMES TURN COLOR; TESTS SEEK REASON. Rutherford, New Jersey, June 26.

"The State Board of Health made tests today to find out how and why some 200 homes in nearby Lyndhurst had changed color overnight.

Residents of the homes woke up yesterday morning startled to find that paint on their houses had changed color. Hardest hit were some 30 homes whose white frames had turned to dark brown during the night. The discoloration could not be removed with water."

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#### COLORS ON ROADS

The Abruzzi Asphalt Society of Rome has come up with the idea that highways of the future can have various tints to reduce glare and the need for road signs. Northbound travelers might thus take the green road to Milan or the yellow road to Venice. The inspiration came to the chemists experimenting for the Society with colored asphalt left from the extraction of aluminum from bauxite rock. The material is suitable for road surfacing and could come in various shades of red, green, white, brown or yellow.

From "The Sight Saving Review," Fall 1956

#### COLOR CAN BE HELF TO DAN CUPID'S CAUSE

One decorating authority says that colors can help a gal get married or stay single -- whichever her choice.

Mrs. Jo Bull, an advisor to paint and wallpaper distributors, advised a girl with marriage in mind to meet the man she likes in a room where red and yellow predominate.



"They arouse the emotions and provide a good background for a proposal" Mrs. Bull explained. Blue and green, on the other hand, are perfect aides to the career girl who wants to stay that way, she said. Because "blue and green give a feeling of coolness and space" she said, they tend "to cool off an importunate suitor."

H.D.T.

FRANCE AMERICAN  
MEDICAL JOURNAL

Testing Color Perception. --J. Baron and his co-workers (Presse med. 64:561, 1956) used Farnsworth's 100-hue test for testing color perception in 137 subjects whose work in a factory required perfect color vision. They report that the test appears to have some value for assessing a subject's capacity of discriminating hues, and that this constitutes an advantage over those other tests for color perception that provide information only about the inability to discriminate hues. It is pointed out that it is time-consuming, however, and its interpretation may depend to some extent on the lighting and the fatigue and mentality of the subject, so that it may have to be repeated a number of times until a stabilized diagram is achieved.

H.D.T.

A HISTORY OF  
LUMINESCENCE

The American Philosophical Society has announced the publication of A History of Luminescence (From the Earliest Times Until 1900) by Newton Harvey. According to the Prospectus, "The purpose of this HISTORY is to trace the discovery and the ideas regarding all these weak lights without heat from the earliest times until the end of the nineteenth century. As far as possible, the attempt has been made to present the views of the authors in their own words, like a source book of information on the subject." The book is listed as Volume 44 of the MEMOIRS. xxiii 692 pp., 50 figs. Cloth \$6.00.

LIST OF ARTICLES ON  
COLOR RECEIVED BY  
NEWS LETTER

"Color and Color Rendering Properties of High Pressure Mercury Vapor Lamps," Takashi Azuma, Leo Mori, Haruo Sugiyama, Matsuda Research Laboratory, Tokyo Shibaura Electric Co.

"Retinal Summation and the Visibility of Moving Objects," G. van den Brink, Institute for Perception RVO-TNO, Natl. Defense Res. Council TNO, Natl. Council for Applied Scientific Res. in the Netherlands, 104 pp.

"Axial Chromatic Aberration of the Human Eye," R. E. Bedford and G. Wyszecki, Journ. Opt. Soc. Amer. 47:564-565.

"THE MUNSELL COLOR FAN, Modern Color Science is the Background for a New and Useful Color Chart for Horticulture," 1956 Proceedings of the 11th Annual Amer. Hort. Congress and Annual Meeting Amer. Hort. Council, 11 pp. (1957)

"Horticultural Colour Chart" Names with Munsell Key, Dorothy Nickerson, Opt. Soc. Amer. Journ. 47:619-621. (1957)