

D.B. Judd

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INTER-SOCIETY COLOR COUNCIL

NEWS LETTER No. 29

MAY 1940

I. H. Godlove, Editor-in-Chief
Charles Bittinger, Editor for Art

C. E. Foss, Editor for Industry
D. B. Judd, Editor for Science

NEW DELEGATES AND

We are glad to welcome as new delegates:

INDIVIDUAL MEMBERS

Louise L. Sloan, the tenth delegate from the American Psychological Association;
A. G. Ashcroft and C. J. Huber, the fifth and sixth delegates from the A. S. T. M.;
and the following individual members:
Robert V. Garner, c/o Bird & Son, Inc., East Walpole, Mass.;
Hercules Powder Company, Experiment Station, Attn. Robert E. Osborn, Wilmington, Del.;
Andrew P. Kruper, Fisher Scientific Co., 711-23 Forbes Street, Pittsburgh, Pa.;
John P. Mather, General Printing Ink Co., 100 Sixth Ave., New York City;
Arthur B. Sherry, Egyptian Lacquer Mfg. Co., 360 Union Ave., Elizabeth, N. J.

AMERICAN CER- AMIC SOCIETY

A list of ten delegates to the I. S. C. C. from the American Ceramic Society for the period April 1940 to March 1941 has been published in Bull. Amer. Ceramic Soc. 19, 185 (May, 1940).

WASHINGTON

COLORISTS

The Washington Colorists met at the Arts Club for dinner on April 8. Mr. Carl E. Foss, Vice-chairman of the Council, was a guest; and showed the Kodachrome pictures which he took last summer when on vacation. Other color features were an RCA recording which tells the story of color printing and photography, and a Technicolor picture in which James Montgomery Flagg tells "how it's done". As favors the guests received either a magic color pencil or a set of folders "What is your favorite color"? These favors were in great demand; and the Council member who supplied them was much thanked.

ASSOCIATION FOR

COLOR RESEARCH

The A. C. R. of Chicago met for dinner on April 3, at R. R. Donnelley & Son's Company. Mr. Charles Kuoni, head of Donnelley's color studio, talked on "Working with Color in the Graphic Arts." His talk and demonstration followed the color theory through from the beginning of the photographic operation until the printed result in color is obtained.

BEG

PARDON

We wish to apologize for the clerical error which caused us to omit inadvertently reference to the Boston Color Group's February meeting, notice of which was received. The meeting was held at the usual place on February 20. Mr. Lee W. Court, Assistant Operating Superintendent of the William Filene's Sons Company, spoke on "Color and Design as Used in Department Store Modernization". Among many other duties, Mr. Court has charge of interior decoration and window design and all color work and store modernization at Filene's.

BOSTON

COLOR

GROUP

The April meeting of this group was held on April 23, as usual at Madame Burguet's. The speaker of the evening was Professor Arthur C. Hardy of Massachusetts Institute of Technology, who discussed the Munsell System. He began by reminding his audience, composed of an unusually large number of members and guests, that Dr. Walter Scott had spoken on the same subject a year earlier; and he reviewed the rules which, according to Dr. Scott, had been followed by Professor A. H. Munsell in the establishment of his color system. By following these rules, the result is a psychophysical system of color specification similar to the I.C.I. system which Professor Hardy had discussed at one of the first meetings of the Boston Color Group. The term "hue", as used by Munsell, is synonymous with "dominant wavelength," and there is a simple mathematical relationship between "value" and "brightness" and also between "chroma" and "colorimetric purity." Possibly the most interesting feature of the talk was the exhibition of the five principal hues upon which Munsell built his color system. The samples exhibiting these hues had been prepared especially for this meeting from data obtained at the Bureau of Standards in 1919. The speaker ventured the suggestion that the colors prepared in this way were probably more truly representative of those used by Professor Munsell than any samples that might have been preserved through the intervening years. In any event, these colors, when mixed in equal areas on a spinning disk, produced a very satisfactory neutral gray.

INDIVIDUAL

MEMBER GROUP

Professor Hardy was also the speaker at the dinner meeting of the Individual Group of the I.S.C.C., held at the Hotel Dryden, New York City, on the evening of April 18. His subject was "Color Photography." The talk dealt with the application of spectrophotometry and colorimetry to the problem of color reproduction, and was illustrated with a large collection of natural color photographs.

COMMITTEE

MEETINGS

The first meeting of the Public Relations Committee was held on March 22 at the Research Laboratories of the Interchemical Corporation, New York City. Committee members present were M. Rea Paul, Chairman; Godlove, Hardy (A.C.), Rahr and Welp. Carl E. Foss, vice-chairman of the Council, was also present, and took part in the discussion. In addition to general questions of functional scope and publicity policy, there were discussed certain questions connected with the sphere of influence and construction of the I.S.C.C. and in this connection voted two resolutions to be presented to the Executive Committee for consideration at its next subsequent meeting. A meeting of the latter committee has since been called for Monday, June 10, in Washington, D. C.

COMMITTEE

MEMBER

The name of Mr. E. M. Loveland has been added by Dr. Dimmick, chairman of the Problems Committee, to the sub-committee on Color Aptitude Test.

D-13, A.S.T.M.

APPROVES COLOR

NAMES METHOD

At a meeting in Charlotte, N.C., on March 13-15, of Committee D-13 of the American Society for Testing Materials, the following motion was passed: "That in order to promote uniformity of nomenclature in the presentation of textile color data, Committee D-13 shall endorse the method of designating colors (known as the method of ISCC-NBS) developed by the Inter-Society Color Council at the National Bureau of Standards, and shall print this endorsement in its annual report and bulletin."

ART CENTER

EVENTS

Announcements of lectures and study courses sponsored by Art Center, Inc., Chicago, unfortunately were received in each case after the events had partially transpired. These include a course of lectures and demonstrations entitled "The Artist's Problem: Basis, Analysis and Solution", by the distinguished American artist, Edgar Miller, at the Chicago Academy of Fine Arts, on April 2, 9, 16, 23 and 30; also a course on Illustration by Haddon Sundblom, at the Frederic Mizen Academy of Art, on May 7, 14, 21, 28 and June 4, and a course on Typography by John Averill, at the Ray Schools on May 2, 9, 16, 23 and June 6. There was announced also the First Annual Art Students Exhibition in the main galleries of Art Center Chicago, from April 15 to May 3. The participating art schools were the three just named and the American Academy of Art, the Chicago Professional School of Art and the Harrison Commercial Art Institute. We have from time to time received notices of other Art Center activities which we have failed to report when they were somewhat afield from the province of color; but at this place we wish to congratulate Art Center on its prolific and interesting activities. We have received various notices also of activities of the Society of Typographic Arts, like our affiliate, the Association for Color Research, one of the cooperating member groups of Art Center. Though the subjects are usually not limited to color, color frequently is an important aspect. For example, an Evening Meeting on May 8 with the subject "How to Choose a Paper", of course included remarks by the five speakers on the relation of color to paper selection.

IT'S YOUR NEWS

LETTER AND

WE THANK YOU

The Editor wishes to announce that for the first time, in the history of his editorship, news items were furnished to him by more than the usual two or three contributors who have perennially contributed. This time there were more than half a dozen contributors. (N.B. We shall not stress the fact that items were received from six persons in response to "tickler" letters from one of the old faithfuls located in Washington. We note only that six out of nine may be a record response.) Thank you, contributors, thank you!

SYMPOSIUM ON

SPECTROPHOTOMETRY

Early in May we received a letter from Dr. John L. Parsons, delegate of the Technical Association of the Pulp and Paper Industry, regarding the publication status of the papers of the Symposium on Spectrophotometry in the Pulp and Paper Industry, held on February 21, in the Roosevelt Hotel, New York City, in connection with the Ninth Annual Meeting of the I.S.C.C. Dr. Parsons was the chairman of that session. He states that the papers comprising the Symposium should appear in the Paper Trade Journal before July 1. They will also appear in Technical Association Papers which will be out sometime next month. Reprints of the Symposium will be available to Council delegates. Dr. Parsons also stated the hope that Judd's paper on the ISCC-NBS method of designating colors and the Godlove and Laughlin paper on the psychology of color will be published at the same time; but exact publication dates were not known to Dr. Parsons at the date of his letter.

EXHIBIT OF

CONTEMPORARY

AMERICAN

INDUSTRIAL ART

The Secretary of the I.S.C.C. has received a letter from Mr. Richard F. Bach, Director of Industrial Relations of the Metropolitan Museum, New York City, stating that an Exhibition of Contemporary American Industrial Art is to be held at the Museum. "The collection is one of value to all interested in home furnishing and the decorative arts generally," writes Mr. Bach, "we trust that many of your members will find opportunity to come to the

Museum during the showing." The date of the exhibition was not stated. Mr. Bach's letter was dated May 6.

GAGE'S We reproduce here abstract of a paper by Dr. H. P. Gage, chief of the
S.M.P.E. Optical Division of Corning Glass Works, and a member of the Council's
PAPER Executive Committee, presented to the Society of Motion Picture
Engineers at Atlantic City on April 22. The abstract was prepared by
Dr. Gage at the Editors' request; and he states that it is slightly
modified from that in the Journal of the S. M. P. E. for April 1940,
page 447.

Color Theories and the Inter-Society Color Council. Thanks to intensified study of color by scientists of the National Bureau of Standards, of the Agricultural Marketing Service of the U. S. Department of Agriculture, of the Committees of the American Association of Railways, glass manufacturers, paint and ink manufacturers, the American Pharmaceutical Association, and photographic manufacturers and the stimulation of the motion picture industry, the theories of color have been put in shape and tied together with extensive data on the color vision of many observers so that a workable engineering evaluation of colors, a scientific system of naming them, and practical means of producing them to exact specification is now available and is ripe for presentation not only to learned societies but to the general public.

The phenomena and theory of the production of color in photographs both still and motion picture have been frequently presented to this society, and some phases will be rapidly reviewed in a demonstration of the spectral characteristics of color. Colored lights are subject to spectrophotometric measurement and by means of the I.C.I. (International Commission on Illumination) data can be interpreted in terms of luminosity and the x and y coordinates (or map) defining chromaticity. In these terms are being defined the color limits for railway signal colors, also all standard Atlases of Color such as the Maerz and Paul Dictionary of Color, the Munsell Book of Color, and, it is hoped, the next standard set of colors of the Color Card Association of the U. S. used by all manufacturers of clothing and other things in which standardization of manufacture in spite of rapid changing styles is an economic necessity.

Color Names. The next edition of the Pharmacopoeia and of the National Formulary, sponsored by the American Pharmaceutical Association, will use the system of color names developed and recommended by the Inter-Society Color Council in cooperation with the National Bureau of Standards to describe the normal appearance of all drugs and chemicals. A shorthand method of describing the spectrophotometric analysis of color filters for theatre spot and floodlights in the form of a seven digit number has been devised for commercial specification of this material. These activities of numerous separate individuals and members of different technical societies have been coordinated and freely discussed by the delegates and individual members of the Inter-Society Color Council so that all phases of the situation are brought out.

The Inter-Society Color Council is made up of 74 delegates appointed by 11 member societies, and by 67 individual members. It functions as a joint committee on color of the member societies favored with the advice of the individual members. The Council issues News Letters in mimeograph form to its members. They contain information of progress in color work, notices of important color publications, the activities of the Color Council and notices of its planned meetings. It is not intended as

a competing journal but with the minutes of the meetings serves as a basis for reports by the delegates to the member societies which can be published in their Journals. The Council sponsors meetings with the member societies on the subject of color. Proceedings are published in the journals of the societies. Such joint meetings have been held with the Optical Society of America, the Technical Association of the Pulp & Paper Industry (TAPPI), the American Psychological Association. A joint technical session on color will be held at the annual convention of the Illuminating Engineering Society this fall and also with the American Society for Testing Materials at its 1941 spring meeting to be held in Washington.

PSYCHOLOGY One of the papers to which Dr. Parsons referred (see above) was of
OF COLOR this title by Godlove and Laughlin of E. I. du Pont de Nemours and
 Company. In spite of suggestions from the Council Secretary and from
 others that a notice of this paper appear in the News Letter, the
 Editor was reluctant to insert one until he recalled some lines
written by him in the January, 1937, issue, under the title "A Hueful Talk to You".
There he wrote: "But we were inditing our Apologia--or were we? We are not long given
to the modest mood. The attitude is strange and makes our joints creak. There is too
much exhilarating color in the world!"

Here we may say that the paper will appear, in various full or abbreviated forms, in several technical publications, which will be duly noted in the bibliography. The paper was a popular presentation, by the first-named author, of an assigned subject, the second-named author condensing and molding it to the special interests of paper men. The latter author prepared most of the color exhibits (e.g. after image and "contrast effects") after a study of many dyed paper samples. The body of the paper was a review of papers by Guilford, Collins, Dimmick, Helson, Judd and foreign experimenters, along with special applications to colored and printed paper. This paper was part of the TAPPI program which preceded the Symposium on Spectrophotometry referred to in the earlier item.

PHYSICS This is the title of a paper in J. Appl. Physics 11, 46-55 (1940)
IN COLOR published in January by D. L. MacAdam of Kodak Research Laboratories,
 Rochester, N. Y. This interesting paper does not readily permit of
PHOTOGRAPHY short abstracting; so we shall confine our remarks here mainly to
 incidental ones. The paper begins and ends with the part which
 physics has played in color photography. "Modern color photography,"
 MacAdam begins, "is a triumph of applied chemistry. The fact that
the science of physics has had no part in the recent spectacular improvements is
amazing to those who remember that the basic idea of three-color photography was conceived by the physicist Maxwell as a result of physical measurements made during his study of color vision." He goes on to discuss the principles of the additive mixing process of Maxwell and its applications by Ives, along with the errors introduced by the limitations of available filters. Considering next the subtractive process, he mentions the additional deviations from the ideal, and goes on to say: "The failure to recognize the general applicability of color-mixture data led to the early and very persistent lack of confidence in the suggestion that the spectral sensitivities for color photography should be identical with the color-mixture curves." The author's discussion contraverts the idea that the usefulness of these curves is confined to the matching of spectrum colors. There was discussed also another error which was "primarily responsible for the abandonment by physicists of almost all active interest in color reproduction."

In giving a discussion of the principles of subtractive color reproduction, MacAdam discusses the work of Van Krefeld (1934), Webb (1936), Spencer (1935), Bull (1904-5, 1935), Yule (1938) and himself (1938), and stated that this work afforded an experimental justification of the "intuitions of Maxwell and Ives, so long distrusted by color photographers." Further, that the peculiarity of the photographic response which appeared to forbid the application of physical reasoning is a 35-year-old misconception which need no longer discourage the interest of physicists in color photography. Next the "masking method" of color correction (Albert, 1899, 1900) is discussed in some detail in connection with the spectral absorption curves for hypothetical ideal and typical available yellow, magenta, and cyan (blue-green) dyes. The discussion shows that the use of cyan, magenta and yellow dyes or pigments in the subtractive method is optically equivalent to using red, green and blue "unitary" colors additively mixed. The author then concludes: "All of the optical problems might have been the subjects of less trial and error.... if physical reasoning had not been rejected as inapplicable to color photography.... The renewal of active cooperation between photographers, chemists, and physicists may yet contribute greatly to the perfection of color reproduction." The I.-S. C. C. may well join the author in the hope for cooperation between these different groups interested in this important province of the color domain.

COLOUR IN THEORY AND PRACTICE The following review of the book of this title by H. D. Murray and D. A. Spencer, is slightly condensed by the editors from one prepared by Professor S. M. Newhall. Volume I, entitled "General Theory" (1939), contains 176 pages and 109 illustrations. It is published by American Photographic Publishing Co., 353 Newbury Street, Boston, Mass. This work is concerned with "the photographic and printing aspects of the subject." But in Vol. I, the aim is "to give a full and coherent treatment of the theoretical side of the science". In Vol. II, those aspects of the science will be dealt with which have "specific application in the photographic and printing industries." The authors have achieved their aim in Vol. I to the extent of producing a book of considerable importance for the general colorist, that is, for him who desires the more comprehensive picture of his multi-sided field rather than intensive information along one line alone. Comprehension of the general reader is facilitated by minimizing the use of mathematics; by the inclusion of 13 color figures illustrating essential principles or phenomena; by preceding the text with a list of the 35 symbols employed in it; and by following the text with a color glossary of 80 terms. There are also an index and an appendix of colorimetric tables. The text itself is oriented around 14 important topics, each one of which is necessarily treated in a highly condensed manner. Nevertheless, not only the broad view is provided but also a great deal of specific, clearly presented, factual information. This combination would seem to be the outstanding and almost pioneering merit of the book. Perhaps by reading it many colorists can fill various lacunae in their color knowledge, and so learn to understand each other better. As the psychologist is not satisfied with the psychology, so the physicist or the chemist or the physiologist may not be satisfied with the physics or the chemistry or the physiology. Of course, the book is not perfect, but it may be closer to perfection than some of us are outside our own particular field in color.

The titles of the chapters supplemented by the authors' apt quotations from Alice in Wonderland (some of which we reproduce) suggest the general arrangement and scope of this work: 1. Origin and nature of light ('The executioner's argument was that you couldn't cut off a head unless there was a body to cut it from'); 2. The

production of colour ('Would you tell me', said Alice, a little timidly, 'why you are painting those roses'); 3. The chemistry of colour ('But I was thinking of a plan to dye one's whiskers green'); 4. The transformation of light energy ('She tried to fancy what the flame of a candle looks like after the candle is blown out'); 5. Spectrometers and spectrophotometers ('She could see it quite plainly through the glass'); 6. Practical light sources; 7. Light filters; 8. The human eye; 9. The physiology of colour vision; 10. Theories of colour vision and of colour blindness; 11. The measurement of colour; 12. The psychology of colour ('Well! your feelings may be different'); 13. Colour in nature ('Alice looked all round her at the flowers and the blades of grass...'); 14. A classification of natural and synthetic colouring matters ('But that's only what it's called, you know!'). Perhaps the weakest chapter is that which deals with the theory of color vision and of color blindness. Here the treatment seems too sketchy to be of much use to any but the wholly uninitiated. For instance, G. E. Muller is not even mentioned. The chapter on the psychology of color is rather disappointing, too; perhaps because no psychologist has yet undertaken to define carefully the field. A great deal of what the authors have included in the chapter entitled 'the physiology of colour vision' to the psychologist would seem to belong with the psychology; color sensations, the attributes of color, color contrast, Fechner's colors, disc color mixture, color matching, and color sensitivity are cases in point.

The content of the 12-page chapter on 'the psychology of colour' is well suggested by Alice's subtitle. Here are included those more dubious relations concerning which the psychologist is so rightfully sceptical but which the layman regularly discusses so blithely, e.g., color preferences or feeling-tone, color associations, sales values of color combinations, color music and color in the theater. Emphasis is almost entirely on color in relation to such 'higher processes' and while the statements are less wild than usual, the outstanding recent American contributions here are not even mentioned (e.g., Karwoski, Guilford, Ross). In a word, the psychologist is disappointed because the authors either entirely omitted or else mistitled many well-established sensory facts and principles of color psychology, and committed the usual error of featuring more sensational, dubious, and controversial matters. Nevertheless, the uninitiated may derive valuable orientational information. While what seems good may depend upon what one doesn't know, the other chapters seemed better done; e.g., the relatively long chapter on the measurement of color seemed especially informative to the writer. Here one finds some description of the Munsell system, the ICI coordinate system together with the Standard Observer and Illuminants; Judd's UCS coordinate system and the ICI-UCS graphic transformation. The Wright and Donaldson colorimeters and the Lovibond Tintometer are illustrated and described. Relevant to this chapter are the tables in the appendix which include the energy distributions of the A, B, C Illuminants; the trichromatic and distribution coefficients for the equal-energy stimulus; computational tables for the A, B, C Illuminants, and the thirty selected ordinates for the Standard Illuminants. No mention is made of Troland's photon, the unit of retinal illumination; but this term, which was borrowed by the physicists some years later, is defined as an energy quantum of visible light. This detail is cited merely to emphasize the physical slant of the text. So it is not at all strange to find favored a physical conception of color: "Colour is an objective term commonly used in a specific sense to characterize the nature of the radiant energy transmitted by or reflected from a given object, when the relative distribution of such energy is not substantially uniform throughout the whole of the visible spectrum." This definition implies that those energy distributions which correspond to what are

conventionally referred to as 'achromatic colors' are not included in the conception of color. In spite of various inevitable biases, Vol. I of Colour in Theory and Practice may well provide valuable, integrative reading for most specialized colorists.

COLOR We have received copy of a report with this heading dated March 21, 1940,
TERMS addressed to the committee (Dimmick, Gage, Foss) considering the subject,
by Kenneth L. Kelly, Research Associate at the National Bureau of Standards
from the A. Ph. A. and U. S. P. Along with this report we have a letter of
April 3 from Dr. F. L. Dimmick, Chairman of the Problems Committee, which
we quote as follows in full: "Your proposal of color names for samples viewed by
transmitted light seems to me to be an excellent solution of the problem. I think
the matter is ready now to go ahead with the letter ballot so that the terms can be
officially accepted." Kelly's report follows: At the Inter-Society Color Council
meeting in New York, the question was raised as to the suitability of the names,
light smoke, smoke, and dark smoke for application to the colors of non-light-
scattering media which would have received the names, light gray, medium gray, and
dark gray if these had been surface colors. The use of the terms, colorless, white,
and the ish-whites for the same purpose was also discussed. The discussion was
carried by Messrs. Dimmick, Gage, Foss and Kelly. At Chairman Judd's suggestion,
the discussion was tabled until these men could reach an agreement which would then
be submitted to the membership for acceptance in the form of a letter ballot. Dr.
Dimmick appointed Kelly chairman of this committee. The comments and suggestions of
these men are as follows:

DIMMICK. Dr. Dimmick objected to the color names containing the term, smoke, as not
truly descriptive of the media to be described, which are perfectly clear. Smoke
scatters light; hence, the adjective, smoky, does not apply to clear media. He
suggested that since the conditions of viewing are specified so that the color
perceived is that of the white cardboard illuminated by daylight and modified by the
color of the solution in the vial, the terms, dark gray, medium gray, light gray,
white, and the ish-whites are perfectly applicable. He objected to the term color-
less, since one really sees white when a colorless liquid is viewed under these
conditions.

GAGE. Dr. Gage's suggestion was that the term, cloudy, (REPORT OF THE JOINT COMMITTEE
ON ILLUMINATING GLASSES, reprinted from Transactions of the Illuminating Engineers
Society, vol. XXIX, No. 8, September, 1934, page 679) be used instead of translucent.

FOSS. Mr. Foss agreed with Dr. Dimmick that he preferred the term, gray to smoke,
but he had no preference between colorless and white. He referred that question to
Kelly.

KELLY. Since the term, smoke, was suggested only because it is used in the glass
trade, I am in accord with the suggestions given above that gray be used instead of
smoke. This would mean that all of the color names applied to surface colors may be
applied to volume colors with the exception of the terms, white and ish-whites.
After talking with Dr. Gathercoal and other pharmacists and chemists, I find that
they prefer the term, gray to smoke. However, they call an achromatic non-absorbing
liquid "colorless" and do not like the term, white, when applied to such a liquid.
They are accustomed to holding up a test tube of water or alcohol for instance, and
looking through it at the sky or a white wall or paper. They recognize it as color-
less if it does not change the color of the background. Therefore, for the

description of volume colors in drugs and chemicals, I recommend that the following terms be substituted:

Proposed color names for samples viewed by transmitted light. : The ISCC-NBS color designation for opaque samples viewed by reflected light.

Colorless			white
faint pinkish	(color)	To be	pinkish white
" yellowish	"		yellowish "
" greenish	"	respectively	greenish "
" bluish	"	substituted	bluish "
" purplish	"	for	purplish "

All of the other color names are to be used interchangeably for either surface or volume colors.

The term, faint, is suggested since it has not been used elsewhere in the system and since it means a weaker and lighter color than pale or very pale. Even in the pinks, where it would indicate a color weaker only than pale, I think that it would be distinctive enough when combined with the term pinkish color. The term, pinkish color, alone would not be sufficient since the very indefinite term, pinkish, or pinkish colored, for instance, has been suggested to describe a wide range of pinks when definiteness is not desired. It should be remembered that these terms are suggested for the description of the colors of drugs and chemicals. If the terms, white and ish-whites, are preferred in another trade or industry, they can be recommended for use in that trade by the Inter-Society Color Council without doing any harm to the system of color names recommended for use in our profession. Please write me your acceptance or criticisms of the proposed set of color names listed above. Upon the acceptance of a set of names, a letter ballot will be sent to the members so that the names may be used officially with as little delay as possible.

COLOR APTITUDE TEST We have received copy of a preliminary report on the Preparation and Standardization of a Color Aptitude Test, which was prepared by Dr. Dimmick, chairman of the Problems Committee. The problem was brought to the I.-S. C. C. at its 1940 annual meeting by the request of one of its members, Dr. LeGrand H. Hardy, that the Council assemble the information that would enable him to advise a client corporation how to select and evaluate workers in an industry which requires accurate color matching and discrimination. After discussion, the question was referred to the Problems Committee, which designated a sub-committee to compile information and devise a series of tests that will satisfy the original problem and will be applicable to similar problems in other industries and general practice. The sub-committee consists of: Forrest L. Dimmick (APA), Professor of Psychology, Hobart College and Carl E. Foss (ASTM), Interchemical Corporation, co-chairmen; I. A. Balinkin, Color Consultant for Cambridge Tile Mfg. Co.; C. Z. Draves, General Dyestuff Corporation and President of the AATCC; W. C. Granville, Interchemical Corporation; LeGrand H. Hardy, American Representative, International Congress of Ophthalmology; Harry Helson (APA), Professor of Psychology, Bryn Mawr College; Elsie Murray (APA), research worker in color blindness at Cornell University; J. L. Parsons (TAPPI), Hammermill Paper Co.; and A. H. Taylor (IES), General Electric Co. It is believed by some that existing tests do not fully meet all requirements. It is required to determine the norms and diagnose deviations in color sensitivity, and to assist

prognosis of educability for the various specific tasks of color discrimination encountered in industry. Preliminary discussion has emphasized the need not only for tests for the forms of color blindness and degree of anomaly among individuals of "normal" vision, but also for color discrimination capacity. The sub-committee has received data or proposals relative to a test which may evolve from experimental work of Dr. Murray, to plans of Mr. Loveland and Dr. Judd for the use of disk mixtures for the tests; and it has considered the experiments reported by Pierce in his book, "Testing Color Workers." But it is thought that it will be necessary to work out a new series of tests; and to this end the assistance of Mr. Foss and Dr. Draves has been enlisted. We have full confidence that the distinguished sub-committee will solve the present problem with neatness and dispatch.

COURSES ON

COLOR IN

INDUSTRY

We have received announcement of two summer courses on Color and Industrial Design to be given at Boothbay Studios, Boothbay Harbor, Maine, July 22 to August 3. The course on Color in Industry is by Faber Birren, our well-known member; that on Design in Industry is by Harold Van Doren, Industrial Designer. The content of Mr. Birren's color course for the first week is indicated by the subjects: Color and its Role in Modern Life; How the Eye Sees more than Any Camera; The Scientific and Human Side of Color; the Psychology of Color; Analyzing the Color Scheme. The second-week subjects are: How Many Colors Are There; The Physical Influences of Color; The Emotional Powers of Color; Functional Color Applications; Planning Original Color Effects. Anyone interested should consult Mr. Frank Leonard Allen, Director, 27 Fairmount Street, Brookline, Mass.

ARTISTS'

OIL PIGMENTS

Following a note on this subject in a recent News Letter, Dr. H. P. Gage of Corning Glass Works wrote to the Federal Works Agency for Massachusetts and received replies from Mr. F. W. Sterner, Technical Supervisor of the Paint Testing and Research Laboratory, 881 Commonwealth Avenue, Boston, and from Mr. F. W. Reynolds of the Division of Trade Standards, National Bureau of Standards, Washington, D. C. Mr. Sterner's letter included a copy of the Proposed Commercial Standard for Artists' Oil Paints. Dr. Gage suggests that the proposed standards would be of great interest to artists, and a probable subject of interest to the Color Council. We take the liberty of quoting Mr. Sterner's letter, dated April 9, which ends with a statement of appreciation of comments on the proposals; and we assume that the comments of other Council members will be welcomed. We assume also that copies of the proposed standards may be obtained by writing to one of the gentlemen named. Mr. Sterner's letter follows: "I am enclosing a copy of the Proposed Commercial Standard for Artists' Oil Paints. The proposed Standard is mostly a standardization of materials and nomenclature rather than that of color itself. We regret to state that to date we have not been able to include color differences although it would be of great help. The great variations in the natural and artificial iron oxides are outstanding examples of pigments in need of a standard. The so-called cadmium light, medium and deep are rather vague attempts to describe different color values which are to date essentially subjective and vary with each manufacturer. The result is that if an artist runs out of one of these paints he must purchase the same material from the same company or else run a likely chance of getting a paint of an entirely different tone. The standardization of color would be of universal help in eliminating this problem. We would greatly appreciate any comments you can give relative to this proposed standard."

LIVING We have received announcement of a 330-page book of this title by
 LIGHT E. Newton Harvey, outstanding authority on animal light. The scope
 of the book is indicated by the chapters, which are: Cold Light;
 Types of Luminescence; Light-producing Organisms; Chemistry of
 Nature of Animal Light. The book is published by Princeton University Press,
 Princeton, N. J.

DEADLINE We wish to remind potential contributors, particularly the secre-
 taries of local color groups, that news items must be in our hands
 not later than the tenth day of the month in which the current
 News Letter is distributed. This is because the editors are distributed over three
 points as far apart at the extremes as Washington and New York; and because corrected
 copy is returned to Wilmington before final copy is sent to Washington for mimeo-
 graphing and mailing. The editors will greatly appreciate your help in expediting
 the submission of items of interest to readers before the deadline date, which for
 the next issue is July 10. Please address I. H. Godlove, Editor, Technical
 Laboratory, E. I. duPont de Nemours & Co., Box 386, Wilmington, Del.

NEWS AND There has been some discussion in the past among the editors and
 Executive Committee and other members concerning the most felicitous
 SPECIAL proportions of purely "news" items and "special features"; and
 suggestions from our readers have been invited. For your informa-
 tion, we note here the distribution roughly computed for the year
 FEATURES 1939. The classes included: News items, 20.0; color names, 3.0;
 questions and answers, 0.7; other special features, 1.2; abstracts,
 6.5; and bibliography, 5.5; a total of slightly less than 37 single-spaced pages.

INDEX OF Preparatory to a review of the status of our bibliography of
 articles of color interest, and the laying of plans for a more
 BIBLIOGRAPHY adequate compilation, we have prepared an author index of the items
 which have been listed in previous numbers. After each name the
 first number gives the year of the publication; the last number,
 the serial number of the News Letter in which the item appeared. We wish to confess
 that to date our method of compilation has been rather "hit or miss", without too
 much coordination between the three or four contributors or systematic check of all
 the journals which may be expected to contain articles of color interest. On the
 other hand, we wish to report that we have some plans for introducing some order
 into this chaos. Meanwhile, we hope that the index of authors will stimulate you to
 note and supply missing references. Please let us know if you or your friends or
 co-workers, or other authorities, have been inadvertently slighted. The index
 includes reviews and abstracts of important articles or books not listed in the brief
 title reference compilations at the end of the issues; but it is to be noted that
 the issues indexed include only numbers 16 (Jan., 1937) to 28 (March, 1940),
 inclusive.

Allen & Guilford 1936; 16
 de Almeida 1939; 26, 26
 Anon. 1938; 21
 Anon. 1939; 24, 27, 27

Army (& Taub) 1936; 16
 Ashley 1939; 26
 Assoc. Amer. RR. 1938; 24, 24
 Balinkin 1939; 26

- Barkas 1939; 27
Barnes 1939; 24
Bartley 1938; 25
Birren 1939; 28

Birren 1940; 28
Boring 1939; 26
Bowditch & Null 1938; 24
Bradley 1938; 24

Breckenridge & Schaub 1939; 27
Bresch 1938; 24
British Color Council 1938; 25
Bugyi 1938; 24

Bureau of Standards staff 1939;
25, 25, 26
Carr 1935; 16
Collins 1937; 25

Collins 1939; 25, 26
Colton 1939; 27
Corlette, Youmans, Frank &
Corlette 1938; 25

Coughlin 1939; 25
Crozier, Wolf & Zerrahn-Wolf
1938; 24
Dates 1938; 24

Deeter 1938; 24, 25
Deutsch 1937; 24
Dimmick 1938; 22, 24
Dimmick 1939; 26

Dimmick & Hubbard 1939; 25, 26
Dresler 1938; 24, 25
Eldridge-Green 1939; 26
Ferree & Rand 1938; 25

Flinckart 1937; 25
Fonda 1938; 25
Foote 1939; 25, 27
Foss 1939; 25

Gardner & Sward 1939; 28
Garnsey 1940; 28
Gaydon 1938; 24
Geffcken 1939; 26

Gibson 1937; 18, 22
Gibson & Haupt 1939; 26, 26
Gibson, Haupt & Keegan 1939; 27
Gibson, Teele & Keegan 1939; 26

Godlove 1935; 16, 25, 27
Godlove 1939; 26
Graff 1939; 28
Grant 1938; 25

Graves 1939; 25
Guilford 1939; 25
Guilford et al 1931-3; 16; see
also Allen & Guilford

Hamblin & Mangelsdorff 1938; 24
Hansen 1938; 24, 25
Haupt 1938; 24
Hecht & Mintz 1939; 27

Hecht, Peskin & Patt 1938; 24
Hecht, Schlaer, Smith, Haig
& Peskin 1938; 27
Helson 1938; 24

Helson 1939; 26
Helson & Jeffers 1940; 28
Hibben 1938; 24
Howell 1938; 24

Hunter & Judd 1939; 25
Inman 1938; 24
Inui & Kido 1938; 25
Jenkins & Brown 1938; 24

Johnson 1939; 27
Judd 1933; 22
Judd 1936; 21
Judd 1939; 26, 26, 27, 27, 27

Judd 1940; 28
Judd & Kelly 1938; 21
Karwoski & Odbert 1938; 24
Kelly 1938; 23

Kido, Ihara & Inui 1938; 27
Kraik 1938; 25
Krefft 1938; 25
Lancaster 1938; 25

Lang 1940; 27
Langstroth 1939; 27
Langstroth & McRae 1938; 25
Laval 1938; 25

Lewinski 1938; 27
Lewis 1936; 16
Lindberg 1938; 25
Luckiesh et al 1938; 24

Luckiesh & Moss 1939; 27

MacAdam 1938; 24

MacAdam 1939; 26

Mandeville 1936; 16

Mandeville 1937; 18

Mast 1938; 25

Meacham 1938; 24

Mischung 1938; 27

Muller 1939; 26

Murray 1939; 24

Murray & Spencer 1939; 26

Munsell 1940; 27

Nakayama, Furu & Tomaru 1938; 27

National Bureau of Standards

1939; 25, 25, 26

Nelson 1938; 24

Newhall 1938; 26

Nickerson 1939; 26

Olsen 1939; 27

Ostwald 1937; 18, 24, 25

Pelton 1938; 24

Perry 1938; 24

Pierce 1938; 24

Priest & Brickwedde 1938; 25

Rahr 1940; 28

Rayleigh 1938; 24

Razek 1938; 24

Richter 1938; 24, 25

Ringbom 1939; 26

Ringbom & Sundman 1939; 26

Rompe & Thouret 1938; 25

Rosemann 1938; 24; 27

Rosenberg 1938; 27

Schober 1937; 24

Schofield 1939; 26

Schuck & Miller 1938; 25

Sears 1939; 26

Sinden 1938; 25

Slauer 1938; 23

Smith, F. C. 1938; 24

Smith, T. 1938; 25

Sniakin 1937; 24

Swank & Mellon 1937; 21

Tansley 1939; 27

Tintometer, Ltd. 1939; 28

Tongren 1938; 24

Tupholme 1938; 24

U. S. Dept. of Agriculture 1940; 28

Van Alphen 1939; 27

Van den Akker 1939; 25, 27

Verne 1938; 25

Vollmer 1938; 24

Weigert & Morton 1939; 27

White 1938; 24

Wright 1939; 26, 26

Yamauti 1937; 25

Yule 1938; 24

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