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INTER-SOCIETY COLOR COUNCIL

NEWS LETTER No. 77

JULY 1948

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For matters of business,
Address the Circulation Manager

Subscription price to non-members:
\$4.00 annually

PHILADELPHIA- WILMINGTON COLOR GROUP

Through the initiative of Professor Harry Helson of Bryn Mawr College, a meeting was held at Bryn Mawr, Penna., on May 4, 1948, to organize a group for discussion of color problems. A sincere interest in the formation of this group was demonstrated by wide representation and active discussion. The group intends to sponsor lectures and general meetings on a wide variety of color topics of interest to its members. A steering committee was selected to represent the various industries and other interests in planning the program for the group. According to Dr. Kelton, first secretary of the group, who has kindly favored us with an account of the meetings, this committee is as follows:

- | | |
|----------------------------------|---------------|
| Mr. R. E. Pike, Chairman | - Finishes |
| Dr. S. C. Kelton, Jr., Secretary | - Plastics |
| Dr. C. K. Black | - Dyestuffs |
| Mr. L. G. Glasser | - Instruments |
| Mr. B. R. Koenig | - Textiles |
| Mr. M. R. Pesce | - Photometry |
| Mrs. H. D. Taylor | - Consultant |
| Mr. L. M. Whiting | - Printing |

Four general topics were listed for the meetings planned for the ensuing year:

- I. Color Measurement, Specification and Classification;
- II. Color Application, Uses and Systems;
- III. Colorants, Materials and Methods;
- IV. Psychology and Physiology of Color.

The first scientific meeting of the Group was held at Bryn Mawr on June 8, 1948, with an attendance of over seventy-five persons, including several persons very active in I.S.C.C. work. Miss Dorothy Nickerson, Council secretary, spoke briefly on the history and functions of the Inter-Society Color Council, emphasizing the desire of the Council to encourage local activity on color topics and to coordinate color work in the various scientific societies and industries.

Professor Helson discussed Color Psychology, with a brief review of the field followed by a report of recent experiments. This method was ideally suited to the audience, according to Secretary Kelton, because of the widely varying interests of the members. Color perception or apprehension was shown to be a labile interacting combination of light source, object, surround, eye and brain. The inadequacy of hue, brightness and saturation and the necessity for pronouncedness or whiteness was mentioned. The meaning of constancy in color perception was then discussed and illustrated briefly with emphasis on the changes which occur under various background conditions and strong chromatic illumination. Practical applications of color psychology were cited and illustrated.

NEW INDIVIDUAL MEMBERS

We are glad to welcome to individual membership the following persons whose applications were approved by the Executive Committee on June 26, 1948:

Sarah Grand, Executive Secretary of the Decorators' Institute, New York City, whose problems of particular interest are psychological uses of color for homes, hotels and clubs;

Elschen Hood, The Spool Cotton Co., New York City, who is interested in standardization of colors for commercial usages and the practical application of color to merchandising problems; member of the Textile Color Card Association of the U.S., Inc.;

R. G. Horner, Ilford Ltd., Essex, England, new secretary of the Physical Society Colour Group and secretary of the group which recently published a 56-page Report on Colour Terminology; member of the Physical Society, Institute of Physics, Royal Photographic Society and Optical Society of America;

Paul M. Koons, The National Cash Register Co., Dayton, Ohio, who is particularly interested in problems of eye appeal, color and speed accuracy on cash registers and accounting machines, and the designation and control of color;

Lever Brothers Co., Attn. R. J. Houle, Chief Chemist, Hammond, Indiana, whose work deals principally with soap and shortening and all raw and packaging materials associated with the business; member of American Oil Chemists' Society, American Chemical Society and Institute of Food Technology;

Ralph Edwin Pike, E. I. du Pont de Nemours & Co., Philadelphia, Pa., interested in colorants, color measurement and control, automotive color selection, methods for filing and classification and training of color shaders; member of American Chemical Society; active in formation of new Philadelphia-Wilmington Color Group;

G. Plochere, Los Angeles, California ("G." is for Gladys or for Gustave), color consultants, interested in color systems since 1915, publishers of the Plochere Color System (1948) which takes the place of their former publication, Plochere Color Guides;

Charles A. Wilmot, Baton Rouge, Louisiana, interested in the measurement of and specifications for gasoline colors and colorants; member of American Chemical Society and American Assoc. Advancement of Science.

COMMITTEE APPOINTMENTS

At a recent meeting of the Executive Committee the appointments of Proctor Thomson for ACCS and of C. E. Leberknight for AmCerSoc to the Subcommittee on Problem 7, Color Specifications, were approved.

A COLOR MARATHON BY
FOUR I-S.C.C. MEMBERS
INTERSPERSED WITH
MUCH APPLAUSE

This title is not due to the editors, but is that with which Albert H. King, Chairman of the California Color Society, used at the head of his account of the recent meeting of the C.C.C. with the I.S.C.C. held at the Art Center School in Los Angeles. This account

was kindly sent to us by Mr. King with a letter dated June 19. Following is his account of the meeting.

Climaxing a three-day "Significant Color" exhibition of color originating on the West Coast and the C.C.S. regular monthly program ("Color Lithography for Artists" by Lynton Kistler) and a special program of "Abstract Films" by Oskar Fischinger, John Whitney (Guggenheim Fellowship Award, abstract films) and his brother James Whitney, the Art Center School, a sustaining member of the California Color Society, sponsored a twelve-hour color session in the School Auditorium on Monday June 24th. With Dorothy Nickerson, I.S.C.C. secretary; Carl E. Foss, prominent member; Isay Balinkin, vice-chairman; and Ralph Evans, until recently chairman of the I-S.C.C., cooperating, the day will be one long remembered and will mark a high point in the Color Consciousness of all those who had the good fortune to be present.

At 9:00 A.M. the Auditorium was opened, its walls displaying the "Significant Color" Exhibition held over from the previous week and the stage filled with Dr. Balinkin's apparatus and gadgets; it soon filled with students and instructors from the school's Art Department, California Color Society members, and instructors and students from various other art schools and universities. At 10:00 A.M. the lights illuminating the exhibition were turned off, and after a brief introduction by the California Color Society Chairman, the capacity audience was held spellbound by Dr. Balinkin till 11:30 with his demonstration of "Color Phenomena," after which there was a fifteen-minute period devoted to questions from the audience and the inimitable Isay Balinkin answers.

At noon the exhibition lights were again turned on and Balinkin, Carl Foss and volunteer assistants put the stage in order for the afternoon session. When Miss Nickerson arrived from the local Department of Agriculture offices at 12:30 and checked over her demonstration material, the question of lunch came up. One glance at the Auditorium already filled with people and another at the clock confirmed the fact that with the afternoon session scheduled for 1:00 P.M., there remained 15 minutes for lunch --- the closest food, the school cafeteria -- sold out --- they would make a sandwich --- I cannot quite recall what it was (wrote Mr. King) but if memory did not fail him it was mostly air --- but, fortunately California Air.

At 1:00 P.M. the exhibition lights were turned off and a capacity crowd consisting primarily of A.C.S. Photography Department faculty and students, California Color Society members, instructors and students from other local schools of photography and their guests heard a paper on the "Spectral Characteristics of Light Sources" by Norman Macbeth read by co-author Dorothy Nickerson. After this the latter demonstrated the effect of various light sources with differing spectral characteristics on the appearance of a number of dyed fabrics and pigment-coated paper swatches, and with the aid of a Macbeth variable-color-temperature viewing device exhibited the modifying effect of the spectral character of the light source on the appearance of some excellent Kodachrome transparencies. This talk and demonstration was "right down the photographers' alley" and much appreciated.

At 1:45 P.M. Dr. Balinkin repeated for this new audience his previous demonstration lecture with all the spontaneity and wit that make so unforgettable and lucid the

various aspects of his subject. After a ten-minute intermission, at 3:00 P.M. Carl Foss presented his excellent graphically illustrated lecture on the "Basic Principles of Color Systems," climaxed by his "yellow plus a blue can make green, while yellow plus another blue can make red" demonstration. At 4:30 the exhibition lights were again turned on and the audience, which had expressed its appreciation with much applause, filed out leaving groups talking over the afternoon's stimulating program.

Did those indefatigable souls Nickerson, Foss and Balinkin dash out finally to eat? It must have been real California Air in those sandwiches, for the answer is "no." The first two had to leave by train in the morning, so supervised packing of their material; the last named had accepted an invitation to give his demonstration before the Southern California chapter of the American Ceramic Society, so after ten cases were packed, Miss Nickerson at 6:10 finally mentioned food. Forty minutes later, still nursing the last mouthful of a half-consumed dinner, the California Color Society Chairman King was greeted by a large group of people waiting at the Auditorium entrance; and soon it was crowded with groups talking animatedly about the program and viewing the exhibit.

At 8:00 P.M., after a short introductory statement by the Chairman on the topic of abstract films, a twenty-minute program on that subject was presented which consisted of "Allegretto" in black and white, and Oskar Fischinger's latest color film "Motion Painting." After a five-minute intermission, at 9:00, Ralph M. Evans presented his admirably organized, lucid and informative, illustrated lecture "Seeing Light and Color." The lecturer graciously answered a number of questions; and at 10:50, after a brief statement, Chairman King adjourned the meeting. At 11:30 P.M. it was necessary to turn off the auditorium lights because of the many people still reluctant to leave. So ended "California's most colorful day, thanks to the generous cooperation of four visiting members of the I-S.C.C."

CALIFORNIA STORIES

So went Mr. King's account of the activities at Art Center School. Another of our California friends, Mr. Herbert B. Palmer, in a recent letter has sent us accounts of other aspects of the California activities. He writes: "Miss Nickerson expressed the fear that all this would make the next issue (of the News Letter) a 'California Issue,' and we trust that her fears are well founded." So it looks as we go to press. Such being the case, you will pardon our momentarily broadening our subject from California Color to California. So we give you two of our favorite California stories.

First, recalling Mr. King's reference to California air, we go to Death Valley, where the air is said to be dry. A tourist said to the native: "Looks a lot like rain, doesn't it?" "Yeah," was the reply, "I'm praying for rain. But not for myself; it's for the kids. I saw rain once."

Then there is the one concerning an Eastern rivalry. The Floridian picked up a California orange and said: "Is this the biggest melon you can grow out here?" The Californian's retort: "Don't you know a grape when you see one?"

SIGNIFICANT COLOR

Since we are on the subject of the May activities in California, we shall depart from Mr. Palmer's chronological order of report and reproduce first his account of The First Annual Exhibition and Conference on Significant Color. The conferences, he said, were a big success and attended by serious audiences. The exhibits were attractive and most certainly

colorful. "The California Color Society feels that all this is not only due to its own vague efforts but to the most kind and friendly cooperation of the Society of Motion Picture Engineers and the members of the party of delegates sent by the Inter-Society Color Council. We wish to thank (the delegates named in Mr. King's account) for their grand talks, their fine demonstrations and the pleasure we have had renewing our acquaintanceships with some swell people."

"After listening to Miss Nickerson no one in Los Angeles will ever again be happy with living under a single illumination. Dr. Balinkin made us drunk with laughter and swollen with ideas on physics." Carl Foss left us with visions of color systems as atomic structures and Ralph Evans convinced us that it was all an illusion. But now that the excitement of the May meetings has abated we still feel so pleased by our first big convention in California that we want the rest of the Council to know of our doings."

In addition to the SMPE talks by the ISCC delegates, specifically:

Macbeth and Nickerson: "Characteristics of Light Sources"
 Isay Balinkin: "Demonstration of Color Principles"
 Carl E. Foss: "Basic Principles of Color System"
 Ralph M. Evans: "An Introduction to Color,"

which were repeated under the auspices of the California Color Society, members and guests were able to see several experimental abstract films in color shown by Messrs. Fischinger, John and James Whitney, as mentioned in the King account.

The Editor regrets that lack of sufficient space causes the following condensation of Mr. Palmer's more pleasing format in listing the "Significant Color" exhibitors from May 19 through May 24 in the exhibitions in the Auditorium and Gallery of the Art Center School, Los Angeles. These are the contributions to Color Research and Application by various individuals and companies on the Pacific Coast.

COLOR MEDIA. Photography. Fred Bond, Kodachrome and Ektachrome (books and transparencies); F. Clyde Swale, abstract color prints, photograms and metallic toners; William Beal and Russel C. Morrill, Solarized experimental color photographs (transp.); R. Patterson, experimental abstract color prints; James Fitzsimmons, Curtis wash-off dyes, prints in abstract color; Dr. W. Gaspar, exhibition of Gasparcolor prints.

Painting. Hilaire Hiler, color charts and paintings showing new color concepts; S. McDonald Wright, Synchromist paintings.

Plastics. Jan DeSwart, colored, moulded and carved plastic forms, abstract and functional.

Graphic Arts. Lynton Kistler, lithographic stones and prints in many colors; also lecture demonstration.

Motion-picture Sets. Ernest Fegte, color transparencies, etc., of Academy Award winning sets.

Architecture and Interiors. William Manker, color notation and fabrics "Pacesetter House" House Beautiful; Conde Nast Publications (Miss Frederica Fox, Western repr.), reproductions of Western Homes and their use of color, from House and Garden; Robert Tyler Lee, fabric and wallpaper designs; Walter Dorwin Teague and C. S. Myers, color application to a redesign of Richfield Gas Stations.

COLOR TAXONOMY. Mr. and Mrs. G. Plochere, the new 1948 Plochere Color Guide; Hilaire Hiler, color wheel and charts, Hiler System; Martin-Senour Co., Nu-Hue Colors; Spencer Stuart, Western color preferences, based on Pacific Coast sales; Albert King, six colors with unique disk-colorimetric relationship with spectrophotometric data and ICI tri-stimulus values; also Maxwell disk demonstration.

COLORANTS AND MATERIALS. Lucien Foinet, pigments used for oil, water-color and fresco, geographic source and permanency; Martin-Senour Co., commercial pigments.

"Our Society," continues Mr. Palmer, "has decided to make the annual exhibition a permanent institution and we hope to report again next May on the extent and scope of our show. We shall be glad to transmit any correspondence to our exhibitors and we trust that the members of the ISCC will feel free to inquire for more information about any of the exhibits or our plans."

"With all the color wheels and swatches arrayed in spectral splendor, with the fabrics and pictures, the pigments and magazines, the lithographs and plastics we know that most people who saw our show - and there must have been at least 2000 or more - must admit that color is ubiquitous, if nothing else."

MORE ON CALIFORNIA MEETINGS The following accounts of previously unreported meetings of the California Color Society also came from Herbert B. Palmer, Executive Correspondent.

Late Winter Meetings. Jack Martin Smith, an art director from Metro Goldwyn Mayer Studios, addressed the Society on film uses of color. The art director, he pointed out, was the man who concerned himself with that part of the motion picture which is out of focus. He is at once a color consultant and an expert on style and taste. Of course he must know how to translate colors into light and dark values and still keep the actors dressed in emotionally pleasing colors and surroundings. In color film many color companies supply color experts with each picture, but the art director still has a major share of the responsibility. Firms like Technicolor and Cinecolor seldom supply sets, just technical help.

The relative value of color is very important for scenes are shot under one type of illuminant and are often projected by another. In addition most scenes are shot under bright lighting conditions and projected in a dark room. Thus much of the color problems at once become dependent on the art director being able to visualize the final product. Studios have a color-control department and coordinate the opinions of the art department, wardrobe, producers and directors. Some of the more difficult problems in color are: reflection control, giving objects an aged appearance, and authenticity problems

Most of the large studios have a standard nomenclature of their own in which they identify color by material and paint swatches. No universal standardization system exists. Nor is their system scientific; rather it is operational and deals with the colors that have been successfully used before. While this limits the population of colors it guarantees repeated successful projection. The industry is too new in color; and systems like the I.C.I., Munsell, Ostwald, Nu-Hue, etc., are unheard of by art directors. Of course they are better understood by technical photographic departments, who work with more standardized materials, namely the film and physics. ("Empirical systems, the studios will discover, are self-destructive and inhibiting, both technically and artistically." - H.P.) One rule of thumb always used is to keep vertical surfaces "lighter" than horizontal surfaces (or the floor darker).

Mr. Jack Martin Smith did work on such films as: Holiday in Mexico, Summer Holiday, Meet Me in St. Louis, Ziegfield Follies, etc.

Following this interesting January meeting, Mr. Lorser Feitelson, artist and lecturer at the Art Center School, Los Angeles, spoke in February to the California Color Society about the significance of color to a painter. While most painters resent classification, Mr. Feitelson "speaks like an Expressionist and paints like a Purist," according to Mr. Palmer. His work is constantly being shown and thus he is not reminiscing when he speaks of the metier paint. "Pure color," color in its full brilliance or intensity, he claims, is in a minority in the work of the Moderns. Most of the colors used by the moderns are fields for the single pure hue. Feitelson illustrated all his comments with reproductions in color. The full pure color is like a prima donna. It plays the role at the climax, or high point in a painting. Some artists try to achieve shock or some other emotional purpose. Few artists are concerned with harmony.

To take a cold color and surround a "rich" color, he says, will produce excitement. This further illustrates the idea of one color being a field for another, or perhaps as the psychologists say, a frame of reference. Minority colors are seen first. Of this he is sure; and his illustrations in the works of the Moderns were convincing. The Moderns, he claims, are conscious of the "field" theory. They stack a painting emotionally in order to get a "punch" color. The ambiguous image is part of the effort toward color domination. It is his belief that vermilion is a great favorite amongst the public and that he can sooner sell a painting with vermilion in it than with any other color.

A painting is not made with the intelligence, thus terminology and color theories are of little use to the artist except as he can correlate relative values and assimilate theory with emotional performance. Feelings and emotions can advance or progress; to the artist they are not changing because of his intellectual efforts but rather from unpredictable experience. ("If the artists knew that experience is unscientific they would not seek it or recommend it, but destroy it in preference for critical judgement." -H.P.)

Spring Meetings. The March meeting was addressed by Mr. Spencer Stuart of the Martin-Senour Company, developers of the Nu-Hue Color System. Information on this system was given to ISCC members in News Letter No. 66 (Sept. 1946), and brief mention of Mr. Stuart's talk was made in News Letter No. 75. However, the "color bar" has been installed in two Los Angeles department stores and "prescription color" is beginning to catch on. Mr. Stuart, according to our correspondent, Herbert Palmer, "rightly called the public illiterate on color" and hoped that the Nu-Hue system would help improve their knowledge on this subject. He pointed out that Frederic H. Rahr was making a survey of color usage but did not include the West Coast. ("Our Society," says Mr. Palmer, "would like to know more about the survey and perhaps would cooperate to include the West.") One of the most interesting phases of the Stuart talk was his classification of colors into those that (1) sell themselves and (2) those that sell other merchandise. This makes nomenclature and color systems more palatable to the business man. He understands the why of all the attempt at standardization.

The May meeting of the Society, addressed by Dr. C. L. Graham of Eastman Kodak Company assisted by Mr. Vaughn Shaner, was briefly mentioned in News Letter No. 76. This talk was a technical explanation of the quantitative and numerical systems of classification of color. Dr. Graham put special emphasis on the I.C.I. system,

which many members had requested. The meeting was conducted jointly with the Technical Section of the Photographic Society of America and the special efforts of Mr. Frank Wilbar of that society and the Fred Archer School of Photography.

It was one of the most ambitious talks the society has had in a long time in terms of the range of subject covered in one evening. Dr. Graham presented an outline of the psychology, physics and mathematics of a color system. He explained the history of the I.C.I. system, how it works and its scientific origin. The talk was lucid, entertaining, succinct and informative. "Only Max Planck would have been bored," Herbert Palmer speaking, "Hayakawa would have praised the schism from 'two-valued orientation,' but P. W. Bridgman would have insisted on a more 'operational' approach. Some day we hope to get Dr. Graham back again for a sequel talk on Who Uses I.C.I., and Why."

May was Convention month for the California Color Society and the speaker for that month was Lynton Kistler, lithographer, who for many years has been printing lithographic stones for artists. He explained the entire printing process and the history of lithography, with special emphasis on color printing. Mr. Kistler has as special exhibit several stones that he used for the printing of a series of lithographs by Jean Charlot.

The Society was especially impressed by the difficulty that a lithographer must meet in acquiring the information to make near-perfect prints. Many printers in this field claim that the printing methods are family secrets and are reluctant to pass on the information. The big expense to the artist who uses this medium is that of the transportation of stones. The stones make the best impressions yet it is difficult to visualize even some of our more robust artists, like Diego Rivera, hauling small quarries about the countryside. Unlike other printing techniques registry is still the main source of difficulty in color printing. The choice of color is not made in any scientific manner, but purely emotionally from available pigments. The printer must be faithful to the artist's wishes.

(Thus end the accounts transmitted to us by our friends of the California Color Society. They are long but to your Editor they seem very interesting throughout; and he cannot help but feel that we are most fortunate in having men of the character of Herbert B. Palmer and Albert King as reporters and interpreters of the activities of our only too distant color-cousins.)

PRINTING-INK MAKERS APPOINT DELEGATES

From David H. Sloane, secretary of the National Association of Printing Ink Makers, the Council is advised that the following list of delegates was appointed on

April 19th to represent the association:

C. R. Conquergood, Chairman, Canada Printing Ink Co.; Miss Dorothy Dolton, Interchemical Corporation; Miss Bettye Stout, Sun Chemical Corporation and G. L. Erikson, Braden-Sutphin Co., Cleveland.

We are glad to welcome these four persons as members of the new delegation. We are interested to note that three of them have been members of the Council for some years.

AMERICAN CERAMIC SOCIETY DELEGATES

The new president of the American Ceramic Society, Professor John W. Whittemore of the Virginia Polytechnic Institute, announced on May 19 that in appointing

delegates to the I-S.C.C. he would follow the plan of his predecessor, Mr. John D. Sullivan, and make appointments on a rotating basis so that the term of three delegates would expire each year and three new delegates could be appointed. Following is the new list of delegates, the starred name in each group indicating a voting delegate:

<u>To 1949</u>	<u>To 1950</u>	<u>To 1951</u>
I. A. Balinkin*	R. S. Hunter*	Theodore Lenchner*
N. J. Kreidl	Don Schreckengost	G. H. Spencer-Strong
Edward Schramm	W. A. Weyl	C. E. Leberknight

In addition, Kenneth Smith, editor for the Design Division of the American Ceramic Society Bulletin, has been appointed a delegate to serve as long as the editing function lasts.

PHYSICAL SOCIETY On Friday, March 19, the 8th annual meeting of the Group
COLOUR GROUP was held at the Imperial College of Science and Industry. For 1947 the Group reported 214 members, a little less than half of these being members of groups or firms other than the Physical Society. Among other activities, the Report on Colour Terminology has been prepared and published, and a C.I.E. (I.C.I.) Chromaticity Chart has been made available. Officers for 1948-49 are: Chairman, Mr. J. G. Holmes; secretary, Mr. R. G. Horner; committee, Messrs. Boltz, Duncan, Jesty, Morris, Strange and Thomson. The meeting was addressed by the chairman on The Aims and Activities of the Colour Group. The general session was followed by the 38th science meeting in which Mr. J. G. Holmes discussed The Physical Structure of Coloured Glass.

For a meeting on April 28th, the subject scheduled for discussion was The Report on Colour Terminology to be presented by Dr. R. K. Schofield and members of his sub-committee. Following tea Dr. W. D. Wright expected to outline British proposals on colour terminology being submitted to the C.I.E. (I.C.I.) meeting in Paris this July.

The I-S.C.C. secretary has received from R. G. Horner, new secretary of the Colour Group, a very cordial letter indicating that the close contact between the two organizations, maintained to date through Dr. W. D. Wright, will be continued. Mr. Horner indicated that some copies of the Colour Terminology Report would be forwarded to us, and these have since been received and distributed. Later it will be reviewed in the News Letter along with advice as to where and how additional copies may be obtained.

**ORIGINS
OF COLOR**

Color too, to paint his body
 Place within his hand
 That he glisten, bright and ruddy
 In the Spirit-Land.

- from Schiller's "Nadwessier's Todtenlied"

**SANTA MONICA
MEETING
OF S.M.P.E.**

The Society of Motion Picture Engineers held its 63rd semi-annual convention at Santa Monica, California May 17 - 21. The meeting opened on Monday with a general session. On Tuesday evening, with L. E. Clark as chairman and E. H.

Reichard as vice-chairman, there was held a symposium on color photography. There were two papers from Eastman Kodak: Principles and Practice of Three-Color

Subtractive Photography by W. T. Hanson, Jr. and F. Richey, and a very vivid demonstration of masking, A Technique for Improving the Quality of Color Reproductions by Thomas H. Miller; these were followed by three papers from Ansco: A Laboratory for Development Work on Color Motion Pictures by Harold C. Harsh and Karl Schadlich, Processing Control Procedures for Ansco Color Film by James E. Bates and I. V. Runyan, and The Analysis of Developers and Bleach for Ansco Color Reversible Film by A. H. Brunner, Jr., P. B. Means, Jr. and R. H. Zappert.

The color meetings on Thursday were announced as joint meetings with the Inter-Society Color Council constituting a symposium on color by members of the S.M.P.E. and the I-S.C.C. For the afternoon session the chairman was E. I. Sponable, executive vice-president of the S.M.P.E.; and vice-chairman was A. M. Gundelfinger of the S.M.P.E. delegates. Sessions opened or closed with a 35 mm. motion-picture short. For the evening session, held at the Academy Award Theater, C. R. Keith, editorial vice-president of the S.M.P.E., was chairman. At both sessions there was a brief introduction to the Inter-Society Color Council and the manner in which it functions in relation to each of its member-bodies: not at all as a competing society, but rather as a Council in which each member association may play as active a part as its own color interests and the opinions of its appointed delegates may dictate. From the interest aroused at this meeting, it seems quite probable that S.M.P.E. delegates will in future play an increasingly active part in Council affairs. This is just what was hoped when several Council delegates and members from other societies went out to the West Coast to take part in this meeting.

It was pointed out that the papers and demonstrations were given by representatives of several Council member-bodies. The first paper, Spectral Characteristics of Light Sources, was appropriately prepared by Norman Macbeth, chairman of the I.E.S. delegates, and Dorothy Nickerson, O.S.A. delegate. Isay Balinkin, former chairman of delegates for the American Ceramic Society, presented his demonstration on Color Phenomena. It was so well received that he had to repeat it four times while in Los Angeles; - and it takes at least four hours to set it up each time! Carl E. Foss, delegate from the Optical Society of America, demonstrated Basic Principles of Color Systems; and J. P. Guilford, representing the American Psychological Association, gave a paper on System in Color Preferences. At the evening session Ralph M. Evans, past Council chairman and chairman of the S.M.P.E. delegates, gave an illustrated lecture, Seeing Light and Color. The Academy Award Theater is very beautiful and a most appropriate place for Mr. Evans' lecture. As usual, he had a most appreciative audience.

During the sessions, the S.M.P.E. Color Committee held a meeting, under the chairmanship of Dr. Herman Duerr, that should lead to practical answers to a number of immediate problems. Altogether, the meeting seemed like a most successful one. Certainly, members of the Council who went out to California for it were very glad to meet the West Coast group, and felt well repaid in seeing and hearing at first hand some of the color problems involved in this highly technical field.

HANDS ACROSS THE CONTINENT

There were four persons active in Council affairs who went to the West Coast to take part in the I-S.C.C.-sponsored sessions of the S.M.P.E. meeting at Santa Monica: Isay Balinkin, Ralph M. Evans, Carl E. Foss and Dorothy Nickerson. How so much of color interest could be packed into the ten days we spent in California is something that not one of us can understand as we look back on it. While there are other items in the News Letter which describe details of several of the meetings, an overall picture of our California trip may be of interest.

There were, of course, the S.M.P.E. color sessions. But Los Angeles is also the home of Al King of the California Color Society, of which we believe he is a main spring, and of the Art Center School where he teaches. (Many of you met Mr. King when he came East for the annual Council meeting in 1944. How he got home from that meeting is a hair-raising story you should get him to tell sometime!) Three of the S.M.P.E. demonstrations and lectures were repeated for the School, -- Dr. Balinkin's twice. Dr. Guilford had discussed preferences with the group on a previous occasion.

Members of the local group were most gracious and hospitable. How we had the opportunity to see such a number of people on such a number of occasions is still a marvel, -- but one thoroughly appreciated, since it gave us an opportunity to become quite well acquainted with so many persons who had previously been known to us by name only. We met the Kings and Mrs. King's mother, Mrs. Etcheverry (who doubles as a fine local secretary), the Plocheres, the Hilers, the Sanfords, Elizabeth Franklin, the Palmers, the Cooks, the Fischingers, the Wilbars, Bruce Inverarity, Norman Bilderbach, the Chatains, the Brinks, Mary MacLean, Roy Brooks who acts for Harold Lloyd, and others -- all of them interested or working in some phase of color with the local color group. To many of this group we owe particular thanks, for they made it possible for us to see a great deal of color interest during the short time we were there. They also made it possible for us to meet on such an informal basis that we carried away with us particularly pleasant memories of a very full and colorful ten days.

D.N.

INTRODUCTION TO COLOR
BY RALPH M. EVANS
- A MASTERPIECE

That a new book, "Introduction to Color" by Ralph M. Evans, will be greeted by color workers everywhere with an enthusiastic reception is the considered opinion of this reviewer. Just off the press, the masterpiece is published by John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, New York. The price is \$6.00. The author states in the preface, "Color sprawls across the three enormous subjects of physics, physiology, and psychology. In the past it has been rare that any intensive worker in color has had the opportunity of understanding all three phases. It is to fill this gap that the book has been written." Mr. Evans has accomplished this task most admirably.

The first six chapters discuss lucidly the physical aspects of radiant energy which establish the bases upon which the subject of color is presented. The chapter headings are: Color and Light, The Physical Nature of Light, Light Sources, Illumination, Color Objects, and the Physics of Everyday Color. The next chapter, on Color Vision, describes the structure of the human eye and the mechanism of its operation. An introduction to the psychophysics of color is brought about by discussing the relative brightness sensitivity of the standard observer and the data on the color mixture curves.

What kind of color perception is evoked in an observer by a given spectral energy distribution is taken up in the chapter on the Visual Variables of Color. Here an interesting distinction is made by the author concerning a controversial subject in regard to a borderline between the psychophysics and psychology. Only those aspects of color, where the attitude and the intentions of an observer are possible, are considered to belong to the realm of psychology. The chapter on Perception and Illusion gives an interesting insight into the complex subject of mental phases of color. This chapter may be read pleasantly and superficially in half an hour, yet to understand completely the deep significance of some of its single paragraphs may well be hours-consuming. The Brightness and Color Perception are presented in a

systematic manner in the next two chapters. The emphases are on brightness, in photography, brightness constancy and simultaneous contrast, again distinguishing the physical, psychophysical, and psychological aspects.

The chapters on the Measurement of Color and the Specification of Color introduce the reader to the subject of colorimetry. The standards and procedures adopted by the International Commission on Illumination (I.C.I., 1931) are described. All mathematical difficulties are skillfully avoided. The qualitative aspects of Color Differences are discussed in a joint chapter on Color Names. Also Mixtures of Color Lights are presented with the aid of many I.C.I. chromaticity diagrams. The applications of colorimetry are then extended to such subjects as Effects of Illuminants, Transparent Color Mixtures, Paints and Pigments, and Color in Photography. Again many spectrophotometric curves and I.C.I. chromaticity diagrams are used with great effectiveness.

The last two chapters delve into the subjects of interest to artists and interior decorators: Color in Art, and Design and Abstraction. It is interesting to read these chapters as Mr. Evans, the scientist, analyzes what goes on, consciously or unconsciously, in the mind of an artist as he paints the picture.

The book is beautifully composed and the printing is excellent. The 15 full-page color plates are exquisite examples to illustrate the subjects under discussion. Probably the most commendable aspect of the whole book, and there are many, is its free and extensive use of graphs, spectrophotometric curves, I.C.I. diagrams, and other illustrations, totalling 304 within its 340 pages.

As a non-mathematical text, "Introduction to Color" should find its way into every school and class room where any pretense is made of really teaching the students of art and industry the fundamentals of color. The subject is treated simply, interestingly, authoritatively, and in some instances profoundly by its distinguished author, Ralph M. Evans. The reviewer is delighted to see such a book come to light and to adopt it as a text for a course in "Introduction to Color" given at the University of Cincinnati.

I. A. B.

INTERNALLY AND EXTERNALLY

The connection of this item with color is that we ran across it while searching for patents of color interest. German Patent 739,593 (1943) issued to S. Janssen and K. Winterfeld comprises a method of concentrating cardiac-active substances from mistletoe. Apparently we were not wrong, in our younger days, in supposing that mistletoe had some action on the heart.

KATHERINE CHANDLER IN A NEW FIELD

Through the courtesy of Walter Granville of the Color Standards Department of Container Corporation of America, we learned that Katherine Chandler resigned from that corporation on June 1. As Assistant Director of the Department of Design since its formation in 1935, she has made important contributions to this field and to the field of design and color in industry broadly. Following an extended vacation at her home in North Granville, New York, she expects to engage in free-lance work next Fall, with her headquarters in New York City.

PROFESSOR HELSON ON SABBATICAL LEAVE

Dr. Harry Helson, professor of psychology at Bryn Mawr College and delegate to the I-S.C.C. from the American Psychological Association, will be visiting professor

of psychology at Harvard University this summer. In September he will go to Palo Alto, California, where, with Mrs. Helson, he will spend a sabbatical year at Stanford University as Acting Professor and Thomas Welton Stanford Fellow.

Dr. Helson was well known as a proponent of the Gestalt psychology and for his early appreciation of and work in color constancy and transformation. His work and that of his students and associates has added much to our knowledge of the way in which color changes under chromatic illumination. His most recent work indicates exciting possibilities for future studies. Five papers have been published on this work, one is in press and two others are still to be prepared for publication by graduate students who have completed the work. Our best wishes go with Professor Helson to Cambridge and to California.

HANDBOOK OF COLORIMETRY As most of our readers know, the Handbook of Colorimetry, prepared by the staff of the Color Measurement Laboratory of the Massachusetts Institute of Technology under the direction of Professor A. C. Hardy (1936), has been out of print since September, 1946. We were informed some weeks ago, just too late for our May issue, that Technology Press has reprinted this standard work by the photo-offset process, after "correcting all the (quite minor) errors that had come to our attention" (Prof. Hardy).

BITTINGER HONORED From the Washington Star of June 20 we learned that Capt. Charles Bittinger, U.S.N.R., individual member of the I-S.C.C. and with a host of friends among color workers, was the first recipient of the newly established Benjamin West Clinedinst Memorial Medal. It was awarded by Artists Fellowship, Inc. at Virginia Military Institute, Lexington, Va., "for his achievement in the field of art, for his research into color, and the excellence of his paintings based on the fundamental principles of art." The medal was established in honor of the Virginia artist noted for his battle scenes. Henry O'Connor, president of the awarding organization, spoke on Capt. Bittinger's contributions to art and to naval science in his work at Bikini in connection with the atom bomb. The artist's connection with the Navy Department art project in the last war and his earlier work for the Government in painting eclipses of the sun and other color phenomena, are very well known.

Capt. Bittinger was born in Washington, D.C., where he still resides, 69 years ago. He was a pupil of the Art Students League of New York, and subsequently studied in Paris at the Ecole des Beaux Arts, Delecluse and Colarossi Academies. He is a member of ten professional artists' organizations, a past president of the Arts Club of Washington and the Society of Washington Artists and chairman of the Washington and Baltimore Colorists. Our available space does not permit our giving the complete list of the medals and honors and competitive prizes that have come to him. In this connection we may refer our readers to the recently published volume of Who's Who in the East. Perhaps this too is not complete; certainly it does not include an important aspect of his personality, his never failing wit and personal charm.

PLOCHERE COLOR SYSTEM In the spring of 1948 the Plocheres, Gladys and Gustave, who have been working in this field for 25 years, announced that the new Plochere Color System was ready for delivery. Their collection is a colorant gamut system; and it is best described by outlining the operations taken in its development. A small number of selected chromatic colorants specially formulated as colors in oil were used to produce 26 series of mixed-base paints, each series having six steps from a near-neutral to the full chromatic step. Each series of six mixed-base paints was formulated to look like a constant-hue series

and all 26 series of different hues are arranged in the usual sequence in radial order around a neutral point. This group of mixed paints, $26 \times 6 = 156$, represents the base of the color solid which is developed by making a white paint extension series containing eight steps from each of the 156 mixed or base paints. The white paint extension scale is a progressive one which was empirically determined so that throughout all of the toner gamuts toward white, these series give excellent coverage of the color range of the colorants.

A total of 1248 samples result from this thorough development and they are presented as 3" by 5" cards in a file box. Each card has the formula on the back which shows how each color was made from the base paints. The base paints, ten in number, are essential in using the formula data given and they are offered for sale to those who wish to produce flat wall paint in quantities for average use.

The Plochere collection was produced to satisfy the demand for a relatively inexpensive collection of color cards showing actual formulations from paints which are currently available; but the collection is not intended for use as color standards in the manner of other standardized works. It does however serve a great variety of needs very well and the text which accompanies the cards suggests some thousands of color combinations that may be based on this series.

The present collection is a simplification and revision of the earlier Plochere Color Guide which was made from a much larger number of the usual "colors in oil." The price of the collection is \$38.50, f.o.b. Los Angeles, and may be obtained from G. Plochere, 1820 Hyperion Ave., Los Angeles 27, California.

C.E.F.

REPORT ON COLORIMETRY AND ARTIFICIAL DAYLIGHT

We have received copy of the fine Secretariat Report on Colorimetry and Artificial Daylight recently published by Technical Committee No. 7, U. S. National Committee, International Commission on Illumination.

Like everything else done by Dr. K. S. Gibson and his associates it is very well organized and thorough. Besides a bibliography of 712 references, the report, which is in response to the questionnaire sent out by the committee in November, 1947, considers the following subjects: (1) Proposed standard illuminant E; (2) definitions of colorimetric purity; (3) adequacy of standard observer for technical colorimetry; (4) definition of standard illuminants in the ultraviolet for the colorimetry of fluorescent materials; (5) illuminants for color matching; (6) specification of color-rendering properties; (7) color discrimination; (8) color terminology. We are informed that anyone wishing a copy of the report may obtain it by writing to Dr. K. S. Gibson, Chairman, Tech. Com. 7, U.S. National Committee, I.C.I., National Bureau of Standards, Washington 25, D.C.

NAVY JOBS FOR COLOR VISION WORKERS

In a letter received in May, just too late for inclusion in our May issue, we were informed that the U.S. Naval Medical Research Laboratory at the U.S. Naval Submarine Base, New London, Conn., then had

several openings available for "Civil Service Researchers" in sensation and psychology, working in the Laboratory's division of Color Vision and General Vision Facilities. These are rated from P-1 to P-4, depending on the amount of training and education or equivalent experience. There is no provision under our Civil Service set-up for taking on beginners; the minimum requirement would be an A.B. major in psychology with special interest in sensation and perception or experimental laboratory work. Immediate supervisors will be Dr. Forrest Dimmick and Lt. Comdr. Dean Farnsworth, well known to all color workers.

**COLOR-
BLINDNESS
REPRINTS** Reprints of a paper on "Investigation on Corrective Training of Color Blindness" by Lt. Comdr. Dean Farnsworth, H(S) USNR, are available from the National Society for the Prevention of Blindness, Inc., 1790 Broadway, New York 19, N.Y. The paper is their Publication 472, price five cents. The material in this report is from Color Vision Report No. 15, U.S. Medical Research Department, S/M Base, New London, Conn. It is reprinted from the Sight-Saving Review, vol. XVII, no. 4, 8 pages; it contains copies of statements from the National Bureau of Standards, the Color Blindness Committee of the Inter-Society Color Council, and the Association of Schools and Colleges of Optometry.

**GARDNER-
HUNTER
INSTRUMENTS** We have recently received preliminary announcements of new instruments developed at the Henry A. Gardner Laboratory, 4723 Elm Street, Bethesda 14, Md., by R. S. Hunter, formerly of the National Bureau of Standards and well known to I-S.C.C. members. These are automatic continuous photometric recorders for gloss, reflectance, etc., and the much-discussed Hunter Photoelectric Colorimeter and Color-Difference Meter. Prices of the former start at \$830, while the price of the latter is \$1000, f.o.b. Bethesda.

Turning to the former instruments first, we are informed that a number of photoelectric exposure heads for gloss, reflectance and other photometric measurements had been developed, and that recently the Laboratory has found it possible to combine some of these with modified electronic recorders to make accurate recording instruments for continuous records during production from paper, fabrics, plastics, films and other materials produced by continuous processes. In a typical application, a 75° gloss exposure head has been combined with a recorder and placed in a paper mill to record the gloss of paper as it emerges from a supercalendar stack. A method for keeping this apparatus continuously in calibration has been devised and is briefly described in an announcement from the Laboratory. With the new apparatus, it is possible not only to measure gloss, etc., but to adjust production processes in response to these measurements. Any of the usual types of controlling valves and switches may be installed in the electronic recorders to provide such control.

The Hunter Colorimeter and Color-Difference Meter was the subject of a paper by the designer at the Winter meeting of the Optical Society of America in New York. It is a photoelectric tristimulus colorimeter measuring color on three scales closely resembling the L, a and b scales of F. Scofield (1943). In the new apparatus, photocell windows and measuring circuits have been selected so that these three color values are read directly from 10-turn potentiometer rheostats. Moreover, these three rheostats may be set to the values of some standard color and a specimen sample of somewhat similar color then placed in exposure position. As a selector switch is turned to each of three positions, deflection of the current-deflecting galvanometer shows on these scales directly the magnitudes of the color differences between the specimen and the standard. The apparatus is thus able to detect small color differences directly and should be well suited to the needs of industry for apparatus to maintain quantitative color tolerances. While there is a difference between the combinations of the instrument and those theoretically required to duplicate exactly the (I.C.I.) Standard Observer, the results will generally suffice for exacting industrial practice and can easily be interpreted for more precise requirements. The instrument is limited in its application to reflecting materials.

For the benefit of those not familiar with the Scofield type of color analyses, it may be said that analysis is in terms of reflectance, "redness-greenness," and

"yellowness-blueness." See "A Method for Determination of Color Differences," Scientific Sect. Circ. 664, pp. 183-9, Natl. Paint, Var. and Lacq. Assoc. (1943). For literature and photographs of the apparatus, anyone interested may write directly to the Laboratory at the address given above.

KREIDL'S REPORTS The descriptions of the preceding paragraphs were taken in part from the concise and informative reports of Dr. N. J. Kreidl, I-S.C.C. delegate from the American Ceramic Society, on the Winter meeting of the Optical Society and of the I-S.C.C. These reports, which may be found in the April issue of Glass Industry, may well serve as a model of what such reports should be; and we take this opportunity of congratulating Dr. Kreidl on them and thanking him for a copy.

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