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INTER-SOCIETY COLOR COUNCIL

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LOCAL COLOR GROUPS

The Chicago Association for Color Research recently re-elected Merle Sweet of Northern Pigment Co., Ltd., Toronto, president of the Association. Oliver J. Lunn, U. S. Color Card Co., is the new vice-president and Albert E. Russell, Jewel Paint and Varnish Co., secretary. At Art Center, four exhibitions were scheduled for November: two of books, one of photographs and one of ceramics. The Second Annual Chicago Color Exposition, sponsored by The Association for Color Research, was held daily (except Sunday) throughout October at Art Center Chicago, 32 West Randolph Street. The exhibition included modern methods of physical and psychological color measurement, important systems of color organization, examples of color photography, lithographic and letterpress color printing, raw pigment materials, works of art, educational and merchandising techniques; and a demonstration based on a Survey of Color Acceptance, its Normal Demands and its Wartime Limitations, embracing a great variety of materials involving color. On each Thursday night a movie short on various phases of color science and application was shown and followed by discussions of the use of color in war years.

In a notice dated October 30, 1942, Professor Michael J. Zigler, Chairman of the Boston Color Group, informed its members after discussions with several "charter" members, that the Group would suspend the regular meetings, perhaps for the duration, or at least until the time for the resumption of meetings seemed ripe. Owing to the war emergency several difficulties had arisen, and the prospect of attendance at meetings and the securing of speakers seemed more difficult. Members who had diverted their research efforts from normal peace-time interests to government service would not be at liberty to discuss their researches publicly. Other members have had to assume additional responsibilities, so that activities eagerly undertaken in peace times have had to be suspended. But in view of past marked interest in the Group's programs and the growth of membership, it was decided to try to keep the members of the Group in touch with one another. For this purpose a committee was appointed to consider suggestions as to when meetings can best be resumed. The Committee consists of Professor Frank Allen, Chairman; Dr. S. Q. Duntley, Mr. George Nerney, Mr. Arthur W. Cornell and Mr. Lee W. Court.

The Colorists of Washington and Baltimore met in Washington for dinner at the Arts Club on Monday evening, November 23. Dr. Domina Eberly Spencer told the group what part she thinks mathematics can play in formulating a regular color space to serve as a basis for the study of color harmony. Mr. Greville Ricard of the Office of Civilian Defense will discuss certain problems in civilian camouflage.

CHANGES IN MEMBERSHIP

We are glad to welcome to membership in the Individual Group of the Council, Mr. Frederick T. Simon. Mr. Simon, now with the Army Quartermaster Depot at Philadelphia, Pa., was formerly with the Calco Chemical Company. We are sorry to lose Mrs. Carolyn L. Dewing by resignation.

IN THE ARMED SERVICES

More and more ISCC delegates and members are entering active service in the Armed Services of the United States. We mention the following and shall be glad if any unmentioned ones will let us know (if permitted) where they are serving and in what capacity.

Lt. Stanley Backer, War Department, New Orleans, La.
Lt. Comdr. Charles Bittinger, Bureau of Ships, Navy Dept., Washington, D. C.
Major H. D. Eaton, Jr., Ft. Belvoir, Va.
Major F. A. Geldard, War Department, Washington, D. C.
Lt. James J. Glenn, Navy
Major J. P. Guilford, Santa Ana, California
Capt. Frederic H. Rahr, Marine Corps
Private Harry H. Scheid, Air Base Squadron, Colorado Springs, Colo.
Lt. Col. Walter M. Scott, overseas.

1943 ANNUAL MEETING

The 1943 annual meeting of the Inter-Society Color Council will be held concurrently with the winter meeting of the Optical Society of America in New York City early in March, 1943. Plans are already under way for a Discussion Session to consist of panel discussion by delegates of various member bodies. At the Business Session the Council will receive reports from the chairmen of the delegations and from each committee chairman regarding activities during 1942. This year there will be no Popular Session. The Technical Session of the Council, already planned as a discussion of color blindness and color-blindness tests, is being developed into a series of papers that will be presented as a symposium on the program of the Optical Society. This symposium, also one on vision already arranged for the Optical Society program, will interest all ISCC delegates and members. Although there will be no popular session on the ISCC program there will be an evening lecture on the OSA program of interest to ISCC delegates and members, a lecture and demonstration by Ralph M. Evans, chairman of the S.M.P.E. delegates to the ISCC. Mr. Evans will outline and demonstrate the consequences for color photography of lightness constancy, simultaneous contrast and adaptation-level phenomena.

NEW A.S.T.M. STANDARD

From W. F. Bartoe, delegate to the Council from the A.S.T.M., we have received copies of the six following Tentative Methods of Test for Optical Properties of Plastics developed and approved under Committee D-20 of the American Society for Testing Materials:

D 620 - 41 T, Color Fastness of Plastics to Light, Issued 1941
D 636 - 41 T, Diffusion of Light by Plastics, Issued 1941
D 542 - 40 T, Index of Refraction of Transparent Organic Plastics, Issued 1939, Revised 1940
D 637 - 41 T, Surface Irregularities of Flat Transparent Sheet, Issued 1941
D 672 - 42 T, Haze of Transparent Plastics by Photoelectric Cell, Issued 1942
D 675 - 42 T, Terms and Descriptive Nomenclature of Objects made from Plastics, Issued 1942

Any suggestions for revision of these standards should be addressed to the American Society for Testing Materials, 260 South Broad Street, Philadelphia, Pennsylvania, or to Dr. W. F. Bartoe, Chairman of Sub-committee IV, A.S.T.M. D-20, Box 219, Bristol, Pa.

EXECUTIVE COMMITTEE MEETING

The Executive Committee of the ISCC met at the Pennsylvania Hotel in New York City on October 31, with only Col. Scott absent (overseas). Among the many matters on which action was taken, in

addition to accepting the above-mentioned membership application, were the discharge with thanks of the Public Relations Committee, decision by the Executive Committee to itself formulate an explicit statement of Council policy; possible publication of the Godlove color bibliography for 1934-42; acceptance of the invitation of the Optical Society of America to meet concurrently with them in February or March, 1943, in New York City, and appointment of committees for the meeting; a possible resolution with respect to publication in newspapers or periodicals of iso-chromatic color-blindness charts, and several other matters. These have been reported in the minutes of the meeting, which were mailed to the chairmen of delegates of all member-bodies under date of November 5, 1942.

MUNSELL COLOR FOUNDATION

The first meeting of the Board of Trustees of the Munsell Color Foundation, Inc. was held at the Pennsylvania Hotel in New York City on October 28, 1942. The following Trustees were present: Arthur S. Allen, Blanche R. Bellamy (manager of the Munsell Color Co.), I. H. Godlove, Loyd A. Jones (representing the Optical Society of America), A. E. O. Munsell (representing the donors of the stock of the Munsell Color Co.), and Dorothy Nickerson (nominated by the Inter-Society Color Council). Deane B. Judd was prevented from attending by a railroad obstruction. Charles G. Page, counsel for the Foundation, presided at the meeting. In addition to acting on the legal formalities required by the law of the State of Maryland, by whom a charter was issued, officers were elected, By-Laws adopted, and a gift of all of the outstanding capital stock of the Munsell Color Company from Mrs. Juliet E. Orr Munsell was accepted with expressions of appreciation. Several other matters, reported in the minutes of the meeting, were the subject of discussions or resolutions. The officers elected were: Deane B. Judd, President; Loyd A. Jones, Vice-President; and Blanche R. Bellamy, Secretary and Treasurer.

SPRING COLORS

During October, it was announced by Margaret Hayden Rorke, managing director of The Textile Color Card Association of the United States, Inc., that the 1943 Spring Woolen and Rayon color cards have been released to members. Each card contains 36 colors. In accordance with the Association's wartime conservation policy, all colors in these new cards have been passed upon by its Dyestuff Advisory Committee (see News Letter No. 40). Spirited musical themes supply the inspiration, said the announcement, for each of these spring collections. The tone-on-tone- groups, called Harmonies in the Woolen Card and Melodies in the Rayon Card, feature light and medium blending colors. Included among the basic color movements are misty air blues, cream, cocoa and light coffee tones; smoky jade and subtle yellowish greens; dusty rose as well as fuchsia and rosy reds, mauve and violets; greenish aqua or sea blues and soft gold and amber tones. Keyed to the more vibrant color scale is the group of Solos highlighted in the Woolen Card. These include brilliant versions of purple, fuchsia, turquoise, chartreuse, emerald, sapphire and patriotic red. Featured in the Rayon Card are Trios, or groups of three contrasting colors, which play up such striking combinations as dahlia rose, chartreuse and royal blue and natural, orange and peacock.

The 1943 Spring Glove Card has also been released by the Association. This contains 15 colors. Among the colors portrayed, which apply to glove leathers as well as fabrics, are important basic tones, as well as pastels and vibrant colors for special fashion promotion. The 15 colors comprise: Cream Blond, Love Pink, Sweetheart Blue, Airman Blue, Dahlia Rose, Magnetic Purple, Fiesta Fuchsia, Liberty Red, Freedom Green, Golden Honey, Silvertone, Turftan, Golden Tobacco, Town Brown and Bluejacket. Chamois Yellow, while not shown on the card, is mentioned for staple needs.

It was further announced by Mrs. Rorke that 23 colors have been chosen for the 1943 Spring and Summer seasons by The Textile Color Card Association's Millinary Color Committee, representing the felt hat body and straw industries. The colors include 10 chosen from the 1943 Spring Woolen Card, 5 from the 1943 Spring Rayon Card and the following repeated from various previous seasons: Sunniblu, California Sun, Manila Brown, Turftan, Trophy Gold, Strato Grey, Vieille Paille and Burnt. The notation is made that the "burnt" tones, Vieille Paille and Burnt, are for straws only.

OTHER IMPORTANT TCCA ACTIVITIES

We hope that our readers will bear with us when we have been apparently dilatory in making belated reports of happenings in the color field. A case in point was occasioned by the receipt on September 23, of several important news items concerning the activities of The Textile Color Card Association, Inc., which were designed to cooperate with the Government and the Armed Services in their conservation and other war-necessitated moves. ~~Since~~ On that date copy for News Letter No. 43 was already in the hands of Mimeoform Service in Washington for mimeoforming and distribution; and so the interesting news reaches you rather late. Turning to the news items, we note first a stirring appeal and broadcasted explanation of important color trends in merchandising necessitated by the needs of the Armed Services. For example, browns and tans are especially needed by them, and so the TCCA is cooperating by discouraging the use of these colors. In the 1942 Fall Woolen Colors are presented only "dusty frosted shades in the intermediate and lighter category" with only four colors falling in the "darkened scale" so as to save dyes. "Chemicals are one of the greatest weapons of warfare; chemicals make dyestuffs; dyestuffs make colors," says the Association, and adds that colors can be "fashion-right" but also "war-right."

Another news item described a meeting of the Salvage Committee of the Textile Spinning, Weaving and Finishing Industries of Greater New York held on August 6 at the Hotel Roosevelt. The meeting of representatives from these industries was called by Charles Pinnell, general sales manager of the Merrimack Manufacturing Company and President of the Textile Color Card Association. Another item deals with Hosiery Colors for the Women's Army Auxiliary Corps, announced by the TCCA in cooperation with the office of the Quartermaster General of the United States Army. The WAAC official color, a "warm sunburnt" color will be called Victorious. It will go well with the uniform color of the Corps and with the Association's shoe, bag and glove leather color, Golden Tobacco. Cotton anklets will be in Mosstone or Old Gold. In a release on the shoe-leather colors required by the WPB Conservation Order on Footwear M-217, the WAAC leather color, Golden Tobacco, was deemed so close to the Army's official Army Russet that it would be unnecessary to have both colors. The other official footwear colors are: Town Brown, Turftan, Bluejacket, Black and White. The Association's managing director, Margaret Hayden Rorke, explained the needs of conservation and gave practical information about colors which make harmonious combinations with the official footwear colors. In the broadcast on September 10, she explained that the issuance of the Association's card for the 1943 colors for men's and women's shoes was delayed to make it conform to the WPB regulations and facilitate the greatest cooperation.

Finally, another item deals with the U. S. Army Color Card showing the Official Standardized Shades for Olive Drab, Khaki and Drab Sewing Threads, issued by the TCCA at the request of the Quartermaster General. This is in line with the Association's long-continued policy of cooperating in the standardization of U. S. Government official colors. Besides Shade P (Army Khaki), Shade T (Army Olive Drab, Dark Shade) and Shade U (Army Drab), there are included three varieties of Army Olive Drab (abbreviated O.D., Shades Q, R and S) necessitated by varying uses on cotton, wool, etc.

APTITUDE TEST AND COLOR BLINDNESS TEST

We have received from Dr. Dimmick the following summary of the discussion by the Committee on the ISCC Aptitude Test and Color Blindness Test. On Thursday and Friday afternoons the following delegates met and discussed various problems of the two committees: Hardy, Judd, Foss, Paine, Rittler, Nickerson, Macbeth, Murray, Farnsworth, Balinkin, Granville, Zigler, Gage and Dimmick.

The committee on the Color Aptitude test reported that about 225 sets of data had been received from all sources. These results were presented to the Optical Society on Friday by Dr. Dimmick. A new procedure with a limited time of thirty minutes has been proposed and data is now being accumulated with that method. Dr. Dimmick pointed out that the total number of results that have come in is very small compared to the number of test sets that are in the hands of delegates. He urged that more delegates turn in results, particularly with the new procedure. Precise instructions for the new procedure will be available shortly. Attention was called to the fact that the original materials are showing the effect of two years wear and tear. Mr. Foss and Mr. Granville agreed that they would undertake to produce a new set of material between this meeting and the next one, presumably in February. The new series will include one in red, one in green, and one in either blue or yellow. These additions will perform the same function as the colors which they displace, but will meet the objections to the present limited range of colors.

A letter from Dr. Balinkin was read in which he described a development of the test, upon which he has been working. "During the past year we have designed and constructed an apparatus for color matching consisting of two concentric disks with 40 small color chips on each. After the match is made the observer presses a lever and the number of the selected chip is printed on a paper ribbon opposite the chip to be matched. A test of 40 chips can be made in about 15-20 minutes. The mechanical features of the design are rather interesting and with the apparatus now in running order we are planning to make use of it for a number of problems and tests. If this information is of interest to members of the Committee kindly report it at the meeting."

The new materials will be available also for use in the single judgment Color Blindness test being developed by Dr. Hardy's special committee. Discussion at the first session then turned to the work of the latter committee. At the second session a number of points concerning the single judgment test that had come up at the discussion were gone over and decisions concerning them were made. With the present procedure it does not seem possible to interpret the scores stictly as limens, but the committee saw no reason to object to the Navy's so labeling them. A standardized form of the test was decided upon which is to be used in all sets so that all results will be precisely comparable. In this procedure twenty pairs of chips will be presented in a fixed random order which will be the same in all sets. Ordinarily the test will consist of forty judgments, but some experimenters will repeat the test to obtain eighty judgments. For the present, no system of weighting is to be used and the scores will be reported as errors in each series divided by the total errors. No "equal" judgments will be allowed, because of the difficulty which they raise with normal subjects.

Whenever it is possible subjects will be given also an Ishihara, American Optical, and Rabkin test. In addition, Dean Farnsworth has arranged to allow a new test, on which he has been working, to be tried out along with the ISCC test, in order that both his and the Council's work will be as completely coordinated as possible.

The instructions were changed to recommend 50-60 foot cnadles illumination in place of the earlier restriction to 10 f.c. Macbeth daylight of 6500-7500 K. is still standard. When sufficient data have bben compiled with the latest procedure the committee will meet with its service members for the presentation of these results.

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INDEX OF SPECIAL ARTICLES

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CONFERENCE ON COLOR (WHEATON COLLEGE)
COLOR APTITUDE TEST AND GRAY PAINT STANDARD
MUNSELL PAPERS IN 40 HUES
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INSECTS AND COLOR

The following bibliography on the reactions to colors was gathered by Dr. Judd, who states that it was based largely on the paper by E. Hardy, the last below. Dr. Judd relied on Hardy for the brief summaries of most of the articles cited.

E. Hardy, Lancet 240, 435 (1941), Entomologist's Magazine, London (1941). Musca domestica (housefly) and Fannia canicularis avoid a pale yellow whenever they have a choice. White is preferred.

V. B. Wigglesworth, Principles of Insect Physiology, London, 114-20 (1939), Color vision exists in Fannia (genus containing the lesser housefly) and other insects. Reflex responses of Drosophila (fruit fly) to a striped pattern moved in front of it was due to luminosity, not color.

P. R. Awati, Indian J. Med. Research 7, (3), 548 (1920). Yellow has the greatest attraction for house flies, red and violet the least. Both colored lights at night and colored tanglefoot papers by day were used.

O. C. Lodge, Bull. Ent. Research 9, (2), 141 (1918). House flies show no color preference either in the case of foods, colored lights, or colored fabrics. The sense of smell governs responses more than the sense of sight.

S. B. Freeborn & L. J. Berry, J. Econ. Ent. 28, 913 (1935). Pale colors, including white, are distinctly more repellant to the house fly than the intermediate ones, which included aluminum, the darkest one being obviously the most attractive.

D. J. Lee, J. Coun. Sci. Industr. Res. Aust. 10, 275 (1937). Yellow, blue, pink and green appear to be attractive to Lucilia cuprina Wied. in Australia, a fly also widely distributed in Asia and Africa and related to the common British and U.S. green-bottle or sheep maggot fly, Lucilla sericata, Mg.

R. Newstead, Preliminary report on the habits, life-cyde and breeding places of the common house fly Musca domestica Linn. as observed in Liverpool, second interim report, 1909. The green-bottle fly objects to blue, pale violet, dark brown and lemon yellow distinctly, and also to a lesser degree to clear green. Azure color was much frequented, and it also exhibited a liking for rose, red, clear green (?) and clear yellow. It also preferred light colors to dark colors.

E. Hardy, Horse 9, (35), 169 (1936). In Holland, stables and cow stalls are sometimes treated with a washing blue inside to avoid fly-trouble and a few years ago those German government stables all dark blue inside were without the usual fly trouble.

G. H. F. Nuttall & A. E. Shipley, J. Hygiene 2, 58 (1902); also E. H. F. Nuttall, Brit. Med. J. (2), 668 (1901). The

common European malaria-bearing mosquito Anopheles maculipennis Mg. alighted on the fabric-colors in the following order of favor: navy blue, 108; dark red, 90; brown, 71; scarlet, 50; black, 49; slate gray, 31; olive green, 24; violet, 18; leaf green, 17; blue, 14; pearl gray, 9; pale green, 4; light blue, 3; ochre, 2; white, 2; orange, 1; and yellow, 0. (The U. S. Army subsequently to this report withdrew its regulation navy blue shirts and issued light ones for use in malarial districts.)

Sheriff, The Times 20; iv. (1932). During five years in South Africa it was found that pink or yellow mosquito curtains never harbored mosquitos in their folds, and with boxes lined with navy blue, pink, gray, and yellow flannel, the interiors of the blue and gray boxes were thickly covered with mosquitoes, while but two or three were found in the pink or yellow.

Woodless, London Observer 26, ix 91933); New Caledonia mosquitos prefer blue and white, avoid yellow.

L. M. Bertholf, Z. vergl. Physiol. 18, 32 (1932); F. E. Lutz, Ann. New York Acad. Sci. 29, 181 (1924); F. E. Lutz & E. N. Grisewood, Amer. Mus. Novit., no. 706, 1 (1934). Drosophila will respond to light of wavelength 257 mu. Most insects are sensitive to ultraviolet, but not to deep red. Maximal attraction for Drosophila for a given radiant emittance is at wavelength 487; for Calliphora, the blue-bottle blow fly this attraction is at wavelength 504 mu. Insects attracted to light seem to perceive ultraviolet better than other parts of the spectrum, but the luminosity of various parts appears to be different with different insects.

Z. Zakarian, Color vision in the house fly (Musca Domestica), J. Opt. Soc. Amer. 23, 195 (1933). Flies prefer white and lightest tints of all hues, white and cream being equally preferred. There is no evidence of color vision, the preference bing according to luminosity alone.

Pilington Bros. Ltd., Nature, p. 529, April 5, 1930; Buchanan Smith, Nature, p. 780, May 24, 1930; Beckett, Nature, p. 730, May 24, 1930; Nature, p. 277, August 15, 1931. Colored glasses are deterrent to the house fly, yellow and red being the best deterrents, and blue and green not nearly so effective.

E. Hardy, reactions of Certain Flies to Colors, Medical Record 155, 87 (Feb. 4, 1942). A summary for houseflies, fruit flies, green-bottle flies, and mosquitoes, with a bibliography of 18 titles.

To the above references contributed by Dr. Judd, the Editor may add reference to a paper by the late Prof. F. K. Richtmyer, J. Opt. Soc. Amer. 7, 151-68 (1923), entitled "The Reflection of Ultraviolet by Flowers." After asking the question what part, if any, is played by ultraviolet light in attracting insects to flowers, the author gives one or two observations of his and Dr. F. E. Lutz' and in a footnote (p. 152) writes: "A very large number of papers - one authority states 5000- has been written on the vision of insects and its relation to flowers." In this footnote he gives a half dozen references.