

Inter-Society Color Council *Newsletter*

NUMBER 200
May - June 1969

THE FIRST AIC CONGRESS: IMPRESSIONS

AIC off to Flying Start with Color 69 at Stockholm --
Dean B. Judd.

The first meeting of the International Color Association (AIC), of which the ISCC is the organization representing the United States of America, was held in Stockholm, 9-13 June 1969. More than 500 people from 24 countries were registered, and more than 150 papers were presented. Sweden supplied the largest number of registrants (123), and West Germany was second with 91. The USA, however, was well represented by 75 registrants, 34 of whom are members of the ISCC. The organizing committee, under the chairmanship of Dr. Erik Ingelstam, did itself proud. The numerous papers were presented, generally in three parallel sessions, by making use of three fine lecture halls of the Royal Institute of Technology, appropriately identified by the names Red Hall, Green Hall, and Blue Hall (unitary hues, of course), and the registration and instrument exhibit was located in the Yellow Hall, thus completing the list of psychologically primary hues in honor of Ewald Hering, the famous German physiologist of the 19th century, who formulated the opponent-colors theory. The committee also organized a very popular program of social events outstanding among which were a reception at the City Hall, visits to the Wasa Museum and the Museum of Modern Art, and opera at the Drottningholm court theater, where Dr. Wright, with appropriate salutation, presented flowers to the blushing ingenue who had just enchanted us all with her brilliant singing of Mozart.

There was ample opportunity to get acquainted at the social events, and technical discussions between registrants of different nationalities could frequently be overheard in the registration room, in the exhibit room, and in the cafeteria where nearly everyone went for their luncheons. Informal discussions were unusually important because of the impossibility of hearing all of the contributed papers in the three simultaneous sessions. It was not true, of course, that every time you managed to hear a paper of particular interest you missed two others; it just seemed that way. There were 26 papers on color space or perceived size of color differences, 19 on color instrumentation, 16 on

colorant formulation, 15 on color perception, 10 on color blindness, 19 on color aesthetics, and 14 on color in architecture and design. New faces, new ideas, and new approaches to old problems abounded, and although many questions must remain that will not be resolved until the appearance of the proceedings giving printed versions of the papers presented, there is no doubt that the exchange of views at Color 69 was most valuable to all participants.

Equally satisfactory, and certainly less hectic, were the five invited lectures, each scheduled with no competing event, and attracting large audiences. Anders Hård spoke on Quality Attributes of Color Perception; Russell De Valois, on Analysis and Encoding of Color Information and the Visual Nervous System; Yves Le Grand, on Theories on the Metric of Color Space; Richard Theile, on Principles and Problems of Color Television, and in the closing session, W. D. Wright spoke on the Teaching of Color -- Challenge and Opportunity.

There was also an unscheduled evening session announced by Anders Hård, Swedish Colour Centre, at which he proposed, at the request of 10 or 12 interested persons, to explain briefly the exhibit of the "Natural Colour System" placed in the corridor of Red Hall, and to answer any questions about the development of the system. This session swelled to about 100 people who kept asking questions for about three hours. We learned that choice of the colors was guided by asking a group of observers to estimate the percentage of white and black in the perceived color, and also the percentages of the appropriate two contiguous chromatic primaries in the closed series: red, yellow, green, blue, red. The variables illustrated in the preliminary charts on exhibit are hue (determined by ratio of the two chromatic percentages), "chromaticness" (measured by the sum of the two chromatic percentages), and percentage of black. The principle on which the "National Colour System" is based does not ensure uniformity of color spacing, and the degree to which spacing engendered by this principle agrees with systems, like the Munsell color system, intended to have uniform spacing is of some, though not vital, interest to the Swedish Colour Centre, and remains to be determined by comparison with those systems.

New officers of the AIC were elected as follows for the term 1969 to 1973: Yves Le Grand, President; C. J. Bartleson, Vice President; E. Ganz, Secretary-Treasurer; and W. D. Wright, Gunnar Tonnquist, Man-

fred Richter, and Tarow Indow, Members of the Executive Committee. The Colour Group of Great Britain proposed that Color 73 be held in York, England, and this proposal was accepted. R. W. G. Hunt proposed an exciting new method of condensing the presentation of papers which may be given a trial at Color 73. Hopefully triple sessions can be dispensed with.

By J. T. Smith

When Mr. Hanes asked me to report on the AIC's first meeting (Association Internationale de la Couleur) in Stockholm, I was delighted. After arriving in Stockholm, I began to wonder what I had let myself in for. The size of the Congress was much greater than I had anticipated, with twenty-three countries represented by 535 delegates. I will not attempt to go into the papers presented, as these will be available for purchase in printed form through ICC headquarters in the near future.

It was, of course, impossible to attend all of the sessions presented. Generally, the sessions I attended were extremely well organized and much credit must be given to the people who spent a great deal of time arranging the presentation of the papers, time schedules, etc. It would be unfair of me to try to name the persons involved, as I am not familiar with all of them, but I do know that Dr. W. D. Wright of the U.K. was busy every minute, along with Andreas Hård of the Swedish Color Center. Among the familiar faces from the American delegation were Professor Billmeyer, Professor Guth, Dr. Judd, Max Saltzman, Ruth Johnson, Dorothy Nickerson, and one face I seem to have seen everywhere -- Benno F. Weber. One who was prominent by his absence was Ken Kelly of the National Bureau of Standards. I had looked forward to seeing Ken at this meeting.

The complete gamut of the spectrum was covered by the presentation of the papers, and even though there were a number of subjects which I personally had little interest in, I found the papers very informative and well presented. My only criticism is that on some occasions papers covering similar subjects were being presented simultaneously. In the future, the rearrangement of such papers on the program to offset this problem would satisfy those of us who were trying desperately to attend two sessions at once! The printed program was extremely well done, and the signs and directions for locating the different conference rooms were excellent. For an American who has only a slight command of one language, this was very good, and I always felt at a disadvantage with the different delegates who not only could speak and read their own language, but spoke English (and perhaps one or two more languages) very well. It seems a shame that we in the United States don't concentrate harder on foreign languages.

The Congress convened at 10 a.m. on June 9, and the opening address was given by Professor Sven Brohult of the Academy of Engineering Sciences. The welcoming address was given by Professor Erik Ingelstam of the Royal Institute of Technology.

The reception at the City Hall, given for the delegates by the City of Stockholm, was grand beyond description. It is impossible to imagine splendor beyond those beautiful rooms. Champagne was served, and all one had to do was take a sip and someone immediately refilled the glass. The program on Thursday evening, called "Instead of a Banquet" was a delightful variation of the dinners one becomes accustomed to at conventions. The delegates met at the Museum of Modern Art, enjoyed a band concert on the museum steps, and then for approximately one hour toured the museum. Unfortunately, I do not appreciate modern art, and having spent some years in Africa, and having seen a number of cases of elephantitis, I could only feel a very deep sympathy for Salvador Dali's model. It is hard to believe an artist with Dali's ability could waste such an enormous piece of canvas.

The delegates were then led by the Pied Piper to the docks, where we were transported by motor launches to the Wasa Museum. Dinner was served in the museum courtyard, and later the delegates were given a tour of the ship Wasa and the museum dining room opened for dancing.

Again, one must thank the planning committee for an exceptional, really outstanding, job.

One cute remark I heard at the Information Desk, when a gentleman inquired for Dr. Wright and was advised he was "in the hall." The gentleman stated he didn't know Dr. Wright, and was told "You can't miss him -- he's the very distinguished looking gentleman who hasn't any color on whatever."

S. LEONARD DAVIDSON TO BE PRESIDENT-ELECT OF FSPT

S. Leonard Davidson, of National Lead Co., has been nominated to be the President-Elect of Societies for Paint Technology for 1969-70. Len is currently Treasurer of FSPT and well known to ISCC members as chairman of that member-body's delegation.

John P. Teas has been nominated to the post of Treasurer, and Barry Adler and Carlton R. Huntington have been nominated to three-year terms on the Board of Directors.

The Annual Meeting of the Federation will be held in Chicago, November 5-8, 1969. The subject of safety will be featured, along with the customary Mattiello Lecture, Workshops, Society and Roan Award papers,

a panel discussion on "How to Introduce a New Product," and a Paint Research Institute Seminar on current research.

RICHARD S. HUNTER HONORED BY TAPPI

The TAPPI Testing Division Award for 1969 will be presented to Richard S. Hunter, president of Hunter Associates Laboratory, Inc., Fairfax, Va. The award, for outstanding contributions to the paper industry and to TAPPI, will be presented to Mr. Hunter at ceremonies during the TAPPI Testing Conference to be held Sept. 30-Oct. 3 at the Sheraton-Rochester Hotel, Rochester, N.Y.

Mr. Hunter was recently named a TAPPI Fellow, a title to honor members who have contributed meritorious service to the Association or paper industry. According to TAPPI, Mr. Hunter, during a 40-year career devoted to the appearance characteristics of paper, has devised methods for measuring all of them, and has developed suitable instruments for making these measurements. He is responsible for numerous testing instruments used in the pulp and paper industry.

HERBERT LIVESEY RECEIVES AULT AWARD FROM NAPIM

The highest honor of the National Association of Printing Ink Manufacturers, the Ault Award, was given this year to Herbert Bailey Livesey, Jr. Presentation of the bronze Ault Award medal was made at the Association's 55th annual convention, held recently in Santa Barbara, California. Mr. Livesey, NAPIM's retiring executive director, is the 16th recipient of the Award, which is given for distinguished contributions to the advancement of the printing ink industry.

"No individual has done as much to raise the stature of the printing ink industry as Herb Livesey," said John C. Lyman, NAPIM president. "Through his efforts, ink manufacturers have gained added pride in their industry and ink manufacturing is now recognized as highly respected science, requiring the best of custom coating formulation talent and skill," he said.

PAUL J. PAPILLO TO BE DIRECTOR OF PIGMENTS DEPARTMENT AT GEIGY CHEMICAL

Paul J. Papillo, an individual member of ISCC, has been named to the new position of Director, Pigments Department in the Industrial Chemicals Division of Geigy Chemical Corporation.

Mr. Papillo will be responsible for the new department's over-all administration, including marketing, product management, and technical development and service. Formerly a Technical Development Manager

in the division, he has been associated with Geigy since 1958, primarily in the areas of pigments and stabilizers.

Mr. Papillo is a member of the American Chemical Society, the Society of Plastics Engineers, the New York Pigment Club, and the New York Society for Paint Technology (of which he is a member-elect to the Board of Directors).

EDWIN I. STEARNS APPOINTED RESEARCH ASSOCIATE AT AMERICAN CYANAMID

Dr. Edwin I. Stearns has been appointed a research associate in the research and development laboratories of American Cyanamid Company at Bound Brook, N.J.

As a research associate, Dr. Stearns will select new and promising areas for research, contribute to the direction of research in these areas, and will be free to conduct his own investigations. In addition, he will continue to take an active part in scientific and trade association activities related to the interests of the organic chemicals industry.

Dr. Stearns is internationally known for his contributions to the chemistry of color and textiles. He has published 100 scientific papers, has been issued 20 patents for his inventions, and is the author of "The Practice of Absorption Spectrophotometry," a book being published by John Wiley and Sons. Scientific honors awarded him include the Olney Medal from the American Association of Textile Chemists and Colorists, and the Godlove Award from the Inter-Society Color Council, of which he is a life honorary member.

KARL FREUND DIES IN HOLLYWOOD

From the Los Angeles Times of May 7, 1969, we learn that Karl Freund, outstanding cinematographer (and founder in 1941 of his own instrument company -- Photo Research Corporation) died at St. John's Hospital in Santa Monica on Saturday, May 3, 1969. Funeral services were held May 6 at Mt. Sinai Memorial Park. He is survived by a daughter, Mrs. Gerda Martel, and three grandchildren.

As a long-time ISCC member, the News Letter has on several occasions carried items about Karl Freund, perhaps the most interesting being that which appeared in No. 151, 1961. This summarized an article by George J. Toscas in the International Photographer, October, 1960: "Meet Karl Freund -- Mr. Photo Research." Karl was a veteran cinematographer whose boast was that he had worked with practically all of the early Hollywood stars. In 1937 he won the Academy Award for black and white photography for The Good Earth, and was nominated on four other occasions. In early television he was chief photographer on the I Love Lucy, December Bride, and Our Miss Brooks shows.

In his own words he described his early career for the Toscas article. He started in Berlin in 1905, in 1909 he made a sound picture with Caruso, describing the technique as similar to today's play-back system used for musicals, a flexible shaft connecting the gramophone with the camera. It was an accident that suggested to him the idea of mounting cameras on dollies or cranes and installing a motor to turn the camera, a technique he first used in "The Last Laugh" with Emil Jannings. In "Metropolis" the background process shot was introduced. For partners of the early Triergon Corporation he developed their first film sound track -- from a roll of 100 foot negative -- not knowing, at the time, what it was. In 1927 he went to London with the Blatnerphone Corporation which had achieved synchronization by use of a 16 mm perforated steel tape. In 1928 he went to Paris where he was intrigued with an early color projection method that he took back to London with him where a showing of the process was arranged with Dr. Herbert Kalmus, president of Technicolor, which at that time was a 2-color subtractive process. To help develop an idea developed by Dr. Kalmus on a basis of this showing, Karl contracted with Technicolor to come to the United States where in 1929 a series of tests were made at the Astoria Studio in New York with John Capstaff of Eastman Kodak. By 1930 he was in Hollywood where, after Technicolor failed to produce satisfactory prints by the proposed method, Karl's contract was taken over by Universal Film Corporation -- the beginning of his Hollywood career as a motion picture cameraman. Karl worked for UFA and Messter in Germany, and for Fox, MGM, Paramount, Universal, and RKO in the United States.

A number of ISCC and OSA members who attended 1955 meetings of the OSA in Los Angeles will remember Karl and his wife Trudy for the party they gave on Sunday afternoon for a number of us at their ranch home in the San Fernando Valley. It was the year that the Ives Medal was given to Dr. Irvine Gardner, and Karl particularly wanted to honor him and a number of his other ISCC color friends from the East. The day before he had been one of the guests at a reception hosted by ISCC officers for ISCC West Coast members.

Whether Karl ever completed the book he said he was writing about his experiences we do not know. It would have been fascinating for -- as we said in the 1961 News Letter item -- he had met and photographed so many of Hollywood's greats and near-greats, and had taken part in so many firsts in the development and improvement of photographic techniques and instruments. Yet of all his accomplishments he seemed most proud of those in the scientific field. The development of photometric devices for use in motion picture photography led him to establish the Photo Research Corporation in 1941. (In the early 60's I remember a demonstration on television of how his spot photometer

could measure a tiny spot of suntan at some fabulous distance.) In late years he developed considerable concern about the future of his company, and I know he must have felt relieved of considerable responsibility when he completed arrangements with Kollmorgen in June 1968 for Photo Research to become a part of the Macbeth Color Group of the Kollmorgen Corporation.

He was a colorful, interesting, and creative individual.

Dorothy Nickerson

SMITHSONIAN GETS PIONEER COLOR TV

From the Washington Post of July 13 we learn that the television system -- from camera to receiver -- that "helped usher in color television on earth" is now ready for permanent display in the Smithsonian Institution's Hall of Electricity. It was presented to the Smithsonian in early July by its inventor, Dr. Peter Goldmark, president of CBS Laboratories.

It is this system that made the inaugural color broadcast by CBS on September 4, 1940; it is the system that was authorized in 1950 for color television broadcasting. But this was a field sequential system that made use of a spinning disc, and its great drawback was that it could not be seen on black and white sets, that is, without additional components. By the end of the Korean War, which had prevented mass production of the field sequential color sets, the number of black and white sets in use had grown to more than ten million; also during the war RCA demonstrated an all-electronic color system compatible with existing black and white sets; all of which led to an "historic about-face" by the FCC on December 17, 1953, when they authorized, as standard, the electronic "dot sequential" system. (News Letter No. 110 of Jan. 1954 carried a prompt reference to an authoritative article on this subject by Donald G. Fink.)

Along with the original equipment, Dr. Goldmark demonstrated at the Smithsonian some of what the POST article called "electronic grandchildren" of that first invention. These included a miniature color TV system that can transmit color pictures from inside the human body, also the camera carried by the astronauts on the Apollo 10 mission and scheduled for Apollo 11. (The medical application is the outcome of closed circuit TV applications by Dr. Goldmark that were first applied to internal medicine at the University of Pennsylvania Hospital.)

We are proud that this outstanding pioneer (and he is a pioneer in sound as well as in color) is a long-time member of ISCC.

REPORT OF THE SUBCOMMITTEE FOR
PROBLEM 22 -- PROCEDURES AND MATERIAL
STANDARDS FOR ACCURATE COLOR
MEASUREMENT

Joseph T. Atkins -- Chairman

All experimental data for Round Robin II, "Rigorous Calibrating and Operating Procedures for the GERS," have been received. There appear to be several serious discrepancies in the results, for which no satisfactory explanation can be offered at this time. Much additional study of the data is required.

Round Robin III (all full and abridged spectrophotometers) has been started. The instructions have been tested in actual use and the samples are currently in the first participant's laboratory.

Round Robin IV, (Measurement of Color Difference with Colorimeters or Spectrophotometers) is ready to begin. Samples have been selected, and the instructions tested.

ADDITIONAL ANNUAL MEMBER-BODY
REPORTS

REPORT OF THE AMERICAN ASSOCIATION OF
TEXTILE CHEMISTS AND COLORISTS DELEGATES,
ROBERT F. HOBAN, CHAIRMAN

During 1968, the Color Technology Committee sponsored the production of a new edition of the Glenn Colorule. This rule, consisting of two strips of swatches of dyed materials, was first made by James Glenn and F. T. Simon at Sidney Blumenthal & Company, Inc., which later became Burlington's Automotive Fabrics Division. Over the years, additional editions were made and distributed. Burlington Industries decided not to produce another edition after the last one was sold out a few years ago, and donated the dyed material to the AATCC. This material was then used to make the latest edition of the Glenn Colorule, now available for \$15.00 from AATCC Headquarters, P.O. Box 12215, Research Triangle Park, North Carolina 27709.

The Color Technology Committee also made significant advances on the preparation of a glossary giving the relation of dyers terminology to colorimetric terms. This we hope will be completed in 1969.

The Light Fastness Committee worked extensively with the National Bureau of Standards and determined the fade on the L-4 Blue Standard equivalent to the 4 step on the Grey scale. It then determined the standard fading hour at the NBS required to give this change. Although this work was not complete, a final report is expected to be ready in 1969. Work was also done on

the evaluation of new lots of L-5 and L-6 wool standards.

Several new test methods were published which use the grey scale. They were:

Colorfastness to Water & Light: Alternate Exposure

Colorfastness to Water (High Humidity) & Light:
Alternate Exposure

Carpet Soiling: Visual Rating Method

Carpet Soiling: Service Soiling Method

Carpet Soiling: Accelerated Soiling Method

Attached is a bibliography of articles on dyes and textiles appearing in the 1968 American Dyestuff Reporter and the Journal of the Society of Dyers and Colourists.

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A Study of Laboratory Color Matching, Hudson-Mohawk Section, 57, 9, April 22, 1968, p89 (P313).

First Book on the Art of Dyeing Appears in English Translation, 57, 12, June 3, 1968, p15 (427).

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Colour Vision, K. McLaren, 84, 4, May 28, 1968, p230.

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Some Observations on the Relation between Dyeing Properties and Fibre Structure, R. McGregor and R. H. Peters, 84, 5, June 17, 1968, p267.

I -- An Introduction to Instrumental Measurements of Colour Difference in Relation to Colour Tolerance, E. Coates and B. Rigg, 84, 9, October 22, 1968, p462.

II -- Colour-difference Measurements in Relation to Visual Assessments in the Textile Field, E. Coates and F. L. Warburton, 84, 9, October 22, 1968, p467.

REPORT OF THE AMERICAN SOCIETY OF PHOTOGRAMMETRY DELEGATES, JOHN T. SMITH, CHAIRMAN. Report prepared by Clarice L. Norton

(Ed. Note: It is with no little embarrassment and with apologies to ASP that your editor presents below the

correct ASP annual report. The one which appeared in N.L. #199 was printed in error.)

The American Society of Photogrammetry is a non-profit organization of earth science inter-disciplinary members who perform research in this field or who work in the designing and manufacturing of mapping equipment. There are some 6,000 members.

For many decades black and white aerial photography has been the source from which geometric terrestrial data has been acquired. The field of remote sensing, however, is adding more information as the spectrum used by photogrammetrists is extended. This information is being obtained with the use of the near photographic infra red and the thermal infra red (to some 14 microns), radar, and of maximum importance, photographic color.

The equipment used by photogrammetrists is accurate and precise. It includes aerial cameras, processing equipment, printing equipment, optical projection equipment, and optical-electronic rectifiers with computer controls. There are also simple optical-mechanical units and many new ones which are conversely, extremely complex, having automatic sensors, precise optical-mechanical measuring facilities, and electronic outputs. Usually these are computer controlled.

The goals of precision mapping are high. Photogrammetrists talk with certainty about positional accuracies in linear dimensions of microns and angular dimensions of seconds of arc.

Several years ago the Color Aerial Photography Committee of ASP was formed with the immediate purpose of proving the geometric accuracy of color aerial photography. The effort was an extensive one involving close cooperation with government agencies and manufacturers. The agencies contributed aircraft, mapping cameras, mapping equipment, and made precise ground surveys for geometric control and analysis. Manufacturers contributed color film, color diapositives, and experienced personnel. Both government and industry contributed thousands of hours of labor and the guidance of experts.

The result of this effort was proof that under photogrammetric control, color aerial photography not only supplied much more information than black and white but was equally accurate. The study led to the writing and publication of the ASP Manual of Color Aerial Photography, a publication which is an excellent reference source for engineers on color photogrammetric equipment and techniques. It can also serve as a technical, college-level text book. The program in ASP is now reaching out to investigate every phase of the color system which will result in higher accuracy and more positive control.

The applications of color photography are many.

Photogrammetrists are deep into earth development problems in underdeveloped countries. Simultaneously, they are fundamentally concerned in space exploration with the various tasks of space mapping and the acquisition of earth science data, from the design of space cameras and satellite communication techniques, down to the final mapping product.

Our society has become a member of the ISCC with the knowledge that we will be able to benefit from your society's experience in solving many technical problems of color. We welcome association with you and your guidance in helping us solve some of our own color problems. We hope, also, that your association with the ASP will benefit some of the members of the ISCC.

REPORT OF THE AMERICAN SOCIETY FOR
TESTING & MATERIALS DELEGATES, GEORGE
W. INGLE, CHAIRMAN

Interest in color and color-measurements continues to be active in ASTM. If there is any discernible long-term trend, it is from measurements of color per se to those of geometric factors -- such as gloss, metallic sheen, and other directional reflection effects -- which interact with color to define the broader parameter of appearance.

In Committee D-1, the proposed revision of Method for Instrumental Evaluation of Color Difference of Opaque Materials (D 2244), incorporating MacAdam and CIE UCS Color Space Systems, is progressing minus section dealing with digital computation of MacAdam color difference equation, pending an opportunity to revise this section extensively. The group will continue to study color difference equations now in use in industry and also those recommended for study by the CIE. Further discussion was held on direction of development of procedures to be used for selection of color tolerances.

Committee D-1 (Paint, Varnish, Lacquer and Related Materials) is revising Method D-1729-64, "Visual Evaluation of Color Difference of Opaque Materials." This method is very similar to that developing in ISCC Problem 21 Subcommittee on "Visual Evaluation of Small Color Differences." The ASTM method has been submitted to Committee D-1 for approval.

In D-13's Task Group reviewing D-1684-61, "Recommended Practice for Lighting Cotton Classing Rooms for Color Grading," there is concern for information to set more realistic tolerances for color temperature, especially in the 7500°K range. It appears likely that present 200°K tolerance is beyond the capability of present lighting technology.

Among those activities of greater interest -- in ASTM E-12's Subgroup 4, "Appearance of Metallic Surfaces," methods are being developed and evaluated, but there is

need for more fundamental work.

In E-12's Task Group 9, revision of E-308 "Recommended Practice for Spectrophotometry and Description of Color in CIE 1931 System" continues. Current objectives are to rationalize differences in definitions with those of CIE itself, and to provide an adaptation of E-308 suitable for adaption by ISO, via its Technical Committee 61 on Plastics.

Also, E-12 is planning for a symposium during the Toronto 1970 Annual Meeting of ASTM to "brainstorm" definition of what will be new in the field of appearance measurements during the decade to follow. High caliber speakers are sought; ISCC cooperation and support is solicited.

REPORT OF THE SOCIETY OF PLASTICS
ENGINEERS, INC., DELEGATES, M. H.
GERSON, CHAIRMAN

Color activities within the Society of Plastics Engineers are co-ordinated by the COLORING AND FINISHING OF PLASTICS PROFESSIONAL ACTIVITIES GROUP UNDER THE CHAIRMANSHIP OF MR. WILLIAM LONGLEY. Two of the SPE delegates serve as officers of ISCC: Dr. Fred Billmeyer, Jr. is President and Mr. W. N. Hale is a member of the Board of Directors.

As is its annual practice, a program on "color problems" in plastics was presented at the SPE Annual Technical Conference in May, 1968 in New York under the sponsorship of COFINPAG. While special attention was paid to specific problems in the coloration of specific plastics, general subjects in the field of color matching and instrumentation for plastics color problems were thoroughly discussed.

COFINPAG also sponsored a Regional Technical Conference in Cleveland, Ohio on January 21, 1969 on the subject of Coloring of Plastics. One half of the program was devoted to specific plastics problems; the other half was devoted to the capabilities of instruments for solving today's color problems. The latter portion of the program was presented as a panel discussion consisting of a panel of specialists from the various manufacturers of color instrumentation equipment and moderated by Mr. Max Saltzman. This RETEC program included a comprehensive review of performance of 15 color instruments by Dr. Billmeyer. The work was performed at Rensselaer Polytechnic Institute.

In addition to the above papers published in the "Preprints" for the respective meetings, the SPE Journal published the following papers on the subject of "color":

1. "Coloring and Finishing -- Technical Progress" by R. A. Charvat, June, Page 38

2. "Dichroism of Transparent Colorants" by T. G. Webber, September, Page 29

3. "Polymeric Dye Receptors for Polypropylene Fiber" by M. Farber, August, Page 82

BOOK REVIEW

THE USE OF COLOR IN INTERIORS

by Albert O. Halse

McGraw-Hill Book Company
New York, San Francisco, 1968

The Use of Color in Interiors by Albert O. Halse offers the reader a well-organized overview of the subject. Underlying facts and factors, Color Theory and Practice are briefly described to fit the scope of a text addressed to students and practitioners of the specific field.

Although this reviewer questioned why the Baroque, as a vital part of the stylistic development in the Western World, had not been mentioned, and why the first 60 odd years of this century had been covered in 6 brief lines, the historical survey is good reading.

The Second part covers the important aspects of Color Theory and Design in a form that should be understandable by the readership, although some of its terminology is not quite consistent. The author's obvious familiarity with the ISCC-NBS Color Names Dictionary does not prevent him from speaking of a "deep value, such as deep Violet" shown on the "Chromatic" Circle. (Plate III). The Color there seems to the reviewer closer to vivid Violet (Centroid 205) and strong Violet (Centroid 207).

Deep Violet, as understood in the ISCC-NBS Color Names Dictionary would be obviously of too low a value to fit into his "12 Hue Chromatic Circle" as a representative Violet.

In a discussion on Color Schemes it is quaint to find this statement: "The simplest of all schemes is that in which one or two colors are used with black, white or gray." The reader may get confused by this, as the author describes earlier the Ostwald as well as the Munsell system, where he places correctly these three neutrals into their respective places.

While speaking of Ready-Mix paints, he writes: "Furthermore, it sometimes happens that various batches of ready-mix paint will vary as much as a couple of shades." "The color chip may be a soft gray blue, but the paint purchased may be a brighter or deeper blue." The reviewer feels that the author could have well illustrated a point here in clarity of terms as well as in showing by an example how the attributes of a specific color can be described. Else-

where the author qualifies the Munsell system of color notation as "intricate." By using Munsell Notations he could have made his point even clearer.

In describing a piece of walnut the author writes: "..... The background may vary from reddish brown to yellowish brown, while the graining may be blue brown." It is hard to believe that the reader would find this of much help.

Even if, at the time when the book was being prepared, the newer fluorescent lamps were still hard to find, mention could have been made of their existence. Sylvania's Natural and Incandescent-Fluorescent, Westinghouse's Sign White and Living White, Duro-Test's Optima, General Electric's Chroma 55 and 70 are new tools for the designer.

In the discussion of Light reflectance characteristics, it might have been helpful to mention the Munsell Chart Photometer as being easy to use for evaluating reflectances of building materials and finishes in situ.

Taken as a whole, the book is well written and beautifully presented. It should serve well as a practical text for students and practitioners of Interior Design. Well chosen interiors are shown in excellently printed color plates, and a good number of black and white illustrations are placed throughout the text. Even if the listings of some materials may be too quickly out-dated for a book of such permanent stature, they will help as general information.

Alexander F. Styne

ASTM RECOMMENDATION ON FLUORESCENT WHITENING AGENTS

(The following information release was prepared by P. S. Stensby, Chairman TG-5, ASTM D-12/T-5.)

To whom it may concern:

The ASTM D-12/T-5/TG-5 committee on "Fluorescent Whitening Agents" was re-established late in 1967. D-12 is the committee on Soaps and other Detergents; T-5 is the sub-committee on "Physical Testing."

The first task of the "Fluorescent Whitening Agents" committee was to consider the term most properly describing the chemicals previously called optical brighteners, fluorescent bleaches, optical whiteners, white dyes, etc. The purpose was to unify terminology and arrive at one term acceptable to most workers concerned with these types of chemicals. A standardization of terminology was regarded as highly desirable in order to ease literature search, allow proper oral and written communications, and avoid misconceptions.

A questionnaire with five suggested terms (listed below) was sent to over 60 companies (suppliers and users), trade organizations (dyes, textiles, detergents, fibers, papers, etc.), color specialists, color instrument producers, research organizations, and governmental agencies in U.S., Canada, England, and Sweden. In addition, the questionnaire was published in several trade journals. For reasons given, the term "Fluorescent Whitening Agent" was favored by TG-5.

Comments received from representatives of all industries and countries were reviewed by TG-5. The majority favored the term "Fluorescent Whitening Agent." This term (or in some cases "Fluorescent Whiteners") was with one exception supported by the responding FWA producers. The detergent industry gave full support to "Fluorescent Whitening Agent." Representatives for the paper industry also supported the latter term. The "Fluorescent Whitening Agent" (or "Fluorescent Whitener") name was also supported by world renowned color specialists and scientists. Both AATCC and The Society of Dyers and Colourists prefer to use the "Fluorescent Brightening Agent" term.

The above responses and the following factors were taken into account by TG-5 before voting on this matter:

(1) Fluorescent whitening agents are mainly used to improve whiteness. If "brightness" (=lightness) is that expressed in L, Y, or R_d values, addition of FWA to a near-white substrate will not or only slightly affect the "brightness" of the substrate. Consequently, the term "Fluorescent Brightening Agent" is not proper.

(2) The glossary on terminology and definitions being developed by the ISO/TC6/SCI committee lists under terms agreed upon internationally: "Fluorescent Whitening."

(3) The representatives of the paper, detergent, and FWA industry were in favor of "Fluorescent Whitening Agent." The paper and the detergent industry in the U.S. (and probably also world-wide) consumes around 70-80% of all FWA sold.

(4) The strong support of the suggested term by color scientists.

The TG-5, T-5, and D-12 committees each successfully accepted the term "Fluorescent Whitening Agent."

Based on the above, we would appreciate your cooperation in standardization of the terminology and the use of the term "Fluorescent Whitening Agent" in future publications, discussions, glossaries, and other communications.

Suggested Terms Listed in the Questionnaire and Comments on Each.

1. Optical Brightener -- Any agent (fluorescent or non-fluorescent) which increases the observed brightness of a substrate is an optical brightener. This term therefore does not accurately describe the phenomenon of interest to TG-5. This is especially true since the agents actually being used do not increase brightness (Y, L, or R_d), but do produce a change in chromaticity.

2. Whitener -- This term is also too general, since any bleaching agent may be considered a whitener.

3. Fluorescent Brightener -- This term is considered undesirable since any fluorescing pigment which increases the observed brightness of a substrate is a fluorescent brightener.

4. Fluorescent Whitener -- This is considered a more appropriate term since it encompasses the phenomenon of fluorescence and whitening, and excludes colored fluorescent pigments.

5. Fluorescent Whitening Agent -- This term seems most appropriate, since it implies that both fluorescence and whitening are produced by incorporating an additive, which cannot be misconstrued as a fluorescent pigment.

POSITION OPENINGS IN DEPT. OF AGRICULTURE

Research scientists to work in color research; psychophysics, spectrophotometry, colorimetry, and spectroradiometry. M.S. or Ph.D. in physics and/or chemical sciences. Salary range: \$9500 to \$15000. Write John N. Yeatman, Director, Color Research Laboratory, U.S. Department of Agriculture, ARS, MQ, Beltsville, Md. 20705.

CMG MEETING SCHEDULED FOR MIAMI BEACH

The next meeting of the Color Marketing Group will be held at the Marco Polo Hotel in Miami Beach, Florida, on Nov. 17-18, 1969. Chairmen of the meeting are Beatrice West, Beatrice West Studios, Inc., and Everett Call, National Paint, Varnish, and Lacquer Association.

Further information can be obtained from:

Everett Call
1000 Vermont Ave., N.W.
Washington, D.C. 20005
(202) 462-6272

THE COLOUR COUNCIL OF CANADA

Recent meetings of the Council, as described in Colour Comments:

March 11, 1969. A visit to the unique Ontario Hydro Museum of Electrical Progress Depot, whose collection portrays with actual products the development of electrical power from 1880 to 1969. Host was Grant E. Davidson, an illumination engineer and an individual member of ISCC.

April 8, 1969. A presentation on "Holography" by Dr. William Victor Tilston, Director of Research at Sinclair Radio Laboratories.

May 13, 1969. A presentation by Mr. Jack Apramiam, Master Dyer and owner and operator of Gemini Rug Dyers in Toronto.

BRITISH IES LAUNCHES NEW JOURNAL

A new quarterly journal Lighting Research and Technology has been launched by the British Illuminating Engineering Society. It will be essential reading for all engaged in lighting research and application and for those concerned with related subjects, such as vision and optics.

It is intended that the new journal will become the international medium for reporting the results of research on light sources, lighting techniques and allied subjects, in all countries, in addition to papers and Transactions of the British IES.

Page size of the new journal is international A4. Subscription rate is £5.5s (\$12.60) per year. Orders should be sent to:

The Illuminating Engineering Society, York House, 199 Westminster Bridge Rd., London, S.E. 1. England.

NEW NEWSLETTER ON COLOR AND DESIGN

Dr. Deborah T. Sharpe has reported that she has organized a group of scholars in the field of color and design to publish a quarterly newsletter this fall.

A WORD FOR THE GREEKS

Sir Harold Nicholson, British scholar and (Labour) M.P., writes in his entertaining book "GOOD BEHAVIOUR" (Doubleday & Co., 1956): "It was thought natural for (Greek) men to dye their hair, even if they chose a bright colour such as sepia or gold."

This statement would seem to affect the speculation (ISCC N.L. #197) that the Greeks were color-blind.

- - -

In connection with the use of color among the ancient Greeks some further research indicates that, in society and on the stage, the colors chosen for costumes had a sort of protocol.

Young men in Greek comedies wore red clothing; old women wore green or light blue, except priestesses, who wore white, or linen (the latter perhaps natural).

The Greeks were intelligent, and articulate; if they were color-blind they surely would have been conscious of it (since Egyptian art, with all its colors, was familiar to them).

Industry, which has been, with us, an important source of color study, was almost unknown among the Greeks; the familiar red of Greek vases, popular with native Greeks and their neighbors, was perhaps the only available color which would stand up to the firing in the kilns.

It seems almost certain that the reticence of the Greeks in regard to color was a matter of choice. Their supreme mastery of form shows that they were capable of acuity in measurement. With none of our techniques of color measurement, it seems probable that they preferred to abstain from an art which they could not control.

Henderson Wolfe

THE PENULTIMATE PHASE OF THE COLOR EXPLOSION?

(Reprinted from "Ariadne" in the April 24, 1969 issue of NEW SCIENTIST, with permission.)

"My chameleomimic friend Daedalus earned the gratitude of countless mothers-to-be when he introduced DREADCO's 'maternity wool' (Regd.) dyed with litmus. Thus the broody regiments of relatives could churn out the bootees and cardigans serenely knowing that, when the sex of the awaited infant was announced, an acidic or alkaline dip could turn the garments the appropriate pink or blue demanded by tradition. Daedalus has now extended the technique with all the many colour-tests elaborated by chemists over the years, solving the black or white tie, black or brown shoes, lounge or sports jacket dilemmas, and giving variety to the most basic wardrobe. But chemical treatment is too cumbersome for such instantaneous emergencies as the encounter between two ladies of identical garb. Daedalus is therefore developing a special range of ultra-violet fluorescing pigments to be stimulated by this radiation light-piped through a garment's fibres by UV generators in the buttons. Three pigments, each radiating a primary colour in response to a different UV wavelength, give complete and instant hue-control at the touch of a button.

"Dazzling possibilities of expressing one's emotions in colour as do the stickleback, chameleon and baboon, are opened up; and as publicity DREADCO's film unit is making a psychological Western around the convention giving the goodies and baddies white and black hats respectively. Hats slowly darken as their owners drift to the bad, or flash up brilliant at the reassertion of conscience; the film in fact establishes a colour-code for all the usual emotions. If the idea catches on, this new release from the damaging repression of displays of feeling will make possible a happier and more open society. And how delightful for novelists to be able to vary the cliches and write, for example, 'A tender blush suffused her pastel nightie' or 'Conflicting emotions raced across his hat.'"

AUSTRALIAN ALICE

(The following adaptation of Lewis Carroll's work is by R. F. Cane, Head of the Chemistry Department at the Queensland Institute of Technology. Professor Cane described his adaptation as a "light" addition at the end of the first R. K. Murphy Address at the University of New South Wales. The address was entitled "Color: Variations on a Chromatographic Theme.")

"Have some extra-red wine" said the March Hare. "I don't see any wine" Alice remarked. "There isn't any" said the March Hare. The Hatter looked up and bel-lowed, "I don't like the colour of your dress. I par-ticularly don't like red."

"It's not red" said Alice, with some anger, who had been taught that personal remarks are rude. "My dress is rose coloured."

"You obviously know absolutely nothing about colour" said the Hatter, "There are hues, tints, shades and tones and rose is not any of these. The colour of the colour is entirely characterised by the dominant wave length of the reflected light and that of your dress is red."

"All I know" said Alice "is that my mother, who is very artistic said it was rose-coloured with a touch of blue. I don't think ---"

"Then you shouldn't talk" said the Hatter.

The small voice of the Dormouse was then heard to say "Neither of you seems to be very logical. Colour is made up of three components and to really understand it, you have to think in terms of imaginary lights, viewed by an imaginery person, who is normal. Actually, the standard observer is not a person at all but a column of figures. The imaginary person divides divides the colour into three parts, but one part is not coloured and this is real. The coloured parts are absolutely imaginary and can never be seen. If you had colours which were real then you would have to use negative lights and then it wouldn't be simple any more."

AS WE SEE IT

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■ One of the little freedoms left to us in this era of traffic lights, income taxes, no-smoking signs, diet consciousness, the draft, and anti-smog ordinances, is the freedom to tune our color sets any darned way we please.

Now they're going to take that away from us. Not by law but by a subtle appeal to our desire to conform.

■ Viewer A likes red flesh tones when he adjusts his set. Viewer B leans to yellow. Viewer C likes a bluish cast while Viewer D goes for a magenta look. Each owns -- or has at least made a down payment on -- his set. No one, until now, has challenged his right to color choice; no one has used his selection of color to blacken his reputation.

It was Dr. Boris Townsend, research chief of a British TV broadcasting outfit, who recently proclaimed that the color theory of Prof. Max Luscher was valid. "It has been broadly proved," said Dr. Townsend.

■ Professor Luscher's theory is quite simple. If a viewer adjusts the picture so that it is too red, it can indicate that he is lustful. If too blue, he overeats. If too yellow, he's overhopeful. Too magenta? He may be a homosexual.

Psychologists have long held that colors connote particular moods. As reported by Dr. Ernest Dichter, the guru who tells advertisers why people buy specific products, "Red connotes a mood of passion; yellow -- intuition; blue -- intellectualism; brown -- earthiness; black -- danger; white -- purity; green -- emotional agitation, envy; pink -- exotic; and purple is associated with martyrs."

■ Whether Luscher is transferring the color-mood ideas of the psychologists to TV or starting his own color-meaning school, we don't know. We just wish they'd all let us tune our sets in peace -- without worrying about what it means if the set is too red, or yellow or, heaven forbid -- magenta.

GREEK POWER IN SALT LAKE

Reprinted from the March 10, 1969 issue of Chemical and Engineering News, with permission.

When Edith Hamilton sat down to write "The Greek Way," the first sentence that came out was, "Five hundred years before Christ in a little town on the far western border of the settled and civilized world, a strange new power was at work." The power is with us still, though diffused and attenuated, and a trace of it seems to have infected the fifth grade at Libby Edwards

School in Salt Lake City. A lass in that grade by the name of Margaret was assigned in January to set down her views on "Why the sky is blue" and "What I think chemistry is." She did so, and News Scripts has come into possession of the results, courtesy of chemist W. S. Burnham of Duke University:

Why the sky is blue: "The sky is blue because maybe God wanted it to be blue because he liked that color or because it went pretty with the earth or because if it was yellow you couldn't see the sun or if it was white you couldn't see the clouds or if it was black you couldn't see or maybe couldn't see the clouds sometimes because they'd be black because it was going to rain and it couldn't be brown because maybe you couldn't see the trees or the brown buildings and it would be too dark to. So I think the sky is blue because it isn't too dark or too light and it goes with the earth."

What I think chemistry is: "I think chemistry is something that you work with a lot of things and you find out things and can make a lot of things. But sometimes things don't work and you get mad and you try to find out what's wrong. Sometimes you do things wrong like you try to make something look new but instead it turned a different color. Or you set a mixture in the freezer and it blows up. Or sometimes you go by a mixture to add so when you get home you spill it and then you start to get mad and spill all the other mixtures. So I think chemistry is just a lot of trouble."

REPRINT ENCLOSED WITH THIS ISSUE

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