

# INTER-SOCIETY COLOR COUNCIL

## NEWS LETTER

# 167

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ANNUAL MEETING ISSUE  
REPORT OF THE 32ND ANNUAL MEETING  
STATLER HILTON HOTEL, NEW YORK, NEW YORK  
MARCH 11, 12, 1963

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"COLOR MEASUREMENT--  
FROM DESIGN TO PRODUCTION"  
AT 32ND ANNUAL MEETING

The topic of the symposium for the 32nd Annual Meeting was "Color Measurement--from Design to Production." The moderator for the panel of four speakers was Dr. Fred W. Billmeyer, duPont.

Max Saltzman, National Aniline Division, Allied Chemical Corporation, discussed the topic, "Color Measurement with the Eye and Other Instruments." "Instrumental Color Specification" was the topic of a lecture by Francis L. Wurzburg, Interchemical Corporation. Norman Pugh, Sears Roebuck & Company, talked about "Measuring Communication Effectiveness in Industrial Color Control." The last speaker on the seminar, Carlton B. Spencer, Styling Consultant, Bloomfield Hills, Michigan, reviewed "Automatic and Architectural Color Production from Premise to Product."

In addition to the symposium, the 2-day meeting included subcommittee meetings Monday, March 11, and the business meeting Tuesday, March 12, including reports of officers, committees, and delegations. Those reports are printed in this issue of the Newsletter.

David L. MacAdam, recipient of the Godlove Award (see Newsletter No. 164, March-April 1963), received a warm response from members who were present to celebrate the presentation. Dr. MacAdam, the fourth recipient of this award, was selected by Deane B. Judd; Dorothy Nickerson; and Ralph Evans, Chairman. Candidates for the award are reviewed every two years. The award was established in 1956 when the Inter-Society Color Council accepted a fund established by Mrs. I. H. Godlove in memory of Dr. I. H. Godlove, Editor of the Newsletter for 16 years and former Chairman of ISCC (as the president was then called).

Professor Isay Balinkin, University of Cincinnati, presented the banquet lecture, "Interaction with Light, Matter, and Consciousness." Dr. Balinkin's lecture was scheduled for the 1962 meeting, but because of an illness he was prevented from presenting it. The audience was, as usual, enthralled by Dr. Balinkin's lecture. Dr. Balinkin's performance again demonstrated that his lectures are appealing alike to novices, amateurs, and masters.

The meeting arrangements, the program, and the schedule were exceptionally well planned. The excellent manner in which the program progressed was due to the efforts of Max Saltzman, Helen D. Vincent, Fred W. Billmeyer (Chairman, the Program Committee), and their assistants.

ANNUAL REPORT OF THE  
BOARD OF DIRECTORS,  
RALPH M. EVANS

The Board of Directors has held three regular meetings since the last annual meeting. On June 17, 1962, the Board of Directors held a meeting at Howard Johnson's Hotel, Flint, Michigan. Mr. Kiernan appointed the Godlove Award Committee to select the recipient for this award in 1963 as follows: Ralph M. Evans, Chairman, Deane B. Judd and Dorothy Nickerson. It was decided that the 1963 symposium should be on instrumentation, and Dr. Fred W. Billmeyer, Jr. was appointed program chairman. Mr. Evans recommended that a committee on Tutorial Papers be appointed to plan one paper for each annual meeting with possible subjects such as "Afterimages" and "Metamerism." The Board agreed and suggested a tutorial paper for the 1963 meeting on "Color Instrumentation." Mr. Hunter suggested that a color calendar of annual meetings of member bodies be published in the News Letter and agreed to compile the information. Mr. Kiernan recommended that the additional material in the By-Laws on color symposia, etc. be transferred to the membership list as these booklets were reprinted so that it could be kept up-to-date more readily. The Board visited Ralph Pike's Color Laboratory at Du Pont in the afternoon.

On October 2, 1962, the Board met at the Sheraton Hotel, Rochester, N. Y. It was noted that John Wiley and Sons have agreed to publish the report of Problem 20 with the probable title of "Color, A Basic Guide to Facts and Concepts" and final details would be worked out soon. Dr. Fred Billmeyer submitted a preliminary program for the 32nd Annual Meeting. Mr. Kiernan reported that he had appointed Mr. Calvin Hathaway of the Cooper Union Museum and Mr. F. L. Wurzburg, Jr. co-chairmen for the 1964 meeting that will be held in New York in cooperation with the Cooper Union Museum. The editor of the new magazine "Color Engineering" met with the Board to discuss possible cooperation between the Council and the magazine.

On March 10, 1963, the Board met at the Statler Hilton Hotel, New York City. The report of the Treasurer and of the Finance Committee were approved and recommended to the voting delegates for favorable action at the annual business meeting. Plans were discussed for the 33rd Annual Meeting that will be held in New York on May 4 and 5, 1964.

REPORT OF THE SECRETARY  
RALPH M. EVANS

The Inter-Society Color Council now consists of 29 member bodies with 205 delegates and 425 individual members. Twenty-three new members were approved at the June 17 Board meeting and nine at the October 2 meeting. Their names will be listed in the published version of this report. It is with regret that we report the death of Dr. Martin Fischer, University of Cincinnati, a long-time member of the Council.

During the year the membership list was revised and sent to the membership. The revised By-Laws have been printed and are being mailed at the present time. A special issue of the DuPont Refinisher News was sent out, courtesy of Ralph Pike. The manual "Attitudes on Color and Light in Relation to Residential Interiors and Exteriors" by Walter C. Granville was mailed to the membership through the courtesy of the American Marietta Company.

A copy of the Interim Report of Problem 14 Subcommittee "The Colorimetry of Transparent Materials" was approved by the Board of Directors by letter ballot who recommended that the secretary send copies to the voting delegates for their consideration and approval. A total of 51 ballots were returned to the secretary's office and all approved with several recommending editorial changes which can be made before publication. The secretary therefore reported to the Board of Directors that this report stood approved by the voting delegates.

REPORT OF THE TREASURER  
NORMAN MACBETH

The Treasurer submitted a report from Gremmel and Wuerfel, accountants, who had examined ISCC records for 1962. This report, on file in the Secretary's Office, is summarized as follows.

Balance Sheet as of December 31, 1962

ASSETS

Cash

The Columbus Trust Company	
New York Savings Bank	\$ 8,388.35

Investments

6,024.24

Dues Receivable - Individual Members	\$200.00	
Member Bodies	210.00	410.00

Accounts Receivable - Centroids	252.50	
Newsletter	4.00	256.50

256.50

TOTAL ASSETS

\$15,079.09

LIABILITIES AND SURPLUS

Dues Paid in Advance

\$ 24.00

+ Surplus

Balance, January 1, 1962	\$12,792.58
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Add: Excess of Income over

Expenses - Current Year	2,262.51
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Balance, December 31, 1962	
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15,055.09

TOTAL LIABILITIES AND SURPLUS

\$15,079.09

Statement of Income and Expenses for Year Ended December 31, 1962INCOME

Dues		\$3,512.00
Publication Sales		
News Letters	148.00	
Bibliography	26.25	
Centroids	252.50	
Miscellaneous	<u>289.10</u>	715.85
Interest and Dividends		470.00
Annual Meeting		<u>361.94</u>
TOTAL INCOME		5,059.79

EXPENSES

Secretary's Office	51.27	
Treasurer's Office	93.47	
Newsletter	1,876.95	
Miscellaneous Publications	774.96	
Discount on Foreign Checks	<u>.63</u>	
TOTAL EXPENSES		2,797.28

EXCESS OF INCOME OVER EXPENSES \$2,262.51

1962 Budget Analysis

	<u>Budget</u>	<u>Expenses</u>	<u>Under or Over Budget</u>
President's Office	\$ 100.00	\$ 0	\$ 100.00
Secretary's Office	100.00	51.27	48.73
Treasurer's Office	100.00	93.47	6.53
Newsletters	2,400.00	1,876.95	523.05
Special Publications	920.00	774.96	145.04
Annual Meeting	100.00	- 361.94	461.94
Contingency Fund	<u>160.00</u>	<u>0</u>	<u>160.00</u>
TOTALS	<u>\$3,880.00</u>	<u>\$2,434.71</u>	<u>\$1,445.29</u>

## I. H. Godlove Award Fund

Statement of Receipts and Disbursements for Year Ended December 31, 1962

Balance, January 1, 1962	\$ 975.58
Receipts	<u>25.00</u>
TOTAL	1,000.58
Disbursement	0
Balance, December 31, 1962	<u>\$1,000.58</u>

REPORT OF THE FINANCE COMMITTEE  
AND RECOMMENDATIONS FOR A BUDGET  
FOR THE YEAR - 1963

An examination of the Inter-Society  
Color Council Treasurer's report for  
the fiscal year, ended December 31,  
1962, discloses that the I.S.C.C.

has a surplus, as of December 31, 1962, of \$15,055. It further discloses that the income for this calendar year amounted to \$5059. This was unusually high because of the continued sale of Centroids, resulting from the excellent, working arrangement which the I.S.C.C. has had with the Munsell Color Company, and also a result of the continued sale of other publications of the Council.

Further, the last annual meeting (1962) resulted in a small net profit instead of an expense for the Council.

Expenses were unusually low for the following reasons. In the year 1962, there were only five (5) Newsletters instead of six (6) and we had allowed a budget of \$920 for Special Publications, primarily comprising the membership list and the By-Laws. The membership list was completed at a cost in excess of \$700. The By-Laws, however, will not be charged until 1963 as they are just presently ready for distribution.

The annual meeting actually turned in a profit of \$361.

Total expenses, therefore, were \$2797. The I.S.C.C. had an excess of income over expenses, therefore, in the amount of \$2263.

For 1963, the Finance Committee has estimated Income as follows:

425 Individual Members @ \$6.00 each	\$2550.
29 Member Bodies @ \$35.00 each	1015.
Newsletter Subscriptions	140.
Interest and Dividends	500.
Publication Sales	<u>100.</u>
TOTAL ESTIMATED INCOME	\$4305.

The Finance Committee recommends the following budget for Expenses:

President's Office	\$ 100.
Secretary's Office	100.
Treasurer's Office	100.
Newsletter	2,400.
Special Publications	500.
Annual Meeting	400.
Contingency Fund	<u>705.</u>
TOTAL ESTIMATED EXPENSES	\$4,305.

With regard to investments, \$3,000 in Treasury Notes will mature on February 15, 1963 and the Finance Committee recommends that this sum be deposited in the Council's savings account, New York Savings Bank, and further, that in view of the liquid position of the Council, that \$1,000 be withdrawn from the Council's regular checking account at the Columbus Trust Company, Newburgh, New York and added to this sum, making a total of \$4,000 being deposited at the New York Savings Bank.

On the basis of this recommendation, the interest and dividends for the year 1963 will be higher than in 1962.

The Finance Committee requests approval of the recommended budget and the acceptance of this report.

Respectfully Submitted:

Norman Macbeth, Chairman  
Dorothy Nickerson  
Roland E. Derby, Jr.

REPORT OF MEMBERSHIP COMMITTEE  
WALTER C. GRANVILLE, CHAIRMAN

No report.

PROBLEMS COMMITTEE  
REPORT

Subcommittee on Problem 2, Color Names,  
Kenneth L. Kelly, Chairman

Activity of ISCC Subcommittee on Problem 2, Color Names, has been limited to the Chairman's assistance in developing the ISCC-NBS centroid colors by Tobey Color Card Company. All samples submitted have been measured. Production of the centroid-color charts has been delayed but it is hoped that they will be available later this year. Production has begun on the 161 centroid colors which have met the specifications. An NBS Technical Note, "Coordinated Color Identifications for Industry," involving the ISCC-NBS method of designating colors has been published (November 1962), and a paper entitled "The Development and Applications of the ISCC-NBS Centroid Colors" is being prepared for presentation before the Symposium on Dyes and Pigments in Coatings and Plastics of the ACS in September. The subcommittee has continued to act in an advisory capacity to ISCC Subcommittees 23 and 17. A hand-made set of ISCC-NBS centroid-color charts is being used in a study of the colors of the giant mollusks in the Marshall Islands in the South Pacific. A new variable-lightness white to black background for the centroid charts has been developed by Tobey Color Card Company so that each centroid color will be displayed on a background of approximately its own lightness. Sample charts were exhibited. A joint meeting of ISCC Subcommittees 2 and 23 (The Expression of Historical Color Usage) was held.

Subcommittee on Problem 7, Methods of Color Specification, Francis Scofield, Chairman

Problem Subcommittee 7 is charged with the revision of the report on American color specifications, originally published in 1955. Some progress on the revision of this report has been made, but more is planned. We expect to have a revision approved by the Subcommittee and ready for submission to the ISCC at their next annual meeting. Meanwhile, any suggestions for additions or corrections in the original report would be appreciated.

Subcommittee on Problem 10, Color Aptitude Test, F. L. Dimmick and C. E. Foss, Co-Chairmen

Subcommittee 10 on the Color Aptitude Test met as scheduled at 9:30 to 12:00 on 11 March 1963. About 20 delegates and members of the Council attended. These included the Co-Chairmen Foss and Dimmick; Mr. C. Homer Flynn, Secretary of FSPT; and Mr. Daniel Smith.

The first order of business was a report from Mr. Flynn and Mr. Smith on the present supply of tests and the procurement of a new supply. All of the original production of test sets, between four and five hundred, have been sold and a backlog of orders is building up. Mr. Flynn is therefore very anxious to push the production of a new supply.

Mr. Smith reported progress in the production of the new supply. He has obtained some of the required pigments and other materials and has begun making mixtures for end points of the series. He requested information on procedures and tolerances involved in producing the new series.

Other delegates and members in attendance at the committee meeting were interested in progress of the new sets and also presented a number of questions dealing with their use of sets already in hand. Much valuable information was exchanged.

The proposed new series designed to bring out other aspects of color aptitude were discussed briefly. Work on these new series has been postponed until the supply of the present version of the test has been replenished.

Mr. Foss described a new three-dimensional type of test for which he is preparing materials.

Subcommittee on Problem 14, The Colorimetry of Transparent Materials, R. C. Stillman, Chairman

The past work of this subcommittee has been concerned largely with a study of single number specification color systems. This study has been completed. A report covering the work done in the period 1954-1962 has been prepared and submitted to the Board of Directors and the voting delegates of the Council. The Delegates have accepted the report, and it will be published as soon as the best outlet is determined.

Many problems concerning the colorimetry of transparent materials are still unsolved. The direction that the work of this committee will take in the future has yet to be resolved.



Subcommittee on Problem 16, Standard Methods for Mounting Textile Samples for Colorimetric Measurements, Richard Landry, Chairman

The members of the Subcommittee on Problem 16 have been working on reports on five methods of preparing textile samples for measurement.

Two of the methods have been completely written up, and a third is very near completion. Originally, it was proposed that these methods would be submitted to the Board of the ISCC for publication or promulgation as they were completed. The committee now feels that, if this were done, people little acquainted with the many intricacies of instrumental measurement of textiles would consider (the first methods prepared) as being endorsed by the ISCC as preferred methods.

The General Interim report will, therefore, be prepared by the committee, describing the problem involved and the known methods available. Then as the detailed reports are completed, they will be appended to the interim report and, when this is completed, a proposal for publication will be made.

One additional method was added to the list, and the name of one method was changed. Also, distinction was made between method of preparation and method of presentation, and this will be spelled out for each type of sample.

The target date for the General Interim Report and the completed detailed reports will be the next ISCC annual meeting in 1964.

Subcommittee on Problem 17, Color in the Building Industry, Waldron Faulkner, Chairman

Temporary Chairman, Folley, was a bit late and Ralph Pike chaired the meeting during the first period. The problems of standardization were discussed.

Ken Kelly reported that the publication date of the Bureau of Standards Color Identification Manual has been delayed until Fall. It will contain the centroids and the new printing of color names.

Bixby reported that several companies are now including the Munsell notations with their color cards so that identification can be made by specification. He felt that if those in practice could ask for the Munsell notations and request their use, the custom of specification would become standard practice. The porcelain and clay people already use this method.

Gladys Miller suggested that schools should teach color specification along with their other decorative courses. If color could become a part of their education, then standardization would be a necessity. She also noted that the plastic samples are not accurate enough for critical matching.

Bea West indicated that not many practitioners in the decorator and resource councils use the Munsell specification. The Formica Company is one which does use the specifications as well as Bea herself.

Congoleum uses Munsell Color correlation - classified into B hues.



Ralph Pike felt that end-use-specifiers should be given color information with a system that is easy to use.

Folley indicated that architects would appreciate having such a system, because without it there would be no standardized system of specification, either fool-proof or simple. As soon as the N.B.S. manual is available his office will use the specification.

The matter of tolerances was discussed and it was felt that each trade could establish its own allowances. It was thought that shiny and hard surfaces may have problems in specification.

The 786 colors were intended as a complete aid for color selection by Glidden and were intended to supplant the specification for the architects. This, however, gives Glidden the bidding advantage because only they could bid on this specification.

Mr. Meyer warned that manuals showing chips of colors have to be dated so that the match can be accurate as the chips were not identical when from different batches. Age also caused discoloration. He was worried that specification would not work if the samples were inaccurate.

One school, Western Reserve, now teaches Munsell.

Hunter indicated there were five areas of color specification interest: 1) Design-art-architecture, 2) Marketing, 3) Visual science, 4) Material science and production, 5) Instrumentation - color specification can be the common denominator for all.

The meeting concluded after 5:00 p.m. with advice of the chairman to spread the gospel and try to sell the idea of the I.S.C.C.-N.B.C. color specification method.

Subcommittee on Problem 18, Colorimetry of Fluorescent Materials,  
Eugene Allen, Chairman

An interim report has been written on the progress of the committee's work so far. In this report, we had planned not to make any specific recommendation for a light source, but merely to recommend a formula by which it may be calculated how much error in the evaluation of a fluorescent whitening agent would be introduced by any given ultraviolet spectral energy distribution as compared with a standard curve.

On discussion of this recommendation at the subcommittee meeting on March 11, it appeared that a more specific recommendation from our committee would be desirable. Since the problem of revision of the standard light sources is to be discussed at the CIE Meeting this year, it appeared that it would be quite helpful to know what type of daylight is generally preferred by people concerned with the appearance of fluorescent materials. Accordingly, it was decided that the committee would issue a questionnaire, similar to that circulated by Miss Nickerson last year on behalf of U. S. Technical Committee E-1.3.1, Colorimetry, but restricted to users of fluorescent materials. The results of this questionnaire would be given to Dr. Deane B. Judd in time for consideration at the CIE Meeting this summer. It would also be included in the interim report of the subcommittee.

Subcommittee on Problem 20, Basic Elements of Color Education,  
Randall M. Hanes, Chairman

This year there seems to be little doubt that the report of Subcommittee 20 will appear before the next meeting. The publisher, John Wiley and Sons, Inc., has reported that the expected publication date will be in late spring or summer. Our secretary, Mr. Ralph M. Evans, has arranged with the publisher to provide free copies to the members of the Council.

It has been a long struggle; I hope that the results will provide at least some compensation for the delay.

Subcommittee on Problem 21, Standard Practice for Visual Examination of  
Small Color Differences, N. R. Pugh, Chairman

The subcommittee met on March 11 with 47 members and guests in attendance. As always at the meetings, there was spirited discussion of many aspects of color control practice in industry.

At the suggestion of ISCC Vice-President Ralph Pike, the Problem Statement and the Objectives as approved by the ISCC Board in 1957 were carefully reviewed--for the purpose of deciding where certain fundamental "building block" procedures could be put down on paper adequately, rather than waiting until more debatable points were thoroughly threshed out.

With this goal in mind, Task Groups were formed and time goals set. Task Groups I and II were assigned objectives relating to in-plant problems, where production and process engineering questions are predominant.

Specifically, Group I (A), under the direction of Sam Huey, will put on record some fundamentals in making practical tests for selecting color difference jury members. Group I (B), with Dr. R. Hanes as leader, will consider basic guide rules for evaluating motivation, through tests or job performance observation. Group II, with Wes Bullock as chairman, will put together the fundamentals of specifying viewing, judging, and reporting methods. Group III, chaired(at least temporarily) by Norman Pugh, will look at procedures and practices advisable where communication with marketing, styling, and merchandising people is of equal importance with production considerations.

A questionnaire will be sent out to members, and others who can contribute, to get as much information as possible about existing practices in various industries. A July meeting of Task Group Chairmen and others (perhaps in Chicago) is tentatively scheduled, to review results of the survey questionnaire.

September is tentatively made the deadline for a draft of a highly simplified set of rules, suitable for the ISCC to recommend as fundamental to any visual examination of small color difference.

Subcommittee on Problem 22, Material Standards for the Colorimetry of Opaque,  
Translucent and Transparent Materials, Fred W. Billmeyer, Jr., Chairman

At the Sixth Annual Meeting, the business of the Subcommittee was divided into two parts:

- (1) Consideration of round-robin studies of instrumental color measurement. The members of the Subcommittee were reminded that these studies were undertaken with two purposes in mind. First, to explore the long time reproducibility of a color measurement in order to establish the requirements on long term stability of color for candidate materials for standards for colorimetry.
- (2) To explore the requirements on the types of standards which would be most useful for the calibration of instruments for color measurements.

The Chairman reviewed briefly the data obtained in the first round-robin, with 15 laboratories equipped with G. E. spectrophotometers participating. The spread in results among these laboratories was much greater than had been anticipated, even when allowance was made for systematic errors which could readily be detected in the data. Further analysis of the data will be made, and a report to the Subcommittee and the Council will be made at a later date.

Plans were formulated for following additional round-robin studies:

- (1) A second program involving G. E. spectrophotometers, in which a small set of samples would be circulated along with explicit instruments for adjusting and calibrating the instruments.
- (2) A round robin involving spectrophotometers other than the G. E.
- (3) A round-robin on color difference measurement with colorimeters. Plans for this round-robin were not completed in detail at the Annual Meeting, but it is anticipated that the first two round-robins described will be initiated during the coming year.

#### Immediate Production of Material Standards:

Mr. Carl Foss, Vice Chairman, proposed the immediate production of a large number of material standards covering a wide range of color specifications. There was considerable discussion of the appropriate use and utility of such a collection of standards. Mr. Foss will present his proposals in detail at the next meeting of the Subcommittee.

#### Subcommittee on Problem 23, Expression of Historical Color Usage, Everett R. Call, Chairman

Subcommittee for Problem 23 met March 11, 1963 with over 50 committee members and guests present.

The history of the Subcommittee was reviewed.

A discussion of the application of the method developed by the committee was featured by displays presented by Mr. Louis A. Graham, American Viscose Corporation; and Miss Beatrice West, Beatrice West Studios. Discussion brought out the fact that many national corporations have adopted the method and that the largest groups and elements in the retail field are about to adopt this method by participating in a commercial application of the method.

The question of how to designate primary colors in a multi-colored sample was raised. It was agreed that future activities of the committee should be directed to this end.

A new organization in the field of color--Color Marketing Group--was discussed. This Group has already become the catalyst for those interested in the marketing aspects of color. Mr. Louis A. Graham, American Viscose Corporation, is Chairman of the new Group's Board of Governors.

REPORT OF THE  
PUBLICATION COMMITTEE,  
WARREN L. RHODES, CHAIRMAN

Five issues of the Newsletter were written, edited, printed, and mailed; two innovations were instituted--the form on aesthetics and styling and the member body meeting calendar.

A limited number of positions are open on the Newsletter staff. If you want to work on the Newsletter or if you know someone who does, please send a letter of application to the editor. All applications will be given fair consideration.

Contrary to vulgar opinion, the Newsletter welcomes correspondence. Letters relating to the form on aesthetics and letters containing manuscripts will be especially welcome. If you have an ax to grind, there is no better place to grind it. The Newsletter has a select and exclusive readership of the world's top color specialists in art, craft, manufacture, sales, engineering, science (although admittedly the latter two are relatively unimportant). Our voluminous mail does tax our limited staff, but let me assure you that every effort will be made to answer each individual letter.

I am both pleased and happy to report that the book, Color Problems in the Graphic Arts, is sold out. Approximately 1,000 books were sold with an income of approximately \$1,600.

#### NEW BUSINESS

Miss Dorothy Nickerson made a motion seconded by Mr. Ralph Pike that the Treasurer's report that had been adopted earlier by the Board of Directors be approved by the voting delegates of the Council. The vote was unanimous. Mr. William Kiernan made a motion seconded by Mrs. Blanche Bellamy that the report of the Finance Committee that had been adopted earlier by the Board of Directors be approved by the voting delegates of the Council. The vote was unanimous.

REPORT FROM THE AMERICAN  
ARTISTS PROFESSIONAL LEAGUE  
DELEGATES, JOHN SCOTT WILLIAMS,  
CHAIRMAN

No special problems in color have been included in the program of American Artists Professional League. No special complaints have been received about unsatisfactory pigments.

The profession is well supplied by firms who supply artists' pigments, brushes, canvas, paper, and all that goes with artistic outlets.

The artists now have a choice of grades of color suitable to personal preferences. Color makers offer prizes at annual exhibitions. The expansion of the water color medium is noticeable. American water colors have gained in authority rivaling the best that oil painting can produce.

My own excursions into the complex of firing operations of enamels on steel base have replaced my former interest in the use of colors at room temperature.

Our delegate, Mr. Frank Wright, is personally very much interested in the ISCC convention sessions.

REPORT FROM THE AMERICAN  
ASSOCIATION OF TEXTILE CHEMISTS  
AND COLORISTS DELEGATES, ROLAND  
E. DERBY, JR., CHAIRMAN

Color is an important property of textile materials. This fact generates an interest in all aspects of color science throughout the industry.

The focal point for much of the technical work in this area is the American Association of Textile Chemists and Colorists, more commonly known as the AATCC, or among those with a penchant for mathematics as the A<sup>2</sup>TC<sup>2</sup>.

This organization annually publishes a yearbook which contains detailed instructions for testing the fastness properties of textile and related materials. These procedures are kept up-to-date by periodic review. This is the function of the various research committees of the AATCC. A valuable feature of the yearbook is a detailed bibliography of articles and books dealing with textiles published during the year.

A new national headquarters building is due to be opened March 29th at Research Triangle Park, North Carolina. These extensive facilities will replace those at Lowell Technological Institute. This change reflects recent changes in the geographical center of gravity of the textile industry.

The Color Committee of the AATCC is responsible for maintaining a liaison with other organizations concerned with color problems. In addition, this group recommends techniques of color measurement or specification to other committees.

Under the present chairman, Hugh Davidson, the problem of constructing a new set of grey scales for visually evaluating small color differences is being actively pursued. Preliminary meetings have suggested tentative tolerances for these scales with respect to chromaticity and value. Sample scales illustrating the proposed tolerances will be prepared for the committee by the Munsell Color Company. Slight changes in format to improve viewing conditions are also contemplated.

REPORT FROM THE AMERICAN  
CERAMIC SOCIETY DELEGATES,  
H. D. BIXBY, CHAIRMAN

During 1962, the American Ceramic Society has continued its interest in color: description, use, and measurement. Increased precision of color measurement and

automated techniques of color classification of small color differences have received much attention. The increasing use of colored building materials for both exterior and interior application is dramatically shown in the glazed brick exteriors of the latest New York hotels, the striking use of architectural porcelain enamel at the new Dulles International Airport, and many other examples of outstanding new construction.

Articles published in the publications of the American Ceramic Society dealing with color include:

"Coloring Structural Clay Products by Means of Ceramic Powders Suspended in Organic Liquids," Harold P. Cahoon, Interstate Brick Co., Salt Lake City, Utah, Bulletin, A.C.S., Vol. 41 (3), 1962.

"Triaxial Color Blending," C. A. Seabright and H. C. Draker, Harshaw Chemical Co., Cleveland, Ohio, Bulletin, A.C.S., Vol. 42 (2), 1962.

"Body Stains in Brick," George Eyerly, Malvern Brick & Tile Co., Malvern, Ark., Bulletin, A.C.S., Vol. 41 (1), 1962.

Papers given but not published to date include:

"Report on ISCC Activities of Interest to the A. C. S.," Henry D. Bixby, Shenango Refractories, New Castle, Pa., Fall Meeting, Whitewares & Materials Divisions, A.C.S.

"The Role of Aluminum Contamination in Shade Control of Colored Glazes," Joseph V. Stout, Metal & Thermit Corp., Rahway, N. J., Fall Meeting, Whitewares & Materials Divisions, A.C.S.

"Some Refinements in Colored Dry Spray Brick Coatings," David W. Thomas, International Minerals & Chem. Corp., Mulberry, Fla., 1962 Annual Meeting, Structural Clay Products Division, A.C.S.

The following members of the American Ceramic Society are serving as delegates to the I.S.C.C.: C. S. Pearce, General Secretary, A.C.S.; H. D. Bixby, Shenango Refractories, New Castle, Pa., Chairman of the Delegation; F. J. Von Tury, Vontury Inc., Perth Amboy, N.J.; I. A. Balinkin, University of Cincinnati, Cincinnati, Ohio; R. L. Gibson, Shenango China Inc., New Castle, Pa.; T. G. Pett, Hillsdale College, Hillsdale, Mich.; J. C. Richmond, National Bureau of Standards, Washington, D.C.; and Paul Henry, O. Hommel Co., Pittsburgh, Pa.

We all were greatly saddened at the unexpected death in April of Kenneth McCartt, who served as a delegate from the American Ceramic Society for many years. Mr. McCartt was Senior Research Engineer for Universal-Rundle Corp., New Castle, and had been affiliated with the Whitewares Division of the A.C.S. since 1937.

The Charles Fergus Binns Medal was presented to Francis Joseph Von Tury, designer-craftsman of Perth Amboy, N. J. Established in 1926 in tribute to Charles Fergus Binns, first director of the College of Ceramics at Alfred and a past-president of The Society, the medal is awarded annually by Alfred alumni in recognition of outstanding achievement in ceramic art.

A member of The American Ceramic Society since 1943, he was made a Fellow in 1956. Currently secretary of the Design Division, he has also served as trustee for two terms as chairman, vice-chairman, and program chairman. Mr. Von Tury has also served for many years as a delegate to the I. S. C. C.



Word has been received from the Chairman of Symposia Programs of the American Ceramic Society that consideration is being given to a Comprehensive Color Symposium on Color to be held at the 1964 Annual Meeting which will be in Chicago. It is hoped that a number of I. S. C. C. members, not directly affiliated with the A.C.S. can be encouraged to participate.

REPORT FROM THE AMERICAN  
INSTITUTE OF ARCHITECTS  
DELEGATES, WALDRON FAULKNER,  
CHAIRMAN

No report.

REPORT FROM THE AMERICAN  
INSTITUTE OF INTERIOR  
DESIGNERS DELEGATES,  
HAROLD W. GRIEVE, CHAIRMAN

Leland Hall, in explaining the difference in musicians says, "Some composers are draftsmen; some are colorists." The same difference can be applied to Interior Designers.

Jules Langner in "Arts and Architecture" recently said that people in the creative field seem to divide into participants whom he calls innovators, consolidators, refiners and corrupters.

All A.I.D. designers are constantly working with color.

This year perhaps the best participation program was given at the A.I.D. convention in Seattle, Washington in April. Rita Battistine of the Woolsuede Division, Felters Co., gave a talk called "Color - Its Importance to Both Designer and Resource." A copy of the entire talk is on file in the ISCC Secretary's office.

I am going to paraphrase a few lines so that you see the excellent way she handled the historic use of color with its contemporary application.

After showing slides of paintings, tapestries and Pompeian murals, she showed rooms done in red by Braswell-Cook, David Eugene Bell, Ellen McClusky and Wm. Phalmann. Then she shifted to the terra cotta and orange family. She showed a Braswell-Cook interior for Kentile and Dorothy Liebes Studio for Amtico.

Shifting to the use of Siamese pink, she showed a setting done by Robsjohn Gibbons in which he used an authentic Siamese statue against a Siamese pink wall. Rooms were done in the saffron curry of the robes worn by the Brahmin monks in the far west. Mary Dunn and Everett Brown's rooms were done in yellows.

No color was neglected. Greens known as Lincoln greens and blues in all shades and description were shown.

To really appreciate color as used by the Interior Designers, you should know the manufacturers who are or who employ exciting colorists. Among these two groups are: Dorothy Liebes, Boris Kroll, Jack Lenor Larsen, Wm. Pahlmann, Beatrice West, Natalie Marcus, Marion Dorn, et cetera.

These people travel constantly, study unceasingly. They have a seeing, searching eye.

All designers are their beneficiaries.

REPORT FROM THE AMERICAN OIL  
CHEMISTS' SOCIETY DELEGATES,  
W. T. COLEMAN, CHAIRMAN

No report.

REPORT FROM THE AMERICAN  
PSYCHOLOGICAL ASSOCIATION  
DELEGATES, LEO M. HURVICH,  
CHAIRMAN

A review of the reports of American Psychological Association delegates to the ISCC shows that a number of psychologists, particularly younger ones, are involved with applied problems of color coding as

related to visual displays and that the most active color research laboratories seem at the moment to be (in alphabetical order) those at Columbia (Graham), Kansas State University (Helson), the University of Pennsylvania (the Hurviches), the University of Rochester (Boynton) and the U. S. Naval Submarine Base at New London (Dimmick). The psychophysics of complex fields is receiving a good deal of attention from most of these researchers. There is also a considerable spurt of interest in color discrimination in lower organisms. This is related to some extent to rapid developments in the electrophysiology of color vision. Among those working on lower animals are Blough at Brown, DeValois at Indiana, MacNichol at Johns Hopkins, Leibowitz at Penn State, Yarczower at Bryn Mawr, John L. Brown at the University of Pennsylvania Medical School and the Hurviches at the University of Pennsylvania. Research on the ERG and color vision has been carried out at Brown by Cavonius and Riggs, by Armington and Biersdorf at the Walter Reed Army Institute of Research. Louise Sloan's work on the pathology of color blindness continues at Johns Hopkins, and Dr. Elsie Murray is proceeding with the standardization of her Cross Test.

Dr. Riggs has developed a portable projection color mixer for the NSF Science Teaching Equipment Development Program. It is made of commercially available parts and is adaptable for color mixing, color specification, group color blindness testing and the testing of single individuals for color anomaly. Progress on the construction of a five-channel Maxwellian view optical system is reported by Dr. Boynton. The apparatus, equipped with interference filters, will be used in increment and decrement threshold work.

Dr. Graham reports work in progress on the effects of colored background on wavelength absolute settings of colors. Related research is that of Dr. Boynton who is using color-naming responses to identify the unique wavelengths in the spectrum as well as observing changes in the color-naming responses as a function of basic flash parameters and chromatic adaptation. A variation of the two-color threshold method is also reported where the HTRF is being used to determine the effects of selective chromatic adaptation under steady and transient adaptational states.

Other work reported by Graham is on reaction time as a function of wavelength with luminance constant and saturation as influenced by background color. Dr. Onley at Rochester continues to explore various aspects of saturation matching and scaling as she follows up her earlier work. Prof. Helson is also concerned with reaction time problems but not as related to color specifically. They do, nevertheless, show a basis for certain types of visual judgments. He also completed two studies on lightness assimilation and contrast and anomalous contrast and assimilation.

Dr. Dimmick lists the work of JoAnn S. Kinney on factors affecting induced color, and the following series of additional studies: brightness of colors

at mesopic levels, temporal factors in simultaneous induction, the effect of luminance level and fixation on tri-stimulus functions, the effect of surround brightness on color discrimination, and last, but not least, standardization of re-issue of the Color Aptitude Test.

The Hurviches report the completion of two studies by their former NYU students. One is an experimental study of the interrelations between spectral luminosity and spectral brightness for equal energy spectra at different levels, the other a study of perceptual changes with variations in exposure duration of pairs of consecutive short light pulses. Their own work at their new laboratories at the University of Pennsylvania continues with an analysis of temporal and spatial variables in perceived color. A mathematical theory of similarity judgments is being applied by one of their students to determine both small and large color differences.

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

In 1962 the subject of color and its satellite aspects continued to receive active attention among the many technical groups comprising

ASTM. These interests are monitored by ASTM Committee E-12, specifically, its subcommittee on InterCommittee Relations. This group's responsibilities are two: 1) newsworthy activities are identified and 2) its new section on Methods Review serves, on request, to review and renovate methods of test in the field of color and related appearance aspects, for the entire society. Thus is created a safeguard against obsolescence. Among the gamut of color-related subjects so treated are these:

Electro Deposited Metallic Castings and Related Finishes-- The automotive and construction industries, for example, need methods and standards of appearance but development is hampered by lack of appropriate instrumentation.

Porcelain Enamel-- Evaluation of the Hunter "distinctness-of-image" glossmeter is active.

Paint, Varnish, Lacquer and Related Materials-- The traditionally active Optical Properties subcommittee is collating various methods for color-difference, analyzing tests for yellowness and whiteness, evaluating haze of surface coatings, and developing an instrumented method to replace the long-used visual technique for tinting strength of white pigments. Of interest to ISCC Problem Subcommittee 14 is revision of the Gardner Color Scale test (D1544) to replace liquid-in-glass with colored glass standards.

Plastics-- Studies of gloss, yellowness of transparent and opaque plastics, and the development of photographic standards for rating visible non-parametric phenomena such as crazing and blistering are active.

Electrical Insulating Liquids and Gases-- Tests are being revised for color of insulating oils of petroleum origin and of used askarels (chlorinated aromatic hydrocarbons).

Methods Reviewed

- 1) Transparency of Plastic Sheeting
- 2) Turbidity of Industrial Water
- 3) Color and Haze of Cellulose Acetate Proportionate and Butyrate Plastics
- 4) Color of Clear Liquids (via Platinum-Cobalt Scale)

This work involves far less esthetic aspects of color and appearance, but these are of evident industrial and economic importance.

Among activities of ASTM E-12 of interest to the membership of ISCC are these:

Since sponsorship of the American Standards Ass'n Sectional Committee Z58, Standards in Optics, could not be assumed by ISCC, E-12 was proposed for this responsibility.

At the June 1962 Annual ASTM Meeting, E-12 presented a symposium on "New Ideas in Solving Problems of Appearance of Materials." Copies of these papers are available on request:

"Micromorphology in Appearance Problems of Plastics," R. J. Clark, Geo. Ingle

"Appearance Problems of Carbon Papers," W. E. Grady

"Control of Appearance of Aluminum Surfaces," R. V. Paulson

"Industrial Applications of Photogrammetry to Define and Measure Irregular Complex Surfaces," E. M. Gherardi

ASTM E-18 "Sensory Evaluation of Materials and Products" requested and has received liaison with E-12; it will be interesting to follow the course of this relatively new activity.

Your ISCC President heads an Ad Hoc Committee within E-12 to organize ASTM publication of a Compendium of Appearance Methods.

Subcommittee III on Pictorial Representation has enlisted the active participation of outstanding industry and government photographers to develop a recommended practice for photography for technical purposes.

Task Group 5 on Typewriter and Carbon Papers is successfully developing eleven test methods and standardizing sixteen definitions of terms required to specify quality of these papers.

Task Group 8 on "Test Method for Whiteness and Components of Whiteness of Materials" serves as an effective focal point for the many current studies of these factors, in and out of ASTM.

Related to ISCC Problem 12 "Illuminating and Viewing Conditions for Colorimetry" is E-12's Task Group 9, on "Combining and Updating ASTM methods D-307 and D-791." These methods are basic to colorimetry. This project was proposed by ASTM D-20 on plastics to meet needs expressed by The International Organization for Standardization, especially its Technical Committee 61 on Plastics. An international task force, in the latter's Working Group 5 on Physical and Chemical Properties, is attempting to reconcile divergent views on this subject, toward producing an ISO recommendation.

ASTM's Journal "Materials Research and Standards" included these articles related to color in 1962:

Comparison of Instrument Measurement and Visual Estimation of Specular Gloss of Glazed Ceramic Tile - by A. M. Illing 2, 2:117-121 (Feb. 1962)

Development of a Gloss Method for Transparent Plastic Films - by R. R. Knittel, 2, 3:180-185 (Mar. 1962)

Photometric Determination of Exposure 35-mm. Photomicrography - by D. A. Stumbo, 2, 4:282-287 (Apr. 1962)

REPORT FROM THE AMERICAN SOCIETY  
OF INDUSTRIAL DESIGNERS DELEGATES,  
EGMONT ARENS, CHAIRMAN

Surface indicators reveal a year  
of quiet consolidation in color  
trends with little dramatic change  
since our 1962 poll of designers.

Beneath the surface, three extremely significant trends and/or responses to color use are making up, all of which may be widely felt before another year is out.

Trend 1: A groundswell toward natural colors and materials. Several design leaders noted the vastly increasing use of such natural materials as wood, cork, marble, and metals in interiors and predict that colors which complement and accent these natural materials are growing quickly in importance.

Trend 2: Several designers noted that strong promotional efforts are being made to sell dark, deep colors to the public.

Trend 3: Several designers deplore the lack of objective data on current consumer color preferences. This lack of objective data leaves the designers who commented vulnerable to subjective preferences of company salesforces, preferences which the designers find unlikely to actually attract wide public interest.

Trends 2 and 3 are no doubt linked. We wonder whether these doubts, voiced by our designer respondents for the first time this year, may lead to the gathering and pooling of objective data on public color choices in such fields as upholstery and drapery fabrics, carpeting, floor treatments, small appliances and other areas where central information is not now available. Though such information would necessarily lag three to six months, while production schedules must anticipate demand, there would still be some more objective background for color planning than now exists.

#### Color Preferences - Objective and Subjective

Because of the centralized nature of auto manufacture and shipment and the few major companies supplying most of the demand, auto makers are able to plot accurately public color choice for their product.

Chrysler Corporation notes a strong and continuing preference for exterior white in all cars in their line. Highest preference for white is noted in the

Valiant where 28% of buyers select it. Buyers of Chryslers and Plymouths chose white in 24% of their purchases. Twenty-one percent of Imperial and Dodge Dart buyers chose white, while 20% of standard Dodge buyers specify white in 1963.

Black and alabaster are close seconds, running between 11% and 13% each in the Chrysler and Imperial lines, while for Dodge Darts and standard Dodge ivory holds second place with 12.5% and sandalwood third place with 10%. Valiant buyers chose light beige and light blue as their second and third choices, each claiming slightly over 11% of buyer preferences.

Gene Bordinat, Styling Director at Ford Motor Company notes the continuation of white exteriors in first place, though he does not cite percentage figures. He also comments on "a trend just getting underway to very light, almost white interiors as an extension of the exterior color."

Mr. Bordinat observes, "Black continues as the second most popular color. The recent ascendance of golden beige, to red and its derivatives -- chestnut and black cherry -- also continues. Turquoise, green and yellow are still down. Also down are two-tones and contrasting exterior and interior colors. Monochromatic schemes, matching and blending, support the trend to simple, clean trim."

A noticeable change in recent months, according to our Ford respondent, is the return of bright exterior colors, as a change from the neutralized metallic colors of the past few years.

We must ask: To what extent do consumer color preferences for automobiles -- the only exclusively outdoor appliance in wide demand -- reflect tastes in the home, the office, the factory? And is the rage for white already declining, or is it still coming on strong?

Here's what Chicagoan Dave Chapman, Fellow, ASID reports: "We think natural materials are returning to our scene and have observed a noticeable swing away from self-conscious contemporary design and preoccupation with color as an end in itself.

"We cannot take a critical attitude toward this trend -- natural woods, natural fabrics, natural building materials. If this is the trend, and I think it is, then color in objects and decor must be used which visually relate to natural materials."

Continuing, Mr. Chapman observes: "Rugs, for example, are making gains as opposed to wall-to-wall carpeting .... and I suspect that thousands of them will be laid upon wooden floors as opposed to synthetic. This could imply rug, upholstery and drapery colors as sympathetic to natural flooring materials.

"An extension of this attitude might suggest a whole new spectrum of fashionable color in home furnishings drawn from the same visual family as that of wood, linen, terra cotta, leather, brick, brass, iron, and cork," Mr. Chapman concludes.

Jens Risom, ASID, New York, a designer and producer of contemporary furniture, writes: "As we specialize in contemporary furniture design we do not get



involved with color work except in our own collection of fabrics, leather and vinyls.

"For a long time we have been conducting a survey on the best possible colors for furniture upholstery, primarily for non-residential interiors, and have arrived at 'a family' of warm muted colors. I am enclosing a collection containing our standard leathers, which are the basis for our entire color policy and trust this may be of some use."

Nineteen leather colors were sent by Mr. Risom reflecting a most interesting color palette. Depending on the viewer's outlook, between 3 and 5 of the 19 colors are outside the "natural range." A darkened turquoise and a medium blue called "Marine" stand outside. A very deep purple called "Eggplant" might qualify, though it is so muted as not to violate the "natural" feel. The other two candidates are a mellow red and black.

All other colors are in the earth, parchment, bronze, russet, gold, moss, earth yellow, and pumpkin range with a bright orange, called "Flame" for spice. Here is a designer-producer's personal conviction about color trends, backed by intimate contact with sophisticated buyers of fine office furnishings. Mr. Risom has the great advantage of designing what he sells and selling what he designs, enjoyed by few other ASID designers. Though many other ASID designers head design staffs of large manufacturing corporations, their contact with public taste and response and their ability to respond must filter through corporate channels.

Walter P. Baermann, ASID, in Waynesville, N. C., serves a number of furniture companies as consultant designer. Here are his comments: "Color use in product design as of today -- in furniture, in appliances, etc., with which we have to deal here in the office -- is the most frustrating part of our work.

"With relative ease we can enforce our concepts in three-dimensional statements, in production methods, etc. When it comes to color, this is all changed.

"The relationship between manufacturer and consumer -- in spite of all so-called consumer research," Mr. Baermann continues, "is an utterly blurred one in terms of consumer desires and consumer needs. Between our conscientious efforts at color use for the ultimate consumer stand an array of sales executives, salesmen and buyers with totally uneducated color subjectivity of their own, often slavishly following subrends (the white trend, the purple trend, etc.) for expediency.

"How can we designers avoid being forced into the 'play-safe' position, the 'follow-the-trend' position?" Mr. Baermann asks.

Another source of objective data concerning current consumer color preferences is the California Ink Company in San Francisco, whose paint colorants department each year publishes a "Colortrend Report." This report is based on consumer choices for interior wall paints and is compiled from data submitted by participating survey stores throughout the country, all of whom offer the consumer a choice of the same 1500 colors.

The stores participating cover a wide range of areas, industrial, agricultural, metropolitan and suburban. Semi-annual audits of their sales over a two-week period are made in these outlets which cater to the big-volume middle and lower income market.

The top choice for 1963 is a light violet called Amethyst, new this year, which tops all other colors ever measured by California Ink in popularity. A medium violet called Hyacinth runs a strong second. A more orchid shade is third and an orange-pink called Primrose is fourth. Numbers one, three and four reflect gains of 100% or more over 1962. A taupe brown in the medium range called Custer Brown is ninth, with a growth of more than 300% since 1962, replacing the lighter beiges and sandalwood as top seller in the brown area. Oranges, peaches and yellows are up, with a clean, golden yellow called Daylily up 250% and a new orange called Cantaloupe even stronger. The chosen greens tend toward the blue or are heavily greyed.

This is a strikingly different color pattern than the Risom leathers, much lighter, clearer -- more sky and less earth. Yet it is interesting that grays and charcoal appear in the Risom line not at all, and in the 48 top colors of Cal/Ink at the bottom of the list. White Smoke, a slightly greyed white which was Cal/Ink's top seller in 1962 sold only 35% as well in 1963 and did not make the top 20 at all!

#### Colors - Industrial

News in appliance colors for industry is courage -- for accent. C. F. Graser, ASID, Industrial Design Manager in the IBM computer division, reports that IBM data processing installations remain in the basic light gray and deep charcoal colors, but with red, yellow and blue primaries offered as a strong accent choice. He encloses an IBM swatch book and there is nothing timid about those accents.

Robert Hose, Fellow ASID, writes from Summit, N. J.: "Wall mounted products such as thermostatic controls have been for years mainly gold or silver. Recently, many such controls have come out with accent color panels or areas. I have just completed one that breaks into a relatively strong aqua color."

Mr. Hose also notes the use of strong color accents on business machines and military ground control electronic units, tending to break away from the somber black-grey palette.

L. F. Rost, ASID, reporting from the Electrodata Division of Burroughs Corporation in Pasadena, California writes: "We design and manufacture large, expensive and short-lived data processing systems. What we work on today will not hit the market for 2 or 3 years and will be obsolete 3 to 5 years after that. Because of size and the long gestation period we tend to be conservative. We are currently specifying a light beige gray combined with a dark blue gray and charcoal. Satin aluminum trim is used for highlights and sparkle."

Mr. Rost enclosed a photograph which indicates the beige is the large-area color. It is a rather warm sand tone, perhaps less in need of the bright primary accents used by IBM for its cooler-toned computers.

"Aside from computers," Mr. Rost observes, "I notice an extensive use of purple and lavender in furniture fabrics here in Southern California." So Cal/Ink's top paints are influencing interior design.

Donald Genaro, in the New York office of Henry Dreyfuss, Fellow ASID, reports the trend toward lighter colors continuing. "To offset a tendency toward blandness," he writes, "the counter-point of an accent color creates the needed interest. These accents manifest themselves in trim, trademarks, etc."

Concerning broad color use in design of areas and equipment for production, assembly and control, Mr. Genaro stresses the scientific and humane point of view. He is concerned with creating an efficient visual climate for industrial operatives. "We have found over the years an increasing need for intelligent use of color in the design of control panels, industrial and military equipment. The color value and reflectance of working areas are of primary importance. Vision must not be impaired by undue contrast or reflection. In most areas, light floors, walls, ceilings and work spaces help to reduce brightness contrast thereby increasing work efficiency.

"A background of light value should be provided to accent designations, controls, and indicators. Visual indicators are designed with background areas which complement the panel color and value to accent the indicating data more effectively. Frame colors should be darker than visual operating areas and complementary in value. Cool colors tend to be most restful and work well in totally enclosed operating areas," Mr. Genaro concludes.

#### Appliance Colors - Consumer

Herbert V. Gosweiler, Jr., ASID, design manager for Philco Corporation's Consumer Products Division in Philadelphia reports: "Sale of colored major appliances has increased, with the industry more or less standardized on Copper, Pink, Turquoise and Yellow. For accent, we find stronger value colors making an appearance. Blues, Lavenders and Greens seem to be the most popular accents."

In wood furniture appliance finishes, Mr. Gosweiler reports that medium tone brown colors continue to be most popular, irrespective of the type of wood specified.

And here's a trend noted by Mr. Gosweiler and confirmed by others: "We find an increased trend in wood furniture toward the use of opaque finishes, the most popular being black, white with gold accent, green, blue and terra cotta."

News from Arthur N. BecVar, Fellow ASID and design director for General Electric major appliances in Louisville, reports: "Much interest has been generated by the addition of Coppertone to the line of GE major appliance colors. This is a dark brown with even darker highlights around the edge. The General Electric Mix-or-Match colors: Petal Pink, Turquoise Green, Wood-tone Brown and Canary Yellow continue to enjoy great popularity."

Mr. BecVar notes further that color has become increasingly important in factory areas, since research indicates that "the judicious use of color can be as conducive to improved maintenance and quality of output in the factory as it is in the office."

From Hotpoint in Chicago, a General Electric division, design director Raymond C. Sandin, ASID, reports that Hotpoint exterior colors for major appliances will remain the same for the 1964 line; namely, Yellow, Turquoise, Pink and Brown, save that refrigerators will not be produced in Brown. The fifth color, and the hottest, in the Hotpoint line is called Fashion Finish and Mr. Sandin indicates that some 20% of all Hotpoint refrigerators, or 65% of all refrigerators sold in color, are in this color.

Mr. Sandin explains that Hotpoint's Fashion Finish is a dark brown highlighted by an extremely dark brown on the edges, with the darker color blending into the body color. This sounds rather similar to GE's "Coppertone" and Mr. Sandin reports that Fashion Finish harmonizes outstandingly with wood and copper kitchen decor.

"We sell more and more of our appliances in color, and we use color further down the line than ever before," Mr. Sandin writes. "We are freshening up the interiors of our refrigerators for 1964 with a change from green toward a cool green blue. We will use rather strong accent colors in dark mauve, bright 'chrome,' and strong greens for trims and the like. Our cabinet ranges and built-in ovens will also go toward rather vivid colors and contrast in backsplashes and control panels. However," he continues, "the higher priced models will be held in some restraint to appeal to the 'educated taste of the man with more money to spend.'"

Concluding, Mr. Sandin writes: "To sum up our program and thinking for the immediate future, I might say that we are designing into our control panels and trims a good visual value of quality, and we are using rich and contrasting colors mixed heavily with exposure of natural metal finishes. We tried this on our new line of 1963 products with most gratifying acceptance in terms of sales and profit."

From the office of O. E. Haggstrom, ASID, design planning director at the General Electric housewares division in Bridgeport, William V. Judson, reports "two trends which seem to have become stronger since last year." "Cool blues appear to be gaining slowly but surely in housewares while aquas (though still used a great deal) seem to be receding in popularity. They are less turquoise in character than formerly."

The second trend noted by Mr. Judson is "Gay color combinations (probably of Italian and Japanese influence) becoming more prevalent both at the gift and housewares level. They are being used more widely, and with great decorative effect, in ceramics and glassware."

Harper Landell, ASID, of Philadelphia comments interestingly about appliance colors at home and abroad. "In my opinion," he reports, "the manufacturers of white goods in the U.S.A. -- refrigerators in particular (a 99% saturated market) should do something new in interior color. Everybody seems to be 'me too.'"

Mr. Landell recalls that in his report last year he mentioned a refrigerator styled for the French market in which he used orchid and lavender as interior colors. "This was used on only one model last year. Although we felt it would be a controversial color scheme, it has had such good acceptance in France, that this year the whole line uses that color scheme."

One wonders whether the lavender rage highlighted by Cal/Ink is international in scope.

Writing from Toledo, Ohio, J. McLeod Little, ASID, notes, "a continuance of the momentum of color acceptance and application on a wider scale. We find this particularly true where the middle tones are giving way to extremely dark or light tones used with brushed metal surfaces. Heavy processing equipment shows a tendency to accept the lighter, more sophisticated tones that have been used on smaller units."

Carrying out Mr. Gosweiler's report on use of opaque finishes over wood at Philco, Mr. Little writes: "There seems to be a revival of the use of polychrome 'enamels' on wood furniture and with the exception of a few off-white tones, the use of more formal, sophisticated, muted darker tones is being pushed--but will they succeed?"

Here is another reference to the ukase from on high, being foisted on the consumer.

#### Color Consensus

What about color in packaging? From Long Beach, California, Donald L. McFarland, Fellow ASID, observes: "In the graphic arts field, we find very rapid translation of style colors to graphic design. Lavender, shocking pink, orange, vibrant greens and blues, seem the trend."

"In architectural interiors," Mr. McFarland continues, "olive greens and putty greens seem to be growing rapidly in popularity, at least out here on the West Coast." He also notes a strong trend in the use of vibrating colors for "shock" effect.

Harper Landell of the lavender French refrigerators notices that American refrigerator manufacturers are "afraid to try anything but various shades of blue for interiors. We have found that in packaging, clients are more ready to accept new and unusual color combinations providing, of course, they are appropriate for their product."

From the New York office of Egmont Arens, Fellow ASID, Frank DeRaffele reports: "New interest for packaging in high-style lavenders and orchids for luxury lines in the women's field. We consider these as department and specialty store colors, not yet generally acceptable for supermarket packaging."

"In mass package design," Mr. DeRaffele continues, "we find that pink is still quite strong, with blue-green and blue and green used contiguously on the package very strong. Gold is a hot new package color used with white and an accent color in all kinds of products -- even floor wax. Garish treatments are out. But bright, stylish use of colors, even closely vibrating colors, is in," he concludes.

Louis Cheskin, writing from Chicago, predicts "demand for lighter colors, delicate tints. There will be a considerable demand for the earth colors - rusts, pumpkins and ochres."



In the exhibit field, Francis F. Braun, ASID in Cincinnati says: "We are finding an increasing acceptance of pastel combinations in our industrial presentations which was unheard of four or five years ago." He notes also that major kitchen appliances seem to be relinquishing their surgical look for a smarter and more relaxed effect through use of softer and richer colors.

Russel Wright, Fellow ASID, reports from New York a growth in more mature and subtle use of color. "During the past two years," he writes, "we are seeing abundant uses of monochromatic schemes and analogous schemes. Also, there is certainly more use of grayed earthcolor schemes and of black, brown and off-whites."

From Pittsburgh, Peter Muller-Munk, Fellow ASID, observes, "It seems that color is becoming more and more an identifying factor of corporate exposure. A corporation with diffuse colors in its advertising, trade-mark, architecture, etc. will have a more difficult time being recognized as one corporation than if it concentrates on a deliberately chosen set of colors."

Turquoise, plum and the darker ranges of browns, as well as white are noted by Mr. Muller-Munk as coming into vogue.

Harold Hart, ASID in Chicago writes: "I have observed an increased use of off-beat or vibrating color combinations, especially in textiles. There is also an increased use of color on wood furniture such as chairs and cabinetry, especially on accent pieces. I am aware of deeper richer colors being used for a more 'elegant' look, particularly in the red range such as maroon and plum."

Frederick H. Rahr, New York colorist, says, "If I had to choose one word typical of the trends we see developing, it would be toward 'elegance' as expressed in richness of colors, color combinations, styles, lines and textural interests."

Your compiler, Egmont Arens, Fellow ASID says: "This report uncovers both agreement and divergence. In this we may discover a decided difference between the market for high style, expensive and custom made objects and the mass volume market.

"The 'natural' trend in color and decor will have the most complete effect on the custom market. Yet the tremendous popularity of the dark brown finishes for major home appliances indicates that copper, woods and natural textures along with harmonizing colors are a strong factor in mass purchasing. On the other hand, the trend so frequently noted to opaque paints on wood furniture does indicate a seeking for extra richness and change. An increasingly expert use of metallic colors and textures is also adding spark to home appliances and to many large industrial objects. The greatly increased availability and variety of textured metals is giving us designers a challenging new resource.

"The growing acceptance and understanding of intelligent color use in factory and heavy machine planning is a vital development in American color use, and is as worthy of note as are the changing color trends which condition consumer acceptance."



REPORT FROM THE COLOR ASSOCIATION  
OF THE UNITED STATES, INC.  
DELEGATES, MIDGE WILSON, CHAIRMAN

During 1962-3 there were two significant color developments related to our work.

A forecast service, to be issued twice a year, was instituted for MEN'S AND BOYS' SOCKS and for MISSES' AND CHILDREN'S SOCKS AND ANKLETS. These were developed at the specific request of the hosiery industry, which felt the need for better coordination in styling and planning.

The second development concerns color changes related to the economic picture. Man is the victim of his own synthetic environment. We have larger buildings and more people consolidated within a square block; products -- no matter what size or shape originally -- are squeezed and compressed within packages rigidly engineered to specific shelf areas; autos are so confining only folding people can be comfortable. Even with our food the seasons are completely ignored, courtesy of Mr. Birdseye and his competitors. We, too, live a seasonless existence between air conditioning and being able to vacation any place at any time of the year. There's a monotonous sameness wherever you look. It's even affected our mail. We enjoyed receiving gaily stamped letters from members around the world. This, too, is gone. Most mail is now metered! Not only is there little opportunity for the individual to behave as an individual, it is more and more difficult for any area, or type of product, to be individual or unique for very long. As soon as a successful new approach is developed, competitive items are "adapted" to the same general pattern. In this highly "cultivated" world, color becomes increasingly important as a means of obtaining distinction, variety and a change of pace. Even when a manufacturer's products are limited to the same materials and the same shapes, season after season, varied uses of color produce widely varying results.

Today, styling involves great volume, necessitating working months ahead of the seasons as we once knew them and reorders are virtually out of the question. There is a growing pattern of styling in more limited groups, for shorter periods of time, with a different color look for each interval. Indicative of this is the planning for 1964, where rich toned darks and new neutrals of Fall '63 are followed by soft, light, pretty shades for resort and early spring and then progressing into two groups, one for city darks and the other pure white with pure brights for summer. It is refreshing to see this changing color cycle bringing these bright tones back into summer, rather than the earlier resort season of recent years.

To counteract the monotony of mass production and distribution, more and more color is required. This also affects the life of a color. Special promotional shades, significant particularly for their impact and individuality, may be expected to be short lived. They are fresh and appealing when introduced, sweep rapidly into all fields, saturating the market and then fade equally quickly. On the other hand, certain colors are so basic and universal in application and appeal that they continue their importance, with variations for many seasons. BONE is an excellent example.

Thus, the use of color has shifted from a style function into a dual role of style plus a means of counterbalancing the dense pattern resulting from today's industrial world.

REPORT FROM THE DRY COLOR  
MANUFACTURERS' ASSOCIATION  
DELEGATES, MAX SALTZMAN,  
CHAIRMAN

During 1962, the first year of membership of the DCMA in the Inter-Society Color Council, activities in the field of color were carried out by the Technical Committee of the DCMA and by inclusion of speakers

on technical subjects at four of its regular meetings.

During the year 1962-1963, speakers included:

Dr. A. Strobel of General Aniline & Film Corp. -  
"U V Absorbers."

Mr. John Dickenson of Harshaw Chemical -  
"Missing Pigments."

Dr. E. Weidlein of Union Carbide Chemicals -  
"Technical Service in the Chemical Industry."

The Technical Committee of the DCMA worked on a chemical revision of the pigments section of the book, Clinical Toxicology of Commercial Products. This book is widely used in Poison Control Centers where physicians call for advice in cases of accidental ingestion of commercial chemical products. The revisions proposed by the DCMA Technical Committee, as well as the data on acute toxicity of a large number of pigments was furnished to the editors of this work and will be included in the second edition which is now on the press.

The DCMA is supplying a member of its Technical Committee (Mr. Emil Wich) to sit in on the meetings of the AATCC Colour Index Supplement Committee to help maintain the accuracy of the data regarding pigments which is furnished to the editors of this standard reference work.

Mr. Godshalk is acting as a committee of one in compiling data on pigment specifications to aid in the revision of American Color Specifications, the publication of Subcommittee 7 of the Problems Committee headed by Mr. Francis Scofield.

Inasmuch as the Dry Color Manufacturers' Association has as members, the vast majority of the companies producing colorants in this country, many of the employees of its member companies were speakers on the subject of color at various technical groups.

For the coming year, the Dry Color Manufacturers' Association, in addition to having at least three technical speakers on the subject of color or colorants during the year at its regular meetings plans, through its Technical Committee to work in conjunction with the ISCC on the subject of color measurement, color specification, and color tolerance.

REPORT FROM THE FEDERATION OF  
SOCIETIES FOR PAINT TECHNOLOGY  
DELEGATES, S. LEONARD DAVIDSON,  
CHAIRMAN

The desire for more knowledge about color and color technology is still strong in the Federation of Societies for Paint Technology.

The Philadelphia Society presented a series of five lectures this past year. Three were given by Mr. Hugh Davidson, one by Mr. Richard Hunter, and one by Mr. Robert Stafford.

The New York Society repeated its course on Color Measurement with Mr. Richard Landry as the instructor. Plans are being made to repeat the course this fall for the third time.

Talks on various phases of color technology were given to several of the Societies by Mr. Max Saltzman, Mr. Melvin Gerson, Mr. Fred Stieg, Mr. Eli Gonick - to name a few.

The activities of this delegation were climaxed by a Panel Discussion at our Annual Meeting in St. Louis entitled, "The Fundamentals and Problems of Color." Miss Ruth Johnston, Dr. Fred Billmeyer, and Mr. Max Saltzman presented short papers. The discussion, moderated by Mr. S. Leonard Davidson, lasted well over an hour and a half. The papers and the discussion will be printed in full in the March issue of the Official Digest.

The Annual Meeting was climaxed with an Awards Luncheon. At this time the first Armin J. Bruning Award for outstanding contributions in the field of color to the protective and decorative coatings industry was presented to Mr. Richard Hunter.

The attached bibliography of articles published in the Official Digest, the Journal of Paint Technology and Engineering, indicates that the Federation is active in the field of color.

It is hoped that another panel discussion can be arranged for our Annual Meeting to be held in Philadelphia this fall.

REPORT FROM THE FOLDING PAPER BOX ASSOCIATION OF AMERICA DELEGATES, ALBERT KNER, CHAIRMAN	No report
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REPORT FROM THE GRAVURE TECHNICAL ASSOCIATION, INC. DELEGATES, OSCAR SMIEL, CHAIRMAN	No report
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REPORT FROM THE ILLUMINATING ENGINEERING SOCIETY DELEGATES, NORMAN MACBETH, CHAIRMAN	In retrospect, we look back on 1962 as a most interesting year, particularly with regard to the cooperation of the Illuminating Engineering Society and the Inter-Society Color Council. The program for the 1962 Annual Meeting of the I.S.C.C. was a program on color and lighting. The moderator for the symposium was the Technical Director of the Illuminating Engineering Society, Mr. C. L. Crouch, and the papers presented were as follows:
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"Psychology in our Luminous Atmosphere," R. C. Allison

"Color Rendering Properties of Common Light Sources and Methods for Rating Them," Dorothy Nickerson

"Dynamic Metamerism," Walter Granville

"Color Clicks On and Off as Light Goes Up and Down," Gladys Miller



One year later, we look back upon this as a most interesting meeting and the papers were certainly helpful to those who are relating lighting and color, and it is difficult to see how there can be one without the other.

During this past year, the Color Rendition Subcommittee of the Light Sources Committee of the I.E.S. has continued its work on a system for rating the color rendering of light sources in conjunction with the C.I.E. Committee E 1.3.2. Unfortunately, none of the American members of this committee have met with the chairman, Mr. W. Munch, at meetings called in Europe. The writer has had an opportunity, however, of discussing these matters with the Chairman of Committee E 1.3.2 and there seems to be substantial agreement between the proposals of the Chairman of the national committee and the basic work done by the subcommittee of I.E.S. and the American national committee of C.I.E.

The question of standard light sources is under active discussion in the U.S. National Committee for E.1.3.1. under the chairmanship of Dr. Deane B. Judd. Data is being gathered in the U.S.A. from experimental data measured in the U.S.A., Canada and England so that more realistic information is available for discussions of changes in standard light sources for daylight which may be proposed at the forthcoming meeting of the C.I.E. this June in Vienna.

There are a large number of American delegates planning to attend this Vienna meeting. Some of those active in the I.S.C.C. are the following: C. W. Jerome, Dorothy Nickerson, D. B. Judd, Isay Balinkin, F. L. Dimmick and Norman Macbeth. There seems little question but what national committees from countries other than the U.S.A. will have definite proposals with regard to establishing a color rendering index for light sources and will propose changes in the standard light sources, such as Illuminants "A", "B", and "C". It seems relatively certain that the only illuminant, listed above, that will surely survive is Illuminant "A". It is quite possible, however, that because of changes which may be required of illuminants, such as the inclusion of ultra violet in the daylight spectrum, comparable to natural daylight, this will certainly involve much discussion that could make impossible any changes of the daylight illuminant at this meeting.

The Illuminating Engineering Society is yearly becoming more active in the field of color and more cognizant of the effect of color in lighting.

REPORT FROM THE INDUSTRIAL  
DESIGNERS' INSTITUTE DELEGATES,  
HOWARD KETCHAM, CHAIRMAN

#### The Revolution in Color

We are in the midst of a revolution in color. Some people recognize this fact. But so many -- the vast majority, including company executives -- are unaware of what is literally staring them in the eyes.

Everybody sees color, is attracted by color, responds to color. However, too few realize how color can best be put to work.

It may be encouraging to note that more than 1,000 of the nation's largest business and industrial concerns are using color to establish corporate identities. They are using distinctive color on stationery, company checks, in advertising, press releases, on hang tags, packaging, in trademarks and logos. Color is thus being utilized to identify in the mind of the public firms with

hundreds of daily consumer contacts, or it is used to symbolize particular fields of operations, varied products, packages, retail outlets or services.

But these progressive firms, are unfortunately, in the minority. A brief look at several areas in which color can be effectively employed to enhance, persuade and sell will illustrate this.

#### An Expensive Waste

Last month (February 23, 1963), Business Week magazine noted that the color of vehicle fleets could sell as much as 25 per cent of a moving company's annual business volume. In effect, what the article was saying is that next to transporting products or services, selling is a prime function of a company's trucks.

To do otherwise than to plan and carry out a color design for its truck fleet is an expensive waste for any company. It costs, to demonstrate this point, more than \$200 a year to rent a highway billboard. Add to that the hundreds of dollars it costs to produce the poster displayed on that billboard. Well, a truck represents a substantial saving of that outlay. It is a moving, two-sided free billboard advertisement delivering a widely read message.

A truck, hence, can supplement salesmen, advertising and public relations programs. It is indeed the cheapest, most widely read of billboards. It can command attention, contribute to highway safety, build employee morale. And, it is the least costly and most effective method of promoting a company image. A well-designed truck color scheme can compel prospective customers to notice the company's message.

We can easily see how this has been put into effect in the fuel oil industry. Some fuel oil deliverers have abandoned the traditional red or orange patterns. They suggest heat; these colors are used too often and offer little contrast together. Instead, clear medium blues and golds are being discovered as attention compelling stimulants.

#### Headlines in Color Lines

Newspapers, too, are getting on the color bandwagon. One-third of the nation's daily newspapers are now printing color advertising -- and this advertising is no longer restricted to food ads. The volume of this selling tool -- color -- has doubled in the past five years as more and more firms have come to recognize that color -- for fashions, for cars, for household wares -- sells their products as no black and white advertisement can.

The lesson to be learned in this area is simple: Captions should be printed in colors that are stronger, more intense, than the background color. Thin lines, underscores and reverse lettering in more than one color are not effective. And artwork should be reduced as little as possible to avoid loss of detail.

In this same vein, the combination of the wrong lettering style and the wrong color weakens the desired impression in signs and logotypes. Many signs and logos are a bar to communication. Too many modern alphabets are based on tortured block letters or bland Franklin Gothic. Frequently prefabricated letters



are stretched or squeezed to fit squared-off space. The result is that they look contrived and hard to read.

On the other hand, the right choice of typeface and color can boast the impact of any caption or headline. For example, Ultra Bodoni type connotes masculinity and strength. The association of firmness conveyed by this typeface is complemented and strengthened when it is reproduced in red. The effect, however, is weakened if reproduced in magenta, rose or lilac -- all feminine, or weak colors.

### A Community's Image in Color

Turning to a much broader field, we are now seeing that communities are becoming aware of the use of color to introduce a welcome, inviting atmosphere, one that is pleasing to residents and visitors alike. Effectively planned, color is, in fact, the most important single image builder a community possesses because so much of a community's personality is communicated by sight.

A good example is the Georgetown section of Washington. There, gay doorways, contrasting shutters, colored handrails, painted doors and flower boxes all contribute to and symbolize gracious living.

It is high time that other communities wake up to this factor. It is high time that builders of huge housing tracts abandon drabness and focus on appealing colors that create individuality and distinction, colors that represent the advanced standard of living that modern housing should reflect.

Speaking of the housing field, it might be noted that the professional architect is taking stock of what is going on around him. Today, many are expected or required to provide more than the basic services of design and supervision. They are calling for help from color planners -- and we must expect to help them.

And, in the stores they are planning for shopping centers and the like -- and, moreover, in every existing store in the nation, we are being called upon to increase sales through color planning, to make stores not only inviting places to come into and remain but also places whose colors reinforce the selling strength of the merchandise. The colors should concentrate attention on the wares displayed not on the store itself.

### The Lesson of Color

Colors are personalities in themselves. Paint a room red and you quicken the pulse beat. Paint that very same room blue and you lower the pulse beat. Paint it yellow and the result is eye strain. But paint it green and the reaction is neutral.

There is a strong and growing need for distinctive and forceful identity which only color can provide.

Unfortunately the popular hues such as primary and flag colors have been pre-empted -- so more imagination is required to establish color individuality and exclusiveness.



With the advent of more and more new products, as the result of constant research and development, manufacturers believe the public is more likely to accept these new items if made fully aware, by color symbolism, of the relation of the new product to the firm's other fully accepted products.

Some firms are replacing their corporate color with a newer, more distinctive, more compatible, less dated version -- with color or colors that best express the personality of the company. Others are dropping the use of two or more corporate colors for a single hue to gain obvious cost and other advantages.

Good corporate color affords maximum flexibility and usability, distinction and status in the various areas where it is advantageous to establish and/or exploit the corporate image. By consistent use of the elements of color symbol and letterform in every visual contact with the public, progressive firms are amplifying recognition and good public relations.

REPORT FROM THE NATIONAL ASSOCIATION  
OF PRINTING INK MAKERS, INC. DELEGATES,  
F. L. WURZBURG, JR., CHAIRMAN

NPIRI has concluded the work it was doing for the Quartermaster Corps on developing specifications for character-

izing a set of base offset inks for map printing in the field. The details of this project were reported last year. The Quartermaster Corps has released tentative specifications to the ink industry for criticism.

The study being conducted by NPIRI on the effect of the particle size of phthalocyanine blue pigments continues. Some of the results of this work have been published in the book Printing Ink and Color, Pergamon Press. This project has recently been extended to include similar studies with a Quinacridone Red. Further results are expected to be published in the future.

The basic project on Mie scattering reported on last year has been written as a doctoral thesis by J. Hammel, Lehigh University, 1962. As mentioned previously, this work is under the direction of NPIRI and affords a good illustration of the backing for fundamental research being sponsored by the ink industry.

After a lapse of one year, NPIRI will again sponsor a week long training course on printing ink technology for technical personnel from the ink industry. Both G. L. Erikson and F. L. Wurzburg, Jr. will take part in this course and give instruction on different aspects of color.

#### Misc. Industry Activities in the Field of Color

The Rochester Institute of Technology held its annual color seminar for graphic arts personnel again in November, 1962. This is a three day seminar and has continued in popularity to the extent of being over-subscribed for the third successive year. Lew Wurzburg took part in this seminar as he has in the previous ones.

At the annual convention of the ink association, Tiny Erikson demonstrated to a large number of executives in the ink industry the various tests for color blindness and color aptitude. A great deal of interest was aroused in these tests and many of the executives took them in order to familiarize themselves with the techniques involved.

Last year we reported on the activities of the joint groups representing the advertising agencies (AAAA), the magazine publishers (MPA), photoengravers (APA), and the magazine printers (PIA) towards achieving standardized hues for 4-color proofing inks for high-speed magazine printing. The NAPIM and NPIRI have both been active in assisting these groups and it is encouraging to be able to report that at long last it appears that a standard set of hues will be adopted soon.

REPORT FROM THE NATIONAL PAINT,  
VARNISH AND LACQUER ASSOCIATION  
DELEGATES, EVERETT R. CALL,  
CHAIRMAN

No report.

REPORT FROM THE NATIONAL  
SOCIETY OF INTERIOR DESIGNERS,  
INC., DELEGATES  
MRS. EDITH GECKER, CHAIRMAN

No report.

REPORT FROM THE OPTICAL SOCIETY  
OF AMERICA DELEGATES, DOROTHY  
NICKERSON, CHAIRMAN

During 1962 the color field has been well represented in the group of those active in Optical Society affairs. The president, in 1962, was David L.

MacAdam, and Deane B. Judd is editor of the journal. One of the two lectures offered to local groups that the president was asked to address, was on color -- Color in the Courts.

The journal in 1962 continued its leadership in the publication of papers on color and vision. So many, in fact, were published that the list is too long for News Letter publication with this report, and is therefore omitted this year for the first time. It covers a review by Dr. MacAdam of the Wyszecki book Farbysteme (p. 837), and there are papers by Balinkin, Bouman, Boynton, Chamberlin, Chapanis, Cohen, Davies, Dimmick, Evans, Gibson, Hammond, Haupt, Judd, Helson, Hemmendinger, Ingle, Hunter, Hurvich-Jameson, Ikeda, Kinney -- and many others, most of the authors well known to ISCC members. The subjects covered are wide -- color, colorimetry, filters, fluorescence, lamps, photometry, reflectance, spectrophotometry, and vision. The papers are indexed, both by author and subject, in the December journal.

Attention should be called to a most successful year for the Society's new journal - Applied Optics. It continues also to publish in translation the Russian journal, Optics and Spectroscopy.

At the October meeting there was an invited demonstration of apparent fluorescence of colors, by Ralph Evans, the outcome of his very important researches in this field.

Work has continued by the OSA committee chairmanned by Dr. Judd on Uniform Color Scales, with a report by Dr. MacAdam, and considerable correspondence, on the problem of "non-additivity."

OSA representatives to the U. S. National Committee for the CIE are Duntley, Judd, and Nickerson. Work has continued active, in preparation for the 1963 quadrennial meeting to be held June 18-26 in Vienna, and is summarized as follows, it being pointed out that both OSA and IES are jointly concerned in these CIE matters on color.



Dr. Judd is chairman and secretary of CIE Committee E-1.3.1 (Colorimetry). At Brussels it was agreed that reaction be explored in each country to views that had been expressed at the meeting, with a view to formation of a new proposal for standard light sources in 1963. Based on replies in the U. S. to a questionnaire circulated early last spring, U. S. opinion seems to be that no change should be made in CIE standard light sources until a 300-800 nm definition for a target standard for daylight can be agreed upon, and a sufficiently close match to this can be obtained in an actual lamp, or in a lamp-filter combination that can be agreed upon for use as a standard source for colorimetric and visual use. Further, that any series adopted for light source standards should include one that in C.T. is at least as high as 7400K.

A meeting of the U. S. Technical Committee E-1.3.1 was held during the October meetings of the Optical Society to discuss the next step required to make progress in a revision of CIE standard sources for colorimetry, which would seem to be the development of target standards for various phases of daylight. Available information, including recent British measurements, were summarized. Very fortunately, it was found that a considerable amount of new data based on U. S. and Canadian measurements, completed or in progress, was under study that could be made available for committee use. Several informal conferences were held to develop this work, including a discussion of methods of statistical analysis that might produce not only typical curves for daylight, but perhaps an Abbot-Gibson-like series by which the spectral energy distribution of daylight for any given correlated color temperature might be obtained. This work is under way. It is hoped that we shall have results by the end of March, so that the information, and the possibilities it opens up, will be ready for discussion at Vienna. Meanwhile, other programs for measurements of the color and spectral distribution of daylight are being completed in Great Britain (see N.L. #163, report of the British Colour Group Meeting of Jan. 16, 1963, at which there were three separate reports by Crawford, Chamberlin, and Henderson).

Regarding the progress of Committee E-1.3.2 (Color Rendering), a 20-item questionnaire from the German National Committee was answered in April 1962, reporting on progress in the U. S. on color rendering studies. In general, the replies from the United States were based on a draft of an IES subcommittee report that recommended an Interim Method of Measuring and Specifying Color Rendering of Light Sources (published July 1962, Illuminating Engineering), and those from Germany were based on a proposal for a Specification of Color Rendering that resembles the German draft of tentative DIN 6169. The main characteristics of the two proposals are compared in the CIE report, and a number of similarities pointed out. The CIE committee, at a meeting held at Evian in June 1962, hoped that international agreement could be reached on the basis of a coordinated proposal. The committee met again in February, and at that time appointed a committee of three (Münch, Ouweltjes, and Nickerson), to try to work out a single proposal. Unfortunately, as the U. S. member, I have been able to attend only one of five meetings held by this committee since Brussels, but have done the best I could by mail. There are as yet some misunderstandings of meanings in the two methods, but the essential difficulties are now being faced. The two methods are quite similar in purpose, each provides for single and special ratings, each applies to all light sources, and each is based on the color shift of test colors reduced to 8 in number. The greatest difference between methods is that which follows from the decision by

the IES group that formulas for chromatic adaptation are not yet sufficiently accurate to include. The IES method is therefore proposed as an interim method, and restricted to reference illuminants of the same or nearly the same chromaticity. The German proposal includes formulas for chromatic adaptation based on primaries suggested in 1945 by Judd. This formula, one of three that was studied by the IES committee, was not found by them to give answers of sufficient accuracy to include at present in the committee's recommendations for a rating method.

The other point of difference between the U. S. and German proposals, is that the U. S. recommendation bases its formula on the length of difference-vectors measured on the CIE 1960-UCS diagram, while the German proposal uses the Nickerson-Stultz color-difference formula that is based on the Adams' Chromatic-Value diagram. Since both groups agree that ratings based on visual observations of test objects must agree with computed ratings, it seems possible that a mutually agreed upon method can be developed once there is sufficient understanding of the details of these separate proposals. We hope that all of this can be threshed out by mail, or during presession meetings at Vienna.

For the year 1963, there have been no changes in O.S.A. representatives to the Inter-Society Color Council.

REPORT FROM THE PACKAGE  
DESIGNERS COUNCIL DELEGATES,  
KARL FINK, CHAIRMAN

No report.

REPORT FROM THE PACKAGING  
INSTITUTE DELEGATES, F. L.  
WURZBURG, JR., CHAIRMAN

No report.

REPORT FROM RESEARCH AND  
ENGINEERING COUNCIL OF THE  
GRAPHIC ARTS INDUSTRY, INC.  
DELEGATES, PAUL LYLE,  
CHAIRMAN

No report.

REPORT FROM THE SOCIETY OF  
MOTION PICTURE AND TELEVISION  
ENGINEERS DELEGATES, RALPH M.  
EVANS, CHAIRMAN

This year has been an active one in color photography and color television for the SMPTE, with a considerable number of new and improved products having been introduced to the trade. A symposium on color and color photography was held at the annual spring meeting in Hollywood and very well attended. Your secretary delivered the invited tutorial paper on "Hue, Saturation and Lightness in Photography and Television" to this group, which he previewed at our last annual meeting. The response indicated a high degree of interest in the subject of color. It is intended that this paper be published but it has not yet been edited for the purpose.

REPORT FROM THE SOCIETY OF  
PHOTOGRAPHIC SCIENTISTS AND  
ENGINEERS DELEGATES, ALBERT  
J. DERR, CHAIRMAN

No report.



REPORT FROM THE SOCIETY OF  
PLASTICS ENGINEERS DELEGATES,  
FRED W. BILLMEYER, JR., CHAIRMAN

The continuing interest in color of  
the SPE and its Coloring of Plastics  
Professional Activity Group during  
the past year is well exemplified by

the number of talks on this subject presented to the SPE and its local sections. Subsequent publication of several of these papers in the SPE Journal is indicated by reference:

At a Regional Technical Meeting on vinyl plastics, November, 1961:

"Coloring Poly(vinyl Chloride) Plastics for Outdoor Applications," J. B. De Coste and R. H. Hanson, SPE J., 18, 431 (1962).

At the Annual Technical Meeting, January, 1962:

"Color as an Engineering Material," M. Saltzman. To be published, SPE J.

"On Order in Color and Coloring," G. W. Ingle. SPE J., 18, 177 (1962).

"Procedures for Instrumental Color Control," H. Hemmendinger and H. R. Davidson.

"Color Considerations in Decorating Plastics," R. E. Dunning and T. E. Hayden.

"Printing and Decorating Polyolefin Surfaces," E. A. Smith, SPE J., 18, 157, 280 (1962).

At a Regional Technical Meeting on Color and Coloring of Plastics, April, 1962:

"Seeing Light and Color," R. M. Evans.

"Telephones in Color," G. H. Moede, Jr.

"Color Can be Controlled," T. G. O'Brien.

"Colorants for Plastics used in Contact with Foods," G. W. Ingle. SPE J., 18, 769 (1962).

"Color Principles and New Color Effects," H. C. Felsher and W. J. Hanan.

"Use of Instrumentation in Color Matching Problems," H. R. Davidson and H. Hemmendinger. SPE J., 19, 104 (1963).

"An Objective Approach to Coloring," F. W. Billmeyer, Jr.

At the indicated local section meetings:

"FDA Status of Colorants for Plastics Food Packaging," G. W. Ingle, Connecticut, November, 1961.

"Dry Coloring of Thermoplastics," A. Keon, Tri-State, January, 1962.

"Color and Color Concentrates" (for polyethylene and polypropylene),  
R. Hill, Central Indiana, February, 1962.

"Ultra-Violet Absorbers," J. A. Weicksel, Baltimore-Washington,  
February, 1962.

The following paper was also published in the organization's journal:

"Dispersion Aids for Dry Coloring in Injections Molding," P. R.  
Junghans, SPE J., 18, 1267 (1962).

From the names of the speakers at these meetings it will be apparent that the SPE has relied heavily on ISCC membership to educate its members in matters pertaining to color.

In 1963, the SPE will sponsor, jointly with the American Chemical Society, a two-day Symposium on Dyes and Pigments in Coatings and Plastics, to be held during the Fall ACS meeting in New York, September 8-13, 1963.

REPORT FROM THE TANNERS' COUNCIL  
OF AMERICA, INC. DELEGATES,  
MRS. RUTH H. K. FRIES, CHAIRMAN

No report.

REPORT FROM THE TECHNICAL  
ASSOCIATION OF THE GRAPHIC  
ARTS DELEGATES, J. A. C. YULE,  
CHAIRMAN

The TAGA Color Committee is working on an evaluation of the gamut of colors produced by a set of inks used in color printing processes.

There are three main systems of measurement in use for processing evaluation - the CIE system, the Munsell system, and the Preucil system. The first two need no description. In the Preucil system, density measurements are made through three-color filters and are combined to give two parameters known as hue error and grayness. This gives quantitative information as to whether the ink colors are properly related to the reproduction process. Moreover, it is simple enough for almost any ink user or ink maker to use and to understand. Consequently, it has been widely accepted and has led to a considerable improvement in the choice of ink colors.

On the other hand, it is not an accurate color-measurement system because of the lack of standardization and the choice of color filters. Besides, there are too many color-measurement systems already.

The TAGA Color Committee took on this project in the hope that the differences between these schools of thought could be ironed out. However, after long discussion, it has become evident that experimental work rather than further discussion is now needed.

Some experimental work has been done during the past year. Sets of inks have been made, 24 different combinations of them have been printed, and these are to be evaluated to determine whether any of the systems of measurement and plotting are adequate. The chief difficulty here is that our graph paper is not three-dimensional.



In addition, there is the question of the relative importance of various colors. Altogether, it is too big a problem to be solved in odd moments and it is hoped that the committee will be able to encourage some organization to undertake it as a research project. Considering the number of tank cars of ink, often of unsatisfactory color, which are consumed each year, this would be well worth while.

We hope to publish the findings resulting from our discussions and experimental work in the TAGA Proceedings next year. We should be interested in knowing whether this problem of the gamut of colors produced by a set of colorants is encountered in any other field of color. If so, it might be considered as an I.S.C.C. problem.

The specification and evaluation of ink colors is in a rather unsatisfactory state at present but several groups are working on ink standardization. The I.S.C.C. "Survey of American Color Specification" (1955) contains no mention of printing inks, but Mr. Scofield intends to remedy this in the revised edition now being prepared (Problem 7).

REPORT FROM THE TECHNICAL  
ASSOCIATION OF THE PULP AND  
PAPER INDUSTRY DELEGATES,  
D. NOEL OBENSHAIN, CHAIRMAN

The ISCC delegation has been inactive.  
The writer proposes that it be reactivated. Meanwhile, the TAPPI Optical  
Methods Committee has:

1. Published final revision of a 75° test for gloss,
2. Revised two gloss test procedures to cover printing inks on paper,
3. Worked on the measurement and specification of whiteness.

The TAPPI Method for spectrophotometry needs modernizing. We hope to cooperate with ASTM on this project.

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Newsletter Committee:

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