

Inter-Society Color Council *News*

ANNUAL REPORT ISSUE

REPORT OF THE PRESIDENT FRANC GRUM

It has been a great honor to serve as President of the Inter-Society Color Council during the past two years, but the honor is not an empty one. There are numerous duties attached, one of the last of them being this report on the state of the Council. The various activities of the Council in the past year will be covered in the reports that will follow; therefore, I will confine my remarks to the general state of the Council.

The actions and directions of the Council are governed by the Officers and the Board of Directors and I feel that their guidance has been indeed very good. Since becoming President, I have listened to many points of view regarding what is wrong or right with the Council and what new directions we should take. I have brought these and my own ideas before the Board for their consideration. A serious attempt was made to get all directors more intimately involved in the Council's affairs and it is for that reason that a director/liaison assignment to various committees has been formulated. I strongly believe that all members of the Board should be intimately familiar with how various committee functions are progressing. Also, emphasis has been given to the individual member group (IMG). We presently have two IMG members serving on the Board of Directors, thus we hope that through them the ideas and views of IMG will not only be heard but they will also be able to influence the directions the Council may take.

As in the past the Board met three times a year and these meetings were indeed very fruitful. Our concern has been to preserve and promote the aims of the Council, i.e., to bring together artists, designers and scientists and to offer among these groups a *modus operandi* for better understanding of the wonders of color.

Two new standing committees have been established for optimum operation of the Council: one of these is the Arrangements Committee and the other is the Publicity Committee. Both of these are needed; indeed they are essential due to the rotation of annual meetings and for better exposure of what the Council is and does.

With the Board's help we have formalized the scopes for all standing committees thus providing to each committee a clear guidance of its responsibilities. Our Committee on future Planning has been very effective in providing ideas and plans for our meetings and our symposia.

Financially, thanks to Mr. S. L. Davidson's skillful handling of the Finance Committee, we are in good shape as you will hear from him.

The Secretary's office was very ably run by Dr. F. W. Billmeyer and I am particularly thankful to him for his dedicated service and for all his help that he extended to me. As you very well know, our secretary is also Editor-in-Chief of the *Color Research and Application*, the journal which has become world renowned in the field of color under his editorialship.

The Projects Committees continue to be the heart and the

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soul of the Council. Our President-elect, Dr. W. Schaeffer and the four Problems Committee coordinators (R. Hoban, R. Kuehni, R. Spilman and B. Swenholz) have tried hard to achieve the stated goals in various projects.

The composition of the Council, i.e., the membership level and the number of Member Bodies, is about the same as it was two years ago. The liaison with Member Body Organizations is, thanks to the efforts of Ms. J. Davenport, functioning very well.

I am quite certain that you will agree with me that we had a fine Annual Meeting last year and likewise this year. Our Planning Committee has done much for our meetings to be more meaningful and well prepared. The past two Williamsburg symposia, one on color metrics and the last one on chromatic adaptation, were, thanks to their respective program chairmen, (R. Kuehni and P. Kaiser) well organized, and both attracted the world's experts to participate.

I would like to announce that 1981 will mark the Golden Anniversary of the Council. The ISCC and the Canadian Society for Color are preparing a joint symposium to be held in Williamsburg next February, the general theme of which will be "Artists and Scientists Working Together." A golden jubilee program is being planned for the 1981 Annual Meeting.

Two years ago, when I took over as President of the Council, I pledged to you that I would do all I could to strengthen the Council's activity, to work with directors and to carry on the dialogue with all members. I have made every attempt possible to maintain close communications with all committee chairmen. However, I will let you be the judge as to how successfully I have lived up to the pledges I gave you two years ago.

In closing, I would like to emphasize once more the uniqueness of our organization where artists, designers and scientists can work together and have an opportunity to broaden and to enhance our knowledge in diverse problems dealing with aesthetic, practical and scientific aspects of color for man's better understanding of the wonders of color and for *majorem Dei glorium*.

I thank you all for all the help and understanding that you gave me. If I ever sounded harsh or too demanding on you I assure you that that was not my intent. I merely wanted to make at least a token contribution to the advancement of the Council's aims and purposes.

REPORT OF THE PRESIDENT-ELECT WILLIAM D. SCHAEFFER

The ISCC has been fortunate indeed to have had during the last two years the outstanding leadership of Mr. Franc Grum. His innovative concepts and follow-through have provided di-

rection and guidance to the Officers, Board of Directors and Committees. At the very best, I can only hope to continue and consolidate the advances he has introduced.

I would also direct your attention to the 1981 Annual Meeting. This will be our 50th Anniversary Celebration, and we expect that you will want to make it a noteworthy occasion. The dates are April 26 and 27, 1981. The location is the Hotel Roosevelt in New York City.

The involvement of the ISCC member-body organizations, and particularly the chairpersons of the delegations, will be needed. Three meeting sessions are planned. The first session at the suggestion of the ISCC Planning Committee will be based on reviews of "Fifty Years of Progress on Color in — — — —" The second session will be devoted to "Five Year Forecasts in Color Applications and Technology." The final session will deal with Color Education.

Delegation chairpersons will be contacted soon for commitments to program participation. Please be ready to say "yes."

REPORT OF THE SECRETARY FRED W. BILLMEYER, JR.

The Inter-Society Color Council welcomed a new member-body during the past year, the Foundation for Analytical Research in the Arts, Ltd. FARA's objectives and progress are summarized in its first report to the Council, later in this issue. I regret to announce, however, that the resignation of the Association of Professional Color Laboratories was requested for non-payment of dues. The number of Council member-bodies remains at 36.

We are pleased also to welcome the Detroit Colour Council (a local society and therefore ineligible for member-body status) which has renewed its sustaining membership after several years. We currently have two sustaining members, the other being the European Gemological Laboratory.

Mention should also be made of a new national color society, The Colour Group (India), founded with the assistance of two ISCC members, Dr. N. S. Gangakhedkar and Dr. (Mrs.) S. S. Patwardhan. We wish them every success.

It is with pleasure that I announce the election of Mr. S. Leonard Davidson, the retiring Treasurer, as an Honorary Member of the Council.

Several major color meetings for 1981 have been announced; the Fall 1980 issue of *COLOR research and application* provides details. Our own 1981 Williamsburg meeting (February 8-11) and Annual meeting in New York (Roosevelt Hotel, April 26-27) celebrating our Golden Anniversary have been mentioned in earlier reports. The ISCC will cosponsor with its member-bodies the FSCT and the MCCA a Symposium on Color and Appearance Instrumentation, to be held in Louisville, Kentucky, on March 24-26. The Council for Optical Radiation Measurements will hold an international conference on Optical Radiation Measurements of Fluorescent and Retroreflective Materials in St. Paul, Minnesota, on June 17-19. The International Colour Association (AIC), with the cooperation of its member associations (including the ISCC) will hold the fourth AIC Congress COLOR 81 BERLIN in Berlin, Federal Republic of Germany, on September 20-25. This will be followed by a Symposium on the Golden Jubilee of Colour in the CIE 1931-1981, sponsored by The Colour Group (Great Britain) in London on September 28-29. For 1982 plans are being made for the ISCC to cosponsor the 20th anniversary meeting of the Color Marketing Group, which grew to member-

body status from the Subcommittee for Problem 23, "Expression of Historical Color Usage."

The AIC has announced the formation of a Study Group on Color-Order Systems chaired by Dr. Gunter Wyszecki. Because membership in the Study Group is limited, Dr. Wyszecki has agreed to the formation of an ISCC advisory committee whose chairman will represent those in this country who are interested in this subject. Details can be obtained from the Secretary's Office.

I have been asked to review the status of *COLOR research and application*. Circulation of the journal continues to grow, but the number of ISCC members who are subscribers is disappointingly small for an Endorsing Society. During 1979 the journal published eight papers originating in ISCC activities (meetings, project committees) and another ten authored by ISCC members. Since 1976, Rolf G. Kuehni has been Associate Editor of the journal representing the ISCC. He has announced his intention of resigning at the end of 1980, and the Board of Directors will name a replacement. I wish to thank Mr. Kuehni for his outstanding work as Associate Editor.

As has been announced previously, the Secretary announced his intention of resigning at the end of his present term of office in 1982.

REPORT OF THE TREASURER S. LEONARD DAVIDSON

For the past two years, I have indicated that it might be necessary to raise the dues to increase our income to meet the rising costs of operating the Society. The financial operations of the Society during 1979, which are detailed in the attached financial statements, indicate that it will not be necessary to put this raise in effect for another year.

The General Fund showed an "Excess of Income Over Expenses" of \$3,821.46 in 1979. To put this figure in perspective, it should be pointed out that \$1,139.12 was received as interest and that \$1,023.00 should be deducted for amortization of the Newsletter covers. Deducting these amounts indicates that the "Excess of Income over Expenses" from our operations was \$1,659.34. A study of the comparison of actual income and expense and the budget shows that we received \$972.76 more than we anticipated and spent \$609.58 less than we budgeted.

We should point out that we paid an additional \$378.66 to Adam Hilger that was due for mailing and other charges for producing "Color 77." We have revised the financial report for this function to show this additional expenditure.

The dues accounts show that the number of our members is fairly stable. New members are joining to replace those who resign, retire, etc.

There has been one increase in membership costs approved by the Board of Directors during 1979. The 1980 dues statements for overseas members will show an increase of \$1.00 per year to cover the increase in the cost of mailing.

I want to thank my fellow members of the Finance Committee, Mr. George Gardner, Mr. Robert Hoban, Mr. Warren Reese and Miss Midge Wilson for their assistance and cooperation during 1979. I would also like to express my appreciation to my fellow officers, the Board of Directors, and all the members of the Inter-Society Color Council for their guidance and cooperation during the past year.

**ASSETS AND LIABILITIES
DECEMBER 31, 1979**

Assets

Cash in bank – Regular Checking Account	\$14,169.79	
Cash in bank – Regular Savings Account	4,676.37	\$18,846.16
Certificates of Deposit		12,921.07
Prepaid Insurance		27.33
Newsletter Covers		3,069.00
Unpaid Dues – Billed 1979		1,345.00
Total Assets		\$36,208.56

Liabilities

I.H. Godlove Fund (in checking account)		23.92
Project Committee 37 (in checking account)		220.00
1980 Williamsburg Conference Registrations received	\$13,888.50	
Expenses to 12/31/79	(2,418.55)	11,469.95
Total Liabilities		\$11,713.87
Difference		\$24,494.69
Balance I.H. Godlove Fund		909.63
Project Committee 37		220.00
Total Assets		\$25,624.32

	1978 ¹	1979 ²
Total Assets	\$22,742.88	\$25,624.32

¹Includes \$1,277 in unpaid IMG and Member Body Dues

²Includes \$1,345 in unpaid IMG and Member Body Dues

1979 GENERAL FUND

Income

Dues IMG and Member Bodies		\$11,426.00
Subscriptions and Reprints		919.00
Annual Meeting		
Registration & Luncheon	\$ 5,975.00	
Meeting Expenses	(4,576.28)	1,398.72
Williamsburg Conference 1979		
Income Received 1978	10,228.60	
Income Received 1979	12,548.00	
	22,776.60	
Colonial Williamsburg, etc.	(19,932.56)	2,844.04
Use of Mailing List		50.00
Miscellaneous		35.00
Total Income		\$16,672.76

Expenses

President's Office	0.00
Secretary's Office	3,200.00
Treasurer's Office	603.52

Board of Directors	704.00
Committees	117.90
Newsletter	8,147.51
Bank Charges	21.66
AIC Dues	60.00
1978 Audit	425.00
Printing By Laws Supplement	108.85
A. Hilger – Balance Printing	
Color '77 Proceedings	378.66
Miscellaneous	223.32

Total Expenses \$13,990.42

EXCESS OF INCOME OVER EXPENSES \$ 2,682.34

Interest

Savings Account	\$ 236.76	
Certificates of Deposit	902.36	\$ 1,139.12

TOTAL EXCESS OF INCOME OVER EXPENSES \$ 3,821.46

1979 Income Versus Estimate

Income	Estimate	Actual	Difference
Member Body dues	\$ 2,700.00	\$ 2,400.00	\$- 300.00
IMG Dues	9,000.00	9,026.00	+ 26.00
Annual Meeting (Net)	1,800.00	1,398.72	- 401.28
Williamsburg '79 (Net) o	1,500.00	2,844.04	+1,344.04
Subscriptions, Reprints, Etc.	700.00	1,004.00	+ 304.00
Total	\$15,700.00	\$16,672.76	\$+ 972.76

1979 Budget Versus Expenses

Expenses	Budget	Actual	Difference
President's Office	\$ 200.00	\$ 0.00	\$- 200.00
Secretary's Office	3,200.00	3,200.00	0.00
Treasurer's Office	600.00	603.52	+ 3.52
Board of Directors	500.00	704.00	+ 204.00
Committee Expense	150.00	117.90	- 32.10
Newsletter	9,000.00	8,147.51	- 852.49
Audit	450.00	425.00	- 25.00
Amortization NL Covers	1,023.00	1,023.00	0.00
Miscellaneous	500.00	304.98	- 195.02
A. Hilger – Color '77		378.60	+ 378.66
By-Laws Supplement		108.85	+ 108.85
Total	\$15,623.00	\$15,013.42	\$- 609.58

Dues Billed 1980

Number	Rate per Year	Amount	Total
IMG			
535 Active	\$15	\$8,025	
65 Active	21	1,365	
16 Retired	7	112	
1 Retired	13	13	
5 Student	7	35	\$ 9,550

Member Bodies

35	75	2,625
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Sustaining			
1	75		75
Total 1980 Dues			<u>\$12,250</u>

CARRIED FORWARD 1978-9

IMG			
50 Active	15	\$ 750	
4 Active	10	40	
9 Active	20	180	\$ 970

Member Bodies			
4	75		300

Sustaining			
1	75		75
Total Carried Forward			<u>\$ 1,345</u>
Total Billed			\$13,595

1979 Dues Account

	Billed	Received
Member Bodies	\$ 2,850	\$ 2,400
IMG (individual Member Group)	11,548	9,026
Sustaining Member	75	0
Total	<u>\$14,473</u>	<u>\$11,426</u>
TOTAL BILLED		\$14,473
RECEIVED 1/1/79-12/31/79	\$11,426	
WRITTEN OFF, RESIGNED, ETC.	1,680	
BANK CHARGES	22	13,128
CARRIED FORWARD	<u></u>	<u>\$ 1,345</u>

I.H. Godlove Award Fund

Income		
Interest Savings Account	\$ 52.25	
Total Income		\$ 52.25
Expenses		
Reuby Process Co.	38.28	
Total Expenses	<u>38.28</u>	
Excess of Income Over Expenses		<u>\$ 13.97</u>
FUND BALANCE		
Balance December 31, 1978	\$ 895.66	
Excess of Income over Expenses	13.97	
Balance December 31, 1979	<u></u>	<u>\$ 909.63</u>

ASSETS

Savings Account	\$ 885.71
Due from General Fund	23.92
Total Assets	<u>\$ 909.63</u>

Project Committee 37 Fund

Income		
Contributions	\$200.00	
Total Income		\$200.00
Expenses		
J.T. Luke - Printing and mailing	330.00	
Total Expenses	<u>330.00</u>	
Excess of Income Over Expenses		<u>(\$130.00)</u>

FUND BALANCE

Balance December 31, 1978	\$350.00
Excess of Income over Expenses	(130.00)
Balance December 31, 1979	<u>\$220.00</u>
Assets	
Due from General Fund	\$220.00
Total Assets	<u>\$220.00</u>

**FINANCIAL REPORT (Final)
ANNUAL MEETING
APRIL 22-24, 1979
HOTEL ROOSEVELT
NEW YORK, NEW YORK**

Income

Registrations			
199 @ \$20.00	\$3,980.00		
15 @ 1.00	15.00		
4 @ 0.00	0.00		\$3,995.00
Luncheons			
128 @ 15.00	1,920.00		
4 @ 0.00	0.00		1,920.00
Total Income			<u>\$5,915.00</u>
Expenses			
130 Luncheons @ \$14.75	\$1,917.50		
Equipment Rental	615.24		
Printing and Mailing	995.73		
Gratuities	375.00		
Miscellaneous	612.81		
Total Expenses	<u>4,516.28</u>		
Excess of Income Over Expenses			<u>\$1,398.72</u>

**FINANCIAL REPORT (Final)
DEANE B. JUDD MEMORIAL CONFERENCE
FEBRUARY 12-14, 1979
WILLIAMSBURG, VIRGINIA**

Income

Registrations (Less refunds) 1978	\$10,228.60	
Registrations (Less refunds) 1979	12,548.00	
Total Income		\$22,776.60

Expenses

Colonial Williamsburg Foundation	18,278.84	
Printing and Mailing	975.52	
Lunch Speaker – Fee	300.00	
Lunch Speaker – Expenses	106.00	
Gratuities	225.00	
Bank Charges	55.20	
Total Expenses		19,932.56
Excess of Income Over Expenses		\$ 2,844.04

**FINANCIAL REPORT (Final)
COLOR '77
JULY 10-15, 1977
R.P.I. TROY, N.Y.**

Income:

Registrations	\$37,229.00	
Housing ¹	11,287.00	
Meals ²	7,157.00	
Activity Charges	1,802.00	
Rental of Exhibit Space	1,000.00	
Interest – Savings Account	977.65	
Miscellaneous ³	918.00	
Bank Charges ⁴	(299.70)	
Total Income		\$60,070.95

Expenses:

Speakers	4,000.00	
Housing ⁵	11,496.00	
Meals ⁵	7,222.00	
Banquet ⁵	4,200.00	
Reception ⁵	945.00	
Boat Trip	4,779.13	
Coffee, Wine and Beer Breaks	1,878.50	
500 Copies Preprints	3,690.31	
275 Copies Proceedings	5,790.60	
A. Hilger – Mailing	378.66	
Insurance-Liability (1 Week)	750.00	
R.P.I. Printing, mailing, etc. ⁵	10,500.00	
Souvenirs	3,500.00	
Miscellaneous	315.80	
Refunds	452.00	
Total Expenses:		\$59,898.00
Excess of Income Over Expenses:		\$ 172.956

¹Includes charges for CIE meeting held before Color '77

²Does not include banquet

³Includes sales of preprints, souvenirs, and final proceedings

⁴Includes \$259 for bad check

⁵Paid to R.P.I.

⁶Transferred to ISCC General Account

REPORT OF THE 1980 ANNUAL MEETING

The 49th Annual Meeting of the ISCC was held at the Genesee Plaza Holiday Inn in Rochester, New York, on April 20-22, 1980. The meeting opened with a Sunday evening reception, which was sponsored by the Eastman Kodak Company; thanks are due to Mrs. Bonnie Swenholt and Mr. Franc Grum for these arrangements.

The Project Committees of the Council met as usual on Monday. This year fourteen committees met, with four holding 3-hour meetings. Although it was possible to use only four simultaneous meeting rooms in the morning, five were needed in the afternoon, and the usual conflicts of interest were severe. Mini-symposia in lieu of the committee business meetings (which were the original intent of the Problems Committee day) maintain their popularity but do little toward alleviating the need for interested persons to be in several places at once.

On Monday evening ISCC members were taken by bus to the campus of the Rochester Institute of Technology, where the Graphic Arts Research Center and the School of American Craftsmen provided a most interesting tour. A visit to the museum of the School for American Craftsmen was followed by a motion picture describing the School's activities in a wide variety of crafts ranging from pottery to glass blowing. At the Graphic Arts Research Center the feature was the production from original scene to printed reproduction of a still life scene. Those attending were able to see each step of the process, including particularly the large web offset perfecting press, said to be the largest testing and research press in the world, turning out souvenir programs, one of which was subsequently sent to each ISCC member with Newsletter No. 265. Wine and cheese refreshments were served, and those who persevered soon found where to purchase the popular colorful RIT ties and scarves.

The Tuesday Morning Symposium, titled "Color in the Graphic Arts," was presided over by Mrs. Swenholt in the absence of Frank Benham, who had organized the symposium just before his retirement from Kodak. The sponsoring member-body was the Gravure Technical Association, of which Mr. Benham is the Delegation chairman. The speakers and topics were:

Advertising Agency Viewpoint – Mr. J. Shekerow, Vice President, Horton, Church & Goff, Inc.

Original Color Photography for the Graphic Arts – Mr. K. Stanton, Marketing Education Specialist, Commercial and Industrial Photo Division, Eastman Kodak Company.

Quality Control in Color Printing – Prof. M. Southworth, School of Printing, Rochester Institute of Technology.

Color Printing, The Printer's Viewpoint – Mr. W. Rocap, Director of Training, Meredith/Burda Printing Corp.

Color . . . As Seen and Printed (multimedia presentation) – Mr. C. Rinehart, Technical Applications Associate – Graphic Arts, Eastman Kodak Company.

The last of these was a spectacular presentation on color, its perception, and its reproduction involving no less than nine slide projectors and synchronized sound. Several well-known ISCC members were featured, including Bonnie Swenholt, Calvin McCamy, and Charles Rinehart (in person as well as on film).

The meeting site then transferred to the luncheon presided over by President Franc Grum. An unannounced event was the presentation of a certificate of Honorary Membership to S. Leonard Davidson, retiring Treasurer. The citation for the presentation of the 1980 ISCC Macbeth Award was read by Dr. C. James Bartleson, and its text is found elsewhere in this issue. Dr. Wright responded briefly.

Mr. Grum convened the annual business meeting of the Council after a brief recess; the Minutes of this meeting follow. At the close of the business meeting, the 49th ISCC Annual Meeting was officially adjourned.

Although attendance at this meeting was a little smaller — 157 — than at others in the recent past, those present agreed that it made up in quality what it may have lacked in quantity. Thanks are particularly due to Mrs. Bonnie Swenholt for arranging an eminently successful occasion.

Fred W. Billmeyer, Jr.

MINUTES OF THE ANNUAL BUSINESS MEETING

The 1980 Annual Business Meeting of the Inter-Society Color Council was called to order by President Franc Grum at approximately 2:00 p.m., Tuesday, April 22, 1980, in the Genesee Plaza Holiday Inn, Rochester, New York. There were approximately 45 present.

Reports were heard from Mr. Grum, Dr. William D. Schaeffer (President-Elect), the Secretary, Mr. S. Leonard Davidson (as Treasurer and Chairman of the Finance Committee), and the chairmen of several Standing Committees. Written versions of these reports appear elsewhere in this issue.

As required by the By-Laws, the report of the Finance Committee was approved by a majority of the Voting Delegates present.

There being no further business, Mr. Grum turned the Presidency of the Inter-Society Color Council over to Dr. Schaeffer, who adjourned the meeting at approximately 2:45 p.m.

Respectfully submitted

Fred W. Billmeyer, Jr., Secretary

REPORT FOR THE BOARD OF DIRECTORS

The ISCC Board of Directors met on September 23, 1979, February 3, 1980, and April 20, 1980. Mr. Grum submitted a synopsis of the September 23 meeting, held in Rochester, which was published in Newsletter No. 262, page 1. Briefly, the reports of the Nominating Committee and the Macbeth Award Committee were received and approved, the programs for the Helson Memorial Symposium on Chromatic Adaptation (Williamsburg, February 1980) and the 1980 Annual Meeting were discussed, and the concept of an ISCC Service Award was initiated.

At the February 3 Board meeting, held in Williamsburg, the several changes in Member-Body and Sustaining Member status described in the Secretary's report took place. A Service Award Committee consisting of R. G. Kuehni (Chairman), H. Hemmendinger, and R. Spilman, had been appointed by the Executive Committee to make a proposal for a new ISCC award to be established to recognise outstanding service to the Council. This proposal was accepted, creating a third ISCC Award. The Chairman of the By-Laws Committee was requested to prepare amendments to the Standing Rules to make several current or new ad-hoc committees into Standing Committees. These would include an administrative Awards Committee with subcommittees to propose nominees for the (now) three ISCC Awards.

The programs for the 1981 Williamsburg meeting (which will be jointly sponsored by the ISCC and the Canadian Society For Color) and for the 1980 and 1981 Annual Meetings were discussed.

The April 20 Board meeting was held in Rochester. The new Officers and Directors attending the meeting as guests were welcomed. The report of the By-Laws Committee, proposing extensive changes to the Standing Rules (as outlined in the written report in this issue) was accepted, discussed, and approved. An important part of this report was the adoption, as follow-up to the Board's action in February, of the following recommended practice for the newly established ISCC Service Award:

"The ISCC Service Award is presented for outstanding long-term contribution to the advancement of the Inter-Society Color Council and its aims and purposes. The contribution may be in the form of organizational, clerical, technical or other services that benefit the Council and its members . . . This award is presented as the occasion arises but not more frequently than once a year.

"The candidates must be members of the Council and must have been active in the affairs of the Council.

"Citizenship, place of residence, age, or other personal circumstances should not be considered in the granting of [any of the ISCC] awards."

These statements are based on the report of Mr. Kuehni's committee on the Service Award, which was accepted with thanks and incorporated into the new Standing Rule on Awards and into the Guide for Operation of the Awards Subcommittees accompanying it. Mr. Kuehni's committee was asked to recommend the nature and source of the physical award in question, which will be obtained with the general funds of the Council. It is the intent of the Board to appoint a Subcommittee for the Service Award to solicit nominations as soon as the nature of the physical award has been approved and a supply obtained.

Also at the April Board meeting, plans were made for a one or two day special meeting of the Board to consider matters of long-range planning in light of the report of the Planning Committee (reproduced elsewhere in this issue). It was hoped that this meeting could be scheduled for the fall of 1980, but circumstances may delay it.

The final program for the Williamsburg 1981 meeting was received from the program cochairmen, Bonnie Bender for the ISCC and Alan Robertson for the Canadian Society For Color. Edward L. Cairns was appointed General Chairman of this conference. The brochure for this meeting will be prepared as soon as possible.

The meeting was closed by Franc Grum with thanks to the retiring Officers and Directors.

Fred W. Billmeyer, Jr.

REPORT OF THE ARRANGEMENTS COMMITTEE BONNIE K. SWENHOLT, CHAIRMAN

Mrs. Swenholt assisted substantially in the arrangements for the 1980 Annual Meeting before assuming the position of Chairman of this new Standing Committee. The first major task of the committee will be to take responsibility for the arrangements for the 1981 Council meeting.

REPORT OF THE BY-LAWS COMMITTEE S. LEONARD DAVIDSON, CHAIRMAN

At the request of the Board of Directors, the By-Laws Committee acting as a committee of one prepared the following changes in the Standing Rules:

1. Add the following Article SR I - Committees, Section 2 - Permanent Standing Committees: Planning Committee, Arrangements Committee, Member-Body Liaison Committee, and Awards Committee.

2. Modify slightly the wording of paragraphs (c) Membership Committee, (e) Problems Committee, and (f) Publicity Committee.

3. Add Article SR V - Awards, including a Guide for the Operation of Awards Subcommittees as an Appendix.

4. Add the existing Guide for the Operation of the Problems Committee as an Appendix. (This document was prepared by Ruth M. Johnston-Feller, then Chairman of this committee, in 1976, but had not previously been made available to all members of the Council.)

5. Modify Article SR II - Dues, Section 5, Overseas Postal Charges to read \$6 per year.

All the proposed changes were approved by the Board of Directors. A new booklet containing the Constitution, By-Laws, and Standing Rules will be issued in the summer of 1980.

REPORT OF THE EXECUTIVE COMMITTEE

The Executive Committee (F. Grum, Chairman, W. D. Schaeffer, Fred W. Billmeyer, Jr., S. L. Davidson, and C. W. Jerome) met many times during the year by telephone to handle the immediate affairs of the Council between meetings of the Board of Directors. The results of the actions of the Executive Committee were confirmed in all cases by the Board at its next meeting and are recorded in the Minutes of the Board meetings.

Respectfully submitted

Fred W. Billmeyer, Jr., Secretary

REPORT OF THE FINANCE COMMITTEE S. LEONARD DAVIDSON, CHAIRMAN

Attached is the proposed budget of the Inter-Society Color Council for 1980 and a comparison of the 1979 Budget with the actual income received and the expenses incurred during 1979.

You will note that we are budgeting a \$773 deficit for 1980 as compared to a budgeted surplus of \$77 for 1979 and an actual surplus of \$2,698 for the past year.

It should be noted that we do not expect the surplus that we had in 1979 because the printing of the membership list must be included in the 1980 Budget. The inclusion of this item of \$1,450 and minor increases in other accounts totaling \$600 are responsible for the total increase in expenses shown in the proposed budget. Based on the registration for Williamsburg '80 and the higher expenses incurred because the expenses of most of the speakers were borne by the Inter-Society Color Council, we do not feel that our net on this conference will match that generated by the '79 Williamsburg Conference.

The increase in income from Member Body Dues that is anticipated in 1980 will be the result of collecting dues that were not paid in 1979.

Despite the proposed deficit of \$773, we do not propose an increase in the dues of either the Member Bodies or the Individual Member Group. Unless there are major expenditures to be

made that have not been anticipated, we feel that even with the proposed deficit, we will not be required to use the surplus funds of the Council for operating purposes in the coming year.

PROPOSED 1980 BUDGET

	1980 Budget	Budget	1979 Actual
Income			
Member Body Dues	\$ 2,900	\$ 2,700	\$ 2,400
IMG Dues	9,500	9,000	9,626
Annual Meeting (Net)	1,800	1,800	1,349
Williamsburg '79 (Net)		1,500	2,985
Williamsburg '80 (Net)	1,700		
Other	1,000	700	984
Total Income	\$16,900	\$15,700	\$17,344
Expenses			
President's Office	\$ 200	\$ 200	\$ 0
Secretary's Office	3,500	3,200	3,200
Treasurer's Office	700	600	604
Board of Directors	700	500	704
Newsletter	9,000	9,000	8,142
Audit	450	450	425
Committee Expense	150	150	118
Printing Membership List	1,450		
Amortization			
Newsletter Covers	1,023	1,023	1,023
Miscellaneous	500	500	430
Total Expenses	\$17,673	\$15,623	\$14,646
Excess of Income Over Expenses	(\$ 773)	\$ 77	\$ 2,698

REPORT OF THE MACBETH AWARD COMMITTEE C. JAMES BARTLESON, CHAIRMAN

Macbeth Award Citation

The 1980 Macbeth Award Committee of the Inter-Society Color Council, after due deliberation and balloting, has selected from among an impressive list of worthy candidates PROFESSOR WILLIAM DAVID WRIGHT to be recipient of the ISCC 1980 Macbeth Award.

The Macbeth Award was established by the late Norman Macbeth, Jr. in honor of his father, Norman Macbeth. The Award is presented no more frequently than biennially for outstanding recent contributions to color.

Dr. Wright's lifetime contributions to color comprise an imposing list which is familiar to all who have any interest in the subject of color. He graduated from the Imperial College of London University in 1926 where he had studied physics and optical engineering. Fortunately for the world of color, the great depression of that post-war period prevented him from finding suitable employment in the optical industry; so, instead, he accepted a grant from the Medical Research Council to continue his researches at the Imperial College by studying color. After building a colorimeter, which with some modification is still in use at Imperial College today, he measured the color matching coefficients of ten observers, a research project for which he was awarded the degree of Doctor of Philosophy

by London University. These data, together with similar data for seven observers collected by J. Guild, formed the basis for the 1931 standardization of colorimetry by the Commission Internationale de l'Éclairage. The prolific outpouring of highly respected research since that time has made his name virtually synonymous with color science.

In addition, his encouragement of the application of color science to practical problems has been unfailing throughout his long career of teaching and since his retirement. To that end he was a prime mover and founding chairman of our sister society, The Colour Group (Great Britain), whose objectives are essentially the same as those of the Inter-Society Color Council. Incidentally, the year of the founding of The Colour Group, 1940, was the same year in which Dr. Wright became an individual member of the ISCC, a membership that continues to this day, some forty years later! Not merely a corresponding member, he has remained active in ISCC affairs over the years (I have in my possession a photograph of Professor Wright at the head table on the occasion of the twenty-fifth anniversary meeting of the ISCC in New York in 1956, and who among us remembers an ISCC Williamsburg Symposium during the past decade at which he was not present?). He served as first President of the Association Internationale de la Couleur, the international color association that attempts to do for the world what the ISCC does for the United States and The Colour Group for Great Britain. He has published several editions of five books on color, has received a number of awards including the Newton Medal of The Colour Group and the 1977 Deane B. Judd AIC Award. In short, his career has been long and prestigious.

But by bestowing this 1980 Macbeth Award upon Dr. Wright, we offer him a singular honor. This award is unique among the others that he has received, for it is not awarded to honor his renowned, life-long contributions to color. Rather, it is in recognition of his outstanding contributions to color since his retirement, the period of his accomplishment in less than the past ten years! He has remained very active in color, especially in teaching and applications areas.

David Wright has long been a proponent of the concept that color should be a part of the general curriculum of schools. In a talk that he gave at an international gathering in France in 1960 he summarized his attitude toward the teaching of color in saying: "I see (color) as a General Studies subject, bridging all the sciences, a central element in arts and crafts, and providing a point of contact with philosophy and even religion. A perfect subject, in fact, for comprehensive education." Since his retirement, he has practiced what he has preached. He has been guest and visiting professor at the University of Calcutta, in India, the University of British Columbia and Waterloo University, in Canada, and at the City University of London. He has introduced the subject of color to aspiring optometrists, physicists, artists, and general studies students alike. He has, in other words, used his time of retirement from teaching to become an active teacher, encouraging the study of color over a broad base of education.

At the same time, he has lectured widely to scientific audiences about the wealth of information and new perspectives that they could gain from artists, and to artists about the help they could receive from color scientists. To illustrate the application of color science in areas of art history and preservation, he has built still another colorimeter; this one designed to provide colorimetric specifications of priceless works of art without endangering them by contact or exposure to excessive

energy. Working together with the curators of the Courtauld Institute and Galleries in London, he has clearly demonstrated the utility of applying color science to the preservation of paintings.

In short, after a long and fruitful career in color science and teaching, Professor Wright has not been content merely to rest on his appreciable laurels. Instead, he has begun a whole new career devoted to the promotion of color. It is for his innovation and outstanding contributions to color in this new career that we are gathered here today to pay him tribute by bestowing upon him the ISCC 1980 Macbeth Award.

I count it a rare privilege to offer this award on behalf of the 1980 Macbeth Awards Committee, the Board of Directors of the ISCC, and the entire Inter-Society Color Council to PROFESSOR WILLIAM DAVID WRIGHT.

REPORT OF THE MEMBER-BODY LIAISON COMMITTEE

JOYCE S. DAVENPORT, CHAIRMAN

There has been considerable communication with the Chairmen of the Member Body Delegations throughout the year. Reports of meetings and activities of the Board of Directors have been sent to both the Delegation Chairmen and the Liaison Officers of the Member Bodies. Changes in the Delegations have been reported in the Newsletter as received, and Delegations not reporting changes have been reminded that they are due, along with annual reports, each year at this time.

REPORT OF THE MEMBERSHIP COMMITTEE

BONNIE BENDER, CHAIRMAN

The Membership Committee is in contact with several national societies which have been recommended as possible Member Bodies of the Council. Negotiations of this type tend to be long-term, and no concrete results have yet been achieved.

In the revision of the Standing Rules approved in April, it was made clear that the Membership Committee is responsible for recommending only new Member Bodies, not individual members.

REPORT OF THE PLANNING COMMITTEE

ALAN R. ROBERTSON, CHAIRMAN

The scope of this committee is to examine, study, define, prepare and recommend future goals of the Council, such that experts in the field of color will be challenged to participate in the ISCC problem-solving functions.

The Committee made the following recommendations to the Board of Directors at its April 20 meeting:

1. The Board should endeavour, whenever possible, to assign specific small jobs to "new" people so that these people can be evaluated before they are considered for larger responsibilities. This would help avoid the situation where a "new" person turns out to be unable to contribute effectively even though he or she has been given a key position in the Council.

2. The Project Committees should be encouraged to define specific manageable tasks, within their scope, and to produce written reports on the completion of these tasks every few years.

3. Workshops, such as those held at the 1978 Annual Meeting, should become a regular feature of Annual Meetings.

4. From time to time, the Board of Directors should hold a special meeting. Regular business should not be discussed at

this meeting. Instead, attention should be paid to a broad evaluation of the Council's program with particular attention to the next 3 to 5 years. Appropriate guests should be invited. Agenda items for such a meeting were identified by the Board at its April 20 meeting.

REPORT OF THE PUBLICATIONS COMMITTEE WILLIAM BENSON, CHAIRMAN

The past year's newsletter speaks for itself. Some additional "newsy" items appeared, we think for the better.

In the coming year a new feature series will be inaugurated and an old one renewed. These are in response to the suggestions we received from the reader survey conducted recently.

The new series will report on color research presently active at various college, university, and corporation laboratories. We will renew a more active program of book reviews. We hope you enjoy them and would appreciate your comments pro or con.

One other area we would like to see expand is the Letters to the Editor section. This, of course, depends upon you, the membership, to submit the Letters.

With that as a challenge, we conclude the report.

Edward L. Cairns

REPORT OF THE PUBLICITY COMMITTEE

No chairman has yet been appointed for this new Standing Committee. Interested volunteers would be welcomed.

REPORT OF THE PROBLEMS COMMITTEE WILLIAM D. SCHAEFFER, CHAIRMAN

Specific developments or changes in the status of Project Committees are reported in the following items.

To the chairpersons who have nurtured their committees' activities during the past two years, I want to express the appreciation of the Board and Officers, and add my personal thanks. With new leadership by the President-Elect, Mr. Louis Graham, you will find encouragement and stimulation.

To our ISCC members who are not involved in ISCC Problems Committee activities, may I encourage you to participate. It is a challenging, learning experience.

REPORT OF PROJECT COMMITTEE 6 SURVEY OF COLOR TERMS C. JAMES BARTLESON, CHAIRMAN

This Project Committee has asked to be placed on standby status pending completion of work in the CIE concerning new color terms for the fourth edition of the International Lighting Vocabulary and pertinent CIE Technical Reports. At that time these terms can be added to the survey, which is largely otherwise complete.

REPORT OF PROJECT COMMITTEE 7 SURVEY OF AMERICAN COLOR SPECIFICATIONS ROBERT F. HOBAN, CHAIRMAN

Committee on standby status. No report.

REPORT OF PROJECT COMMITTEE 10 COLOR APTITUDE TEST ROBERT T. MARCUS, ACTING CHAIRMAN

This year marked the 40th anniversary of the Committee. As an historical introduction, Lou Graham, a previous chairman of the Committee, gave a brief synopsis of the Committee's history.

Discussion then centered on color-aptitude and color-vision testing. Included in this discussion were such aspects as: can color discrimination be improved with training (Steve Bergen has evidence that it can)?; can the Color Matching Aptitude Test be used as an educational tool?; or what use is such a test and what are the potential legal ramifications of the use of color-vision and discrimination tests; David Wright mentioned how general color-vision screening is performed in England, with no similar screening in the United States. There was also a summary of the Federation of Societies for Coatings Technology's involvement with the Color Matching Aptitude Test by Tom Kocis, the Federation's Field Director.

Bob Marcus, acting chairman of the Committee, posed the question of the future activity of the Committee. Germane to that discussion was the scope of the Committee. Nobody had direct access to the scope, but Dorothy Nickerson was able to help with the historical background. The scope of the Committee seems to be to develop and validate a test for measuring a person's ability to discriminate small color differences. Most of the effort was related to questions revolving about World War II. An experimental version was released in the 1940's with total commercialization in the 1950's, improvements in the 1960's, and the latest release in 1978. The Federation's delegation to the Inter-Society Color Council is in the process of comparing the 1978 edition with the 1964 edition. The Federation's inventory of the current edition is sufficient for about three or four years, at which time further guidance from this Committee or another ISCC Committee will be sought.

Overall, however, most of those present felt that the scope of the Committee has been completed and that the Committee should become inactive. The acting chairman will take the proper actions to accomplish that task. However, he will wait until after this report has been published in the ISCC Newsletter. If there are objections to this decision, please contact the acting chairman at the Mobay Chemical Corporation, Hightower Building, 100 Hightower Road, Pittsburgh, PA 15205.

REPORT OF PROJECT COMMITTEE 18 COLORIMETRY OF FLUORESCENT MATERIALS THOMAS E. CULLEN, CHAIRMAN

The annual meeting was opened by Tom Cullen, the Chairman of the committee. The first report was given by Dr. Fred Billmeyer on Task Force I which is the evaluation of methods used to predict total radiance factors for fluorescent materials. Dr. Billmeyer discussed the results of an evaluation of the several methods used to predict the total radiance factor of fluorescent materials. Complete details are available in a report by the NBS #GCR-70-185 entitled "Colorimetry of Fluorescent Specimens - A State-of-the-Art Report." Dr. Billmeyer stated that a number of problems existed in evaluating the various methods. These problems are:

1. There is no standard *D* 65 source defined by the CIE.
2. The CIE just now is determining how to evaluate simulators.
3. The viewing booths have one type of "daylight," and in-

struments you can use have another type of "daylight."

4. In measuring the samples on seven or eight different instruments, you can get up to four times as much fluoresced energy on one instrument from another.

There will be two papers published by Dr. Billmeyer in *Color Research and Application* around the November-January time frame. One will be discussing the talk that he presented and the second will be on testing simulators visually. The CIE Committee TC-2.3, Materials, is presently preparing a technical report entitled "Methods for Predicting the Spectral Radiance Factors of Luminescent Samples Under Standard Illuminants." This should be published about the same time frame as the articles in *Color Research and Application*. It is hoped that by 1985 the CIE will have adopted a standard method for testing daylight simulators. Presently, in working with the Committee TC-2.3 of the CIE, a request has been issued for participation of laboratories to evaluate the testing methods. The requirements are rather stringent to be able to participate in this study. A letter requesting participation was sent out in January which outlines the requirements of the laboratories for participation in this study. A number of people indicated that they would be attempting to participate in this study.

The second topic covered was a report by Dr. David Alman, Chairman of Task Force II, on fluorescent standards. This Task Force is working in coordination with the ISCC Committee on Materials for Instrument Calibration. Dave Alman concluded from the report that you could not produce permanent standards. He stated that the samples could not be made stable enough. After questioning by Fred Billmeyer and Franc Grum concerning the intensity of the daylight used to evaluate these samples, it was decided to re-evaluate the samples using intensities closer to those that would be found in instruments. Rolf Kuehni suggested that the measurements should be made more frequently to determine if a level of stability can be reached. A number of suggestions were made from the field for additional samples to be used.

Rolf Kuehni reported on the investigation with Eugene Allen of computer color matching using fluorescent dyes. Essentially, five fluorescent dyes and two non-fluorescent dyes on acrylic textile materials have been prepared, as well as 1, 2 and 3 dye combinations. True reflectance measurements were made by Franc Grum. Formulation programs were used to compare the results using the true reflectance measurement versus standard reflectance measurements. Two different types of formulation algorithms were used, (1) regression algorithm which uses the least squares and (2) a tristimulus match algorithm. A general conclusion drawn from these results was that the true reflectance method produced somewhat better results, but not significantly better to warrant the current time and effort required to make such measurements.

Ralph Stanzola of Applied Color Systems, using the data that was generated by Allen and Kuehni for their evaluation, has come up with a "black box" technique for measuring and formulating for fluorescent samples using their Spectro Sensor. His method requires a "dye calibration" procedure, and then after that uses one measurement of the sample to do a fluorescent calculation. He quoted some results that were much better than those quoted by Kuehni and Allen. However, the procedure could not be made known to us at this time. He indicated that the details would be published at some later date.

The next topic was a report on fluorescent work at Clemson by Fred Simon, Robert Funk and Cathy Thorpe. Ms. Cathy

Thorpe made the presentation. There have been two major areas of work going on at Clemson. One has been in cooperation with Fred Billmeyer in testing the methods of daylight simulator evaluation. The second has been the work done by Bob Funk on what is called the Relex method. This is a method to determine data for fluorescent primaries to be used in color formulation predictions. The major objective is to be able to formulate metameric matches using fluorescent dyes. Samples were shown that indicated a very good agreement on making initial metameric matches using fluorescent dyes.

In summary, it seems that we have one report using methods of predicting fluorescent matches that indicates there is little improvement and two other reports that indicate substantial improvement in making fluorescent formulations using special methods. As can be seen, additional work is required in this area.

REPORT OF PROJECT COMMITTEE 22 MATERIALS FOR INSTRUMENT CALIBRATION CHARLES J. SHERMAN, CHAIRMAN

The Chairman regrettably announced the resignation of Co-Chairman Dr. Ellen C. Carter. Dr. Carter served as chairman of this committee since 1974. Under her direction the "Guide to Material Standards and Their Use in Color Measurement" was completed and published as ISCC Technical Report 78-2. This guide is a noteworthy accomplishment and its usage will promote accurate color measurements. Dr. Carter plans to remain active in the committee as well as other ISCC activities.

A condensed version of "Guide to Material Standards and Their Use in Color Measurement" authored by Dr. Carter and Dr. Billmeyer was published in the Summer 1979 issue of *Color Research and Application* (Vol. 4, pp. 96-100).

A goal of this committee is to keep the "Guide" current and up to date. Bob Marcus updated the tables that give the sources of Standard Materials, Calibrated Material Standards and Calibration and Measurement Services. The 1980 revision of the Guide is available from the Secretary of ISCC, Dr. Fred Billmeyer.

The special interest task groups formed to select materials for more specific and complex measurements gave reports. Dave Alman, Fluorescent Materials task group coordinator, reported that the materials evaluated so far did not have sufficient exposure or temperature stability but they could be used as temporary standards, and work will continue in this respect. This task group is a joint endeavor with Project Committee 18.

In the absence of Jack Christie, task group coordinator, Directional Measurements, Bob Mason reported that progress in the selection of materials and procedures should be made by the next meeting. Ron Bostick, task group coordinator, Translucent Materials, was not present and no report was given.

Three additional special-interest groups were formed. Jack Hsia is the coordinator on Retroreflective Measurements, Cal McCamy on Terminology, and Ellen Carter and Henry Hemmendinger on Recommended Measurement Procedures. Henry Hemmendinger discussed the errors possible in reflectance measurements caused by translucent "Vitrolite" glass standards.

All members and guests were urged to indicate their areas of interest and work in this committee by completing the questionnaire that was available and mailed with the minutes.

**REPORT OF PROJECT COMMITTEE 25D
STRENGTH OF COLORANTS – DYES
LEONARD A. WEINER, CHAIRMAN**

The meeting of the committee on April 21st, 1980, was opened with the comment that the workshop-seminar, "Color Measurement Principles," presented the week before by committee members at the American Association of Textile Chemists and Colorists Technical Center, at Research Triangle Park, North Carolina, had been well received and that the committee was being asked to give a repeat of that seminar this coming October.

As to current and future proceedings of the committee:

1. A proposal was made that wire mesh be used as a reference neutral-density filter; samples of 16 x 16 stainless steel screen were handed out to the members attending so that results from individual testing by participants could be compared.

2. It was decided that the material on the round-robin on reflectance of dyed fabric, completed by the members, be put into final shape for presentation for publication.

3. The problems associated with the concept of Standard Depth were discussed, as well as the present status of relevant work among the committee members.

4. A proposal was made to establish a task force to determine acceptable and practical limits of accuracy throughout the textile industry regarding the Dyeing, Presentation and Measurement of Colored Fabric. Dyestuff, instrument and fiber manufacturers, as well as dyers, would be invited to participate.

**REPORT OF PROJECT COMMITTEE 25F
STRENGTH OF COLORANTS – PIGMENTED
FIBERS SECTION
GEORGE SONN, CHAIRMAN**

Purpose – Establishment of correlation between the colors of pigmented fibers and pigmented plaques, colored with the same source of color concentrate.

1. *Fiber measurements* – Measurements made vertical/horizontal of three sets of spinnings show average deviation of 1.5 – 1.7 ΔE. Request has been made of various concentrate manufacturers to prepare plaques made with the same concentrate, same levels, and to measure for comparison with fiber measurements. (No results yet.)

2. *Proposals* – It was suggested that methods of measurement and number of measurements may be inadequate.

a) A second set of spinnings will be made, by Phillips, for comparison to initial set.

b) Further measurements are to be made with 31-point spectrophotometer vs. 16-point already used – 3 volunteers.

c) Plaque measurements are to be compared with fiber measurements.

d) Variables which cause deviations in expected results are to be defined.

**REPORT OF PROJECT COMMITTEE 25P
STRENGTH OF COLORANTS – PIGMENTS
JOYCE S. DAVENPORT AND JACKIE WELKER,
COCHAIRMAN**

The annual meeting of this committee was opened by Joyce Davenport who introduced the other speakers and gave a brief overview of the work of the committee during the last year. This has been primarily in tinting strength using phthalo green, invariant samples. Jackie Welker gave a brief presentation on

the preparations, procedures and the instruments used in their testing. The procedure was aimed to control as many variables as possible. Joyce Davenport supplied the panels, Jackie Welker had them primed and prepared the white base. Then the white base and all material were sent to Joyce Davenport, Jackie Welker, Al Keay, and Ed Cairns. The procedure was rather detailed and random sampling was used to minimize systematic errors. Tristimulus data (X, Y and Z) and minimum reflectance (at 640 nm) of both SCI and SCE measurements on four different samples spots were obtained. Then the samples were re-measured by other participants. Instruments used to date were the General Electric Hardy, DuColor, Chromascan, MS-2000, and Cary 14. The data were passed along to Ed Cairns who will do the statistical analysis on strength determination.

Next Al Keay gave a short presentation on experimental error and talked about what the committee was doing to separate and analyze the sources of error via analysis of variance. This will be handled on a computer by Ed Cairns and the committee expressed their thanks to Ed for all his efforts and work in this regard. Errors between labs as a function of grinding, sprayout, the instrument measurement, etc. will be studied. It was specifically pointed out, however, that the key limitation will be the fact that they are presently using invariant samples.

The next presentation was by Ed Cairns who gave a brief overview of the statistical analysis which has been started, but not yet finished (expected to be completed by next year). Each lab prepared 24 panels and there were four labs. These were measured on a variety of instruments in a number of ways and this resulted in greater than 12,000 pieces of data for Ed to crank through programs and statistically evaluate. Some preliminary results indicate that the use of tristimulus values X or Y yield approximately the same results (converting the tristimulus data to K/S based on SCE measurements). Partial analysis of error is given below:

<i>Source of Error</i>	<i>Standard Error</i>	<i>Range</i>
Instrument	0.6%	0.2-1.1%
Spray Application	1.0%	0.2-3.9%
Grind/Dispersion Procedure	2.0%	0.8-3.6%

It was also found that the standard error (not the standard deviation nor the 95% confidence level error) was 4.4% between the labs and this result was achieved under fairly controlled conditions.

Based on the known weigh-out differences, it was expected that relative to the standard there will be a range of -12.5 to +12.5% in strength, i.e., total range of 25%. However, results to date indicate that SCE data produces a range of 21.2% and SCI data 18.8%. The reason for this is not yet known and the analysis of variance will continue with the report expected next year. For next year they will be comparing additional tristimulus data, K/S at the R minimum, raw SCI and SCE data, and several surface-correction techniques, and will produce comments on instrument versus instrument.

A general discussion followed this, such as whether the hue difference was considered. It was pointed out that the committee is first looking at the invariant situation; their second step will be to look at different color families (e.g., red). The third step to look at slightly dissimilar pigments and the fourth step to look at dissimilar pigments.

Both Jackie Welker and Joyce Davenport requested more volunteers for measurement, sample preparation and other

work. Questions arose whether or not the committee was covering enough ground? Were they looking at enough test methods? Some discussion ensued about the possibility of different options based on reflectance. It was stated that Diano uses an average of three wavelengths (at the point of minimum reflectance) and has an option for using 16 wavelengths which they term a "pseudo tristimulus integrated strength." Ralph Dinsmore of Phillips Fibers reported that this was somewhat better than the single wavelength measurement for his use in the production environment. Several people, however, suggested that the use of 16 wavelengths would not be useful and that using the average of three in the area of minimum reflectance is generally useful, especially when there is a slight shade difference. A question was raised about using internal reflectance versus external reflectance and whether or not taking the external tristimulus value and converting it to an internal K/S would be the same as converting the reflectance to internal reflectance and then calculating the tristimulus value.

There was some discussion regarding the validity of tristimulus data for strength calculations. Several people suggested that the use of single or three wavelengths presents a physical measurement, whereas the use of the tristimulus data is a psychophysical weighting and yet the criteria used for determining whether or not a strength method is valid, will be comparison to measured pigment weights and formula.

The committee agreed that guidelines for visual estimation of strength difference will need to be established and that the samples prepared, measured, and under current analysis will be passed along to the Committee on Examples of Industrial Color Difference Acceptability for visual analysis. Joyce Davenport then asked again for volunteers and closed the meeting.

REPORT OF PROJECT COMMITTEE 27 INDICES OF METAMERISM RALPH BESNOY AND ALLAN RODRIGUES, COCHAIRMEN

The Committee has undertaken two main activities:

(1) Observer experiments to study chromatic adaptation and metamerism.

(2) Identifying phenomena related to metamerism, which cause problems in industrial color matching, studying them, and developing appropriate terminology to describe them.

The procedure for the observer experiments was defined during the past year. The experiment uses three series of metamers, each series consisting of up to ten color chips. The observer is asked to estimate the magnitude of color difference between each chip in the series and a standard. The estimates are repeated under two different light sources. He also ranks the chips in order of increasing metamerism with respect to the standard under the same two light sources. The magnitude scales are related to each other using a grey scale. Procedures have been agreed upon and computer programs written to statistically summarize the observation data. Data has been obtained with ten observers and considerably more data will be collected during the coming year.

The Committee has started cataloging problems related to metamerism and of concern to industry with the goal of developing appropriate definitions and terminology for these problems. A paper "What is Metamerism," based on committee discussions of these problems has been approved by the ISCC Board for publication. It is hoped that its publication will fos-

ter a greater discussion among the color community leading to a resolution of these problems.

REPORT OF PROJECT COMMITTEE 30 COLOR IN THE BUILDING INDUSTRY

Upon the death of Mr. Waldron Faulkner, Chairman, this Committee was placed on standby basis until a new chairman can be located.

REPORT OF PROJECT COMMITTEE 32 IMAGE TECHNOLOGY LEROY DeMARSH, CHAIRMAN

This committee has now defined areas of review covering available standards and measurements affecting the interfaces and interactions among photography, printing and television.

REPORT OF PROJECT COMMITTEE 33 HUMAN RESPONSE TO COLOR ALEXANDER F. STYNE, CHAIRMAN

The meeting of the committee on "Human Response to Color" enjoyed presentations on research and research results by three distinguished speakers. Dr. Geoffrey Hayward, Director of the Institute of Behavior Research at the University of Massachusetts, reported on his formulation of a research matrix that will allow study of behavior patterns as influenced by lighting modes.

Dr. Richard Corth, Westinghouse research psychologist, spoke on physiological consequences of visual stimuli, while Dr. William Thornton explained the principles of the production of white light from narrow-band operation. He reported on reactions by the consumer public to three-phosphor-source illumination in a large chain of stores, which was most positive and ascribed to the source in use "catering to the color rendition following the Judd Color Reference Index" rather than the generally more popularly accepted CRI (Color Rendering Index).

The talks evoked lively response from the audience.

REPORT OF PROJECT COMMITTEE 34 COLOR DIFFERENCE PROBLEMS RUTH M. RICH, CHAIRMAN

After some brief welcoming remarks Chairperson Ruth Rich asked Dr. Alan Robertson to bring the committee up to date on developments in color-difference work since our meeting last year. Dr. Robertson described the work of Brockes, Strocka and Phaffhausen using a modified Rich method to gain color-difference ellipsoids in surface-color space. He also spoke about the work of Boynton in color-vision experiments using the describable-difference technique.

The committee experiment has not progressed at all and the chairperson requested the aid of persons who felt able to make sample sets.

The program for this meeting was a presentation by Dr. David MacAdam. After giving a brief historical review of the Optical Society samples, Dr. MacAdam described his work, now in progress, on validating the spacing of the various color scales that may be constructed using these samples.

**REPORT OF PROJECT COMMITTEE 35
COLOR AND APPEARANCE OF LIVING TISSUE
STEPHEN F. BERGEN, CHAIRMAN**

The new chairman of this committee, Stephen F. Bergen, introduced himself and acknowledged the retirement of the founder of this committee and past chairman Robert Sproull.

The first presentation was a discussion of the new version of the Dvorine Pseudoisochromatic Slide Test (PIC) for detecting anomalous color vision. The history and reason for its development, by the American College of Prosthodontists, (ACP) the member-body associated with this committee, was discussed. The need for a quick method of identification of dental students with this handicap was the reason for this project. It is a logistic problem to administer a PIC test individually if 200 subjects must be tested. This mass testing provides a quick screening system which identifies these color blind individuals. The ACP completed the statistical validation necessary to prove its effectiveness and at present this test is now available to dental schools. The need for this kind of test in business and in other educational facilities was also emphasized. Interest was widely shown and any group that is interested in obtaining a set of these slides should write to the following address for further information: Harcourt Brace Jovanovich, The Psychological Corporation, 757 Third Avenue, New York, N.Y. 10017 Att: Judith Gaynor. The use of a simple color-blindness test in educational and business areas can be a great aid in identifying and perhaps helping color-blind individuals. The existence of a corrective lens produced by the X-Chrom Corporation for anomalous trichromats was also mentioned.

A color-matching instrument for teeth named the Chromascan, produced by the Sterdent Corporation, was also mentioned. The device, essentially a colorimeter, is presently undergoing additional testing and recalibration so that a more useful instrument will eventually be available for this sensitive procedure.

Color matching of skin is another area of concern and investigation for the ACP. The chairman reported work that was done in relation to this field. Maxillofacial prosthetics is the rehabilitation of a patient through the use of artificial substances, specifically polysiloxane (silicone), to replace parts of the head and neck (ears, eyes, nose etc.) that have been lost due to trauma or surgery. The need for this service was demonstrated and emphasized by showing replacements for patients who have lost facial anatomy. Many times, plastic surgery is not possible because of medical-surgical restraints and time factors. Maxillofacial prosthetics plays a great role for these patients. Recently the Food and Drug Authority has laid down guidelines for toxicity of materials in contact with human skin. A material for use in our field was adapted and produced by Dr. John Lontz in the Wilmington, Delaware, Veterans Administration Medical Center. The material, a silicone, is nontoxic, has great tear and wear strengths, is spectrophotometrically close to natural skin, and serves as a good esthetic replacement for afflicted patients. A shade range of 6 samples exists at present, but an additional 6 intrinsically pigmented standard samples are currently under evaluation and in preparation. The need for a larger range is demonstrable visually because the color range of human skin is far greater than what is now available. Maxillofacial prosthetics is part of the field of dentistry and education of the public as to its existence and what it can do for these patients is sorely needed.

The publication of a text for dentists "Color Science and

Dental Art" by Jack D. Preston and Stephen F. Bergen, being published in 1980 by C.V. Mosby Corporation, was announced. The text, designed as a teaching course for dentists, includes basic science necessary for the understanding of color as well as "how to" produce an acceptable tooth match. One concept which is mentioned in the text is that of the partitive color system. Dr. Robert Sproull presented this concept to the committee. Partitive color or mosaic fusion is the combined visual effects of the additive and subtractive color systems which is operative when dentists alter the basic hue, value or chroma of tooth by the addition of surface colorants or stains. These metallic oxides do not follow the pure laws of subtractive color mixing and therefore this partitive concept is operative. It is similar to total color effects of pointilistic paintings, billboard signs, and even the Sunday comics.

New projects which the college is undertaking were then announced. Natural teeth exhibit fluorescence. This phenomenon will be further explored and demonstrated at future meetings. The College is in the process of advising and educating the dentists of the ACP of the existence of this phenomenon. The American Dental Association is currently doing research into finding materials such as europium, cesium, tin, and others which exhibit fluorescence and may be incorporated into porcelain, the material most prominently in use at present for manufacturing teeth.

Additional spectrophotometric studies are being investigated by Dr. Jack Preston, a member of the ACP delegation to the ISCC, so that teeth may be measured intraorally by the use of a fiber optics probe attached to a spectrophotometer.

Another project underway is the rearrangement of currently available tooth shade guides into a more organized system. Recent spectrophotometric analysis of these guides will hopefully enable us to accomplish this task.

The partitive color hypothesis will be subjected to investigation through the use of scanning electron microscopy. This will attempt to demonstrate that the materials currently available are not acting in a totally subtractive fashion and that this theory must also be understood.

Next year's meeting, marking the 50th anniversary of the ISCC, will hopefully attract increasing numbers of individuals to our committee who will be able to contribute their knowledge to solve our problems and guide us in productive directions. This problem committee was honored by the presence of Dr. W.D. Wright, the winner of this year Macbeth Award, and his wife. It will be through the input of great individuals like Dr. Wright that this committee will be guided, advised, and aided in solving problems related to living tissue. What may be new to us is certainly not new to individuals like Dr. Wright and the knowledge is certainly needed and welcomed.

At next year's meeting, a more detailed description of the fluorescence problem will be examined as well as an updated review of the status of the skin, PIC tests, and the other aforementioned projects. This report serves as a description of the ACP delegation's projects currently underway as well as the annual report of the annual meeting held in Rochester.

**REPORT OF PROJECT COMMITTEE 36
EXAMPLES OF INDUSTRIAL COLOR-
DIFFERENCE ACCEPTABILITY
ANTHONY J. PENTZ, CHAIRMAN**

This committee is attempting to assemble examples of industrial color difference acceptability at two levels, "tight" and

“commercial.” The first set of examples, which are variations of a pastel green, has been submitted for measurement. Circulation of the chips to committee members will begin at the conclusion of the measurement work. The committee members will examine the samples visually and judge them as tight, commercial, or unacceptable. Other examples are expected to be available for circulation before the end of the year.

REPORT OF PROJECT COMMITTEE 37 ARTIST MATERIALS JOY TURNER LUKE, CHAIRMAN

The fourth annual meeting of the Committee on Artists' Materials (#37) was convened at the Genesee Plaza Holiday Inn, Rochester, N.Y. by Chairman Joy T. Luke with 24 people present.

The minutes of the April 23, 1979 meeting were approved. A report from the Treasurer was given and approximately \$180.00 is in the fund. Old business consisted of reports from the following Task Groups.

1. *Task Group 01 – Pigment Identification, Treva Pamer.*

A. Organic Pigments, Report by Fred Billmeyer and Romesh Kumar. Organic pigments in artists' paints can be separated using a solvent-extraction method and subsequently identified using solution spectrophotometry. The paint to be analyzed is first washed with acetone to separate the binder from the pigment. A series of 4 solvent extractions follows, with different types of pigments being soluble in specific solvents. The solvents are used in the following order: chloroform, methanol, dimethyl-formamide (DMF), concentrated sulfuric acid.

The extracted isolated pigment is then analyzed using the spectrophotometer. A log absorbance vs. wavelength plot is made and then compared to similar plots in a reference file. The reference file contains standard curves for each pigment in each specific solvent.

Each pigment has a characteristic log absorbance curve which is independent of the amount of coloring agent. A reference file of curves is being accumulated and the information is stored and available in digital form at Rensselaer Polytechnic Institute.

B. Inorganic Pigments, Report by Treva Pamer. At this time it seems that about 99% of the inorganic pigments used in artists' paints can be identified using x-ray diffraction. Hydrated chromium oxide was the only pigment encountered that could not be described by x-ray diffraction. Atomic absorption will be tried on this pigment.

C. Spectral Reflectance Curves for Alizarine and Quinacridones, Report by Treva Pamer. The reflectance curves for genuine rose madder, alizarin crimson, and quinacridone were compared and differences noted. Deflection in the green region was found for both natural rose madder and quinacridone pigments. However, this deflection did not appear to affect the appearance of the colors. In tints alizarin looked more like the natural rose madder than the quinacridone did.

2. *Task Group 04 – Tinting Strength, Irving Shack.* A report was circulated on work being done to develop a method for determining tinting strength. The use of weight rather than volume measurements and use of log absorbance information was described.

3. *Task Group ASTM D01.57.06 – Definition of Terms, Thomas Vonderbrink.* A report was made on the progress made by the task group.

New business consisted of the following:

1. *Use of Munsell Notations and ISCC-NBS Terms for Color*

Identification, Joy T. Luke. The use and advantages of using the Munsell Color system to describe color to the artist was presented. A Munsell chip color card was shown.

REPORT OF PROJECT COMMITTEE 38 PHILATELIC COLOR DESIGNATIONS DONALD L. MACPEEK, CHAIRMAN

At the end of the year 1979, the new and major reference work, “Color in Philately” edited by R. H. White and published by the Philatelic Foundation, had not appeared. As stated previously, the Committee's critical examination of this work is still required prior to taking a firm position on recommendations for reference works which will be used in the future by the Committee and Society members who may participate with us in reaching our long-term objective of simplified designations for colors used in stamp printing.

The Committee Chairman participated, along with Dr. Ivor Preiss of Rensselaer Polytechnic Institute, in a panel discussion “Color in Philately” chaired by Roy H. White. The seminar was broad in scope but focussed on technical aspects of stamp and cancellation color analysis, the history of color designation systems, and use of spectrophotometry and X-ray scanning for comparison and identification purposes with specific reference to colorant identification related to rare or unique philatelic items. The seminar did not draw a large crowd but those in attendance participated in and enjoyed the activities in Boston at STaMpsHOW '79

The press of other business made it impossible to discuss the objectives and scope of the Committee's program with the Board of Experts. A letter did, however, reach Board personnel. The response has been limited but sincere, indicative of potential support in the future when Committee activities will have become more advanced.

Laboratory determinations of Munsell Color Notations and Universal Color Language terminology for the component color chips in the “Stanley Gibbons Colour Key” have been completed. Similar information is being obtained and/or reviewed for other possibly useful color chip collections of possible use in the Committee program. This information will be prepared for publication at an appropriate time.

Committee goals have been updated to provide for finalization of the draft manual on determination of color designations for stamp colors, to facilitate round-robin testing by Committee members of our methods, and application of our revised procedures, for example, renaming of stamp colors for a given country and period. All of these activities are well underway and will be the subject of future reports.

The committee recognizes that a major obstacle to be overcome will be to find and interest people who have the stamps, who can be provided with the materials to determine color designation, who agree with the need to do the work, and who are willing to devote the time and effort to accomplish the task. It is felt that publication of the results of our ongoing activities in easy-to-understand form will be a prerequisite to issuing a call for additional help. Our continuing activities for 1980 will go forward with these sentiments in mind.

REPORTS FROM MEMBER-BODY DELEGATIONS JOYCE S. DAVENPORT, LIAISON

REPORT FROM THE AMERICAN ARTISTS

PROFESSIONAL LEAGUE DELEGATES ANGELO JOHN GRADO, CHAIRMAN

The AAPL held its 1980 annual meeting at the oldest art club in the United States, the Salmagundi Club in New York City, in June. The AAPL is now 52 years old and has approximately 1,000 members. Its last exhibition was held in the Federal Customs House area of the World Trade Center. About 210 nationally known artists exhibited their work.

REPORT FROM THE AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS DELEGATES THERESE R. COMMERFORD, CHAIRMAN

Research Committee RA 26, Color Measurement Test Methods, sponsored a symposium on "Color Science in the Textile Industry" which was held in Charlotte, N.C. on May 7-8, 1979. Max Saltzman served as honorary chairman of the symposium. Speakers included Dr. Eugene Allen of Lehigh, Dr. F. W. Billmeyer, Jr., of Rensselaer, R. L. Connelly of Burlington Industries, Dr. J. G. Davidson of Macbeth, C. E. Garland of DuPont, F. Grum of Kodak, Dr. H. Hemmendinger of Hemmendinger Color Laboratory, R. F. Hillman of Sears & Roebuck, R. F. Hoban of Sandoz, R. G. Kuehni of Mobay, K. McLaren of Instrumental Color Systems Ltd. (U.K.), F. T. Simon of Clemson, R. A. Stanziola of ACS, Inc., and B. K. Swenholt of Kodak. C. R. Williams of the U.S. Army Natick R&D Command spoke on "Instrumental Color Standards for Military Fabrics," at the Monday luncheon. Over 200 people attended the symposium, the first on color to be sponsored by AATCC.

A new purple polyester lightfastness reference fabric (LRF) has been developed by AATCC Committee RA50, Colorfastness to Light, as a replacement for the Blue wool lightfastness standards. RA50 has requested the Committee on Color recommend a procedure for sample presentation, color-measurement, and appropriate calculations on Fade-ometer exposed samples of the LRF. A set of exposures on an experimental piece of the purple polyester has been circulated to fourteen laboratories and been measured on ten color-measuring instruments. The samples were exposed at 2-hour intervals for a total exposure time ranging from 2 to 22 hours. The resulting data indicated fading on the material was non-linear beyond 18 hours exposure. A second set of samples from the first production lot of purple polyester will be similarly exposed and circulated to the participating laboratories as round-robin II.

The committee currently is investigating a new approach to standard depth determination. It is also studying the two Gray Scales (for Color change and for Staining) and the need to establish tolerances for both hue and chroma in the production of the chips.

A Workshop on "Color Measurement Principles in the Textile Industry" was held at AATCC Headquarters, April 10-11, 1980. The workshop will be repeated in October. Subject material covers both the reflectance measurement of textile materials and the transmittance measurement of dyestuffs.

Roland Connelly of Burlington Industries has been selected as the new chairman of RA36. As chairman of this committee, he automatically assumes the chairmanship of the AATCC delegation to ISCC.

Bibliography, 1979 (from Textile Chemist and Colorist):

T. Downes, "Zero Adds: Let Color Be Your Guide," *Textile Chemist and Colorist*, 11, 120, (1979).

R. A. Stanziola, "Computer Color Matching in Textile Printing," *Textile Chemist and Colorist*, 11, 91 (1979).

REPORT FROM THE AMERICAN CERAMIC SOCIETY DELEGATES F. JOSEPH VON TURY, CHAIRMAN

"Color is most vividly and widely expressed in our civilization through ceramics. Colors range from crystal clear glass to the bold and brilliant porcelain enamel artware." These were the comments accompanying the cover feature of *Ceramic Industry* magazine of November, 1979. Articles included were: Ceramic Colors for the 80's. Industry Follows Market Equipment in Action. Ceramic Colors: History, Development, Usage.

A west-coast magazine, *Designers West*, in its April 1980 issue brought out an extensive report on ceramic tile with interesting color photographs illustrating color trends in tile used as decorative accessories. In the same issue, the 1980 Ceramic Tile Institute Award winners were pictured showing a most effective combination of color, texture and design.

Although most of the ceramic tile material is mass produced, the trend is to give it a handcrafted appearance. It seems that the ceramic look is here, where differences in shadings are not a disadvantage but are used in a random assortment for the handcrafted effect. In some installations, colored grouting is serving the same purpose.

The exciting illustrations in the promotion of decorated tiles sometimes lead to the improper use of this material; for instance, using low-fired, soft tile material on floors. (Consumer education in this regard would be helpful.)

At the recent New York China and Glass Show, one found colors from the most delicate pastel tones moving into the darker but rich earthy tones, and these were found on the finest china to the most casual ware. Cobalt blues, white, and lilac shadings to plum were favored colors. Motifs in stylized florals were used as decors. Accent colors were fresh green and bright blue.

In the styling of the ware, an international taste is evident. As a new feature we see table linens coordinated with dinnerware in color and design. Villeroy & Boch recently introduced a line of polyester tablecloths in a few of its popular dinnerware and cookware patterns.

The employment of more fashion designers in the tabletop industry may turn that industry from a follower into a leader in innovative design and color.

An attraction of the Show was the presentation of "Studio Ceramics," following a trend of increased public interest in studio-made tabletop pieces. This ware shows subtle variations in color and finish. The color of these pieces is due to the nature of the raw material used.

In ceramic artware, interest is being shown in reproducing museum collection pieces, and especially the Chinese monochrome porcelains in Imperial yellow, celadon, leaf green, clair-de-lune, peach bloom, sang-de-boeuf and cherry.

At the American Ceramic Society's 82nd Annual Meeting in Chicago this past May, the Whitewares Division had two color-related papers on its program. Dr. Eppler of Pemco Products, Mobay Chemical Corp., gave a talk on "Cobalt-free Black Pigments." He discussed the structure and properties of these pigments, as well as the conditions under which they may be used. Dr. H. D. de Ahna of Degussa Corp., Frankfort, W. Germany, spoke on "Inclusion Pigments: A New Type of Ceramic Stain with Examples of Its Application." He discussed the use of a

new principle—the inclusion of colored compounds in crystal-line phases. Ceramic pigments, including red, have been made with exceptional stability.

The U.S. government is in the process of restoring and renovating various historical buildings. In many cases this involves the replacement of architectural ceramic material which was manufactured nearly 100 years ago, either made here or in England or Germany. There is considerable difficulty in finding the original sources, many of which have ceased operation, or to find manufactories willing to cooperate on the projects. In most of the cases, only spot replacement is necessary, which besides matching the color, must have an antiqued finish also. Such projects are the U.S. Capitol floor, the National War College in Washington, and the Roger Williams National Memorial in Providence, R.I.

Following are some reports of the delegate members.

Laurence D. Gill, Manager, Glaze and Color Development, Mobyay Chemical Corporation, Pemco Products:

"It is difficult to summarize a year where no really new colors have captured the market's fancy. Continued growth of the off-white shades (bone, almond, parchment, and ivory) has dominated the major appliance industry. Even though copper-tone has virtually died in major appliances, there is renewed interest in dark chocolate browns for sanitary ware. Other than browns or marbled tans, no new colors seem to have attracted any attention in this area.

"For dinnerware, stoneware glazes continue to attract attention. Last year, because of escalating costs, the use of cobalt blue dropped dramatically. This year the high cost of gold and other precious metals has influenced decorations on plain white dinnerware. No clear alternatives have yet developed for banding treatments to replace cobalt blue, gold, and silver.

"The predominant colors in the tile industry remain in the earthy family: browns, tans, rust, and ochers. Although off-whites are gaining in popularity, there was no clear thrust on a new color. This is some indication that gray tones will begin to grow, but this is more speculation than fact at this date."

Paul W. Cook, Director of Design, The Sterling China Company:

"The trends and color directions during the past year in the commercial china business have been most diverse. Earth tones from dark brown to light beige are still big sellers. The so-called "naturals" are currently very much "in." There is a definite trend toward the lighter tones, however, as restaurant interiors are using more butcher block and lighter woods.

"*Texture* is being used more also. Speckles (sprayed or in the glaze itself), brush bands with the strokes emphasized, and overall patterns are popular. In conjunction with these textures, mix-and-match place settings are being sold. Solid colors, patterns, and different overall textures are being used together.

"As to color trends, blues are on the rise, such as cobalt blue and bright sky blue. Yellows are on the rise. Another definite trend in our industry is a change in the recently popular terra cotta. The transition is to a redder variety—like brick red or persimmon. For years in our china business, black and old gold were the perennial favorites, but not any more.

"Every year I attend the International China and Glass Show in Atlantic City and every year this show gets larger. Our commercial china industry usually follows the retail china market. As I previously mentioned, the market is so large it is difficult to call all the shots accurately. I asked many exhibitors about what color trends they have noted.

"Bright, fresh, clean colors are on the rise over the muted

tones. The earth tones are still the one strongest trend and it is foreseen they will continue to be strong."

The 83rd Annual Meeting and Exposition of the American Ceramic Society will be held in Washington, D.C., May 3-6, 1981. The ACS delegates to the ISCC in cooperation with the Whitewares, Glass, Enamel, Structural Clay, and Materials & Equipment Divisions, are planning a session on color for that meeting. We would welcome any help the ISCC could give in developing plans for this program.

Editor's Note:

F. Joseph von Tury was made an Honorary Life Member of the American Ceramic Society at its 82nd Annual Meeting held in Chicago recently. The Award is the highest honor the Society bestows on members whose careers are distinguished by excellence and service, and was given to him "in recognition of his continuing efforts on behalf of architectural ceramics and ceramic art." Mr. von Tury is a technology and design consultant for the ceramic industry, and a producer of architectural ceramics. Recently his work was included in the National Fine Arts Committee crafts exhibit, "Art for Use," commissioned for the XIII Olympic Winter Games held in Lake Placid this year. He has organized many joint sessions and symposia on color in the ceramic industry with the ISCC delegates and various Divisions of the ACS.

REPORT FROM THE AMERICAN CHEMICAL SOCIETY DELEGATES LAWRENCE R. LERNER, CHAIRMAN

This year our delegation has worked exclusively toward preparing for a symposium entitled "Advances in Color Technology," which is to be given on August 27th at the American Chemical Society Annual Meeting in San Francisco. The program was outlined in the January-February issue of the ISCC Newsletter and includes a number of speakers active in the ISCC.

In addition to the 14 scheduled speakers, Dr. John Thirtle will be presented the Leo Friend CHEMTECH award at the symposium luncheon. This award is presented annually for the best paper published in CHEMTECH. Dr. Thirtle's excellent paper entitled "Inside Color Photography" was published in January 1979.

Our activities for the coming year will depend on the responses and suggestions we receive at the conclusion of the August symposium.

REPORT FROM THE AMERICAN COLLEGE OF PROSTHODONTISTS DELEGATES STEPHEN F. BERGEN, CHAIRMAN

The report from this delegation is the same as and is combined with the report from the ISCC Committee on Color and Appearance of Living Tissue found earlier in this issue.

REPORT FROM THE AMERICAN INSTITUTE OF ARCHITECTS DELEGATES

This delegation has been on a standby basis pending the appointment of a new chairman after the death of Waldron Faulkner.

REPORT FROM THE AMERICAN PHILATELIC SOCIETY DELEGATES

DONALD L. MACPEEK, CHAIRMAN

The report from this delegation is the same as and is combined with the report from the ISCC Committee on Philatelic Color Designations found earlier in this issue.

REPORT FROM THE AMERICAN PSYCHOLOGICAL ASSOCIATION DELEGATES

EDWARD H. RINALDUCCI, CHAIRMAN

On June 28, 1980, the Board of Directors of the APA appointed Dr. Edward J. Rinalducci, School of Psychology, Georgia Institute of Technology, Atlanta, as delegation chairman, replacing Dr. Sidney Stecher. The remainder of the delegation has not yet been appointed. Dr. Rinalducci has submitted the following report of APA activities:

The 1979 APA annual meeting was held in New York City. The guest speaker was Dr. C. C. Ching, Assistant Director for Sensory and Perception Prosthesis, Chinese Academy of Science, Peking. He was the first color psychologist from the People's Republic of China to visit this country.

The 1980 APA annual meeting will be held in Montreal, September 1-5, and 1500 registrants are expected.

REPORT FROM THE AMERICAN SOCIETY FOR TESTING AND MATERIALS DELEGATES

HARRY K. HAMMOND, III, CHAIRMAN

The American Society for Testing and Materials (ASTM) is a non-profit organization that provides a system for publication of agreed-upon documents called "voluntary consensus standards." These standards, comprising test methods, specifications, definitions, practices, and classifications, are developed by task groups with expertise in specific areas, who choose voluntarily to work within the ASTM system. Current membership includes more than 28,000 organizations and individuals operating in 135 technical committees which are divided into numerous subcommittees and task groups. The 48-part Annual Book of ASTM Standards in 1979 contained over 6,000 standards.

The Paint Committee (D-1) is organized into subcommittees and task groups that deal with pigments, vehicles, the optical and physical properties of coatings, and tests of their characteristics. The Optical Properties Subcommittee headed by Charles Sherman of Sherwin-Williams has task groups dealing with measurement of color and gloss. Currently the Optical Properties Subcommittee, for example, has task groups working on gloss measurement, color-difference measurement, visual evaluation of metamerism, and selection of coating specimens for measurement.

The Plastics Committee (D-20) has similar involvement in the appearance properties of plastics. The Optical Properties Subcommittee headed by Jack Ladson of Gardner Laboratory is involved with such things as color, yellowness index, haze, and gloss.

The Appearance Committee (E-12), headed by Richard Hunter of Hunterlab, deals with appearance evaluation of all types of materials. There are active subcommittees designated (1) Editorial and Definitions, (2) Spectrophotometry and Colorimetry, and (3) Geometric Properties. Definitions of appearance terms are found in ASTM E284, originally issued in 1966, revised in 1971 and again in 1979 with about 60 addi-

tional terms being added or revised in 1980. E284 is the place to look for the meanings of all appearance terms. The work on definitions has been spearheaded for some time by Calvin McCamy of Macbeth but has now been transferred to Paul Tannenbaum of Du Pont. The Chairman of the Spectrophotometry and Colorimetry Subcommittee is Harry Hammond of Gardner Laboratory. This subcommittee is currently reviewing and revising test methods and recommended practices in these areas. The Geometric Properties Subcommittee under the leadership of Norbert Johnson of 3M Company is actively reviewing previously published documents in this area and is making excellent progress on drafting standards dealing with retro-reflecting materials, including color measurement under both daytime and nighttime conditions.

REPORT FROM THE AMERICAN SOCIETY OF INTERIOR DESIGNERS DELEGATION

ANNA CAMPBELL BLISS, CHAIRMAN

For 1980 the American Society of Interior Designers is focusing on limited goals. The development of professional practice criteria, public education regarding ASID's mission, and membership recruitment have been given priority. This year's national conference, to be held August 20-24 in New York City, will reinforce this program with the theme, "Design Power 1980." Leading designers and experts in many fields will also examine critical issues confronting our society and their impact on interior design.

Our delegation has made several proposals seeking greater emphasis on color in the long-range plans of ASID, and will work for greater involvement of the membership in the 50th anniversary of ISCC.

REPORT FROM THE AMERICAN SOCIETY OF PHOTOGRAMMETRY DELEGATES

At present this Member-Body has appointed no Delegation chairman; hence no report was received.

REPORT FROM THE ARTISTS EQUITY ASSOCIATION DELEGATES

LINDA LEWIS TAYLOR, CHAIRMAN

Artists Equity Association continues to give its full support to the ISCC Committee on Artists Materials. The committee is updating the National Bureau of Standards Voluntary Standards for artists paints.

AEA is in complete accord with the scope of the committee's work and gives its appreciation and admiration to chairman, Joy Luke. All artists everywhere are indebted to the work of this ISCC Committee.

National Artists Equity had a major role in the 11th International Sculpture Conference which took place this year in Washington, D.C., June 1980. Panel sessions, workshops, guests lecturers, and seminars provided a forum for the debate of crucial issues facing sculpture today and a meeting place for the exchange of ideas, techniques, and information.

The 4,000 conference participants as well as the general public viewed work by some of the world's leading sculptors — Larry Bell, Edward Kienholz, Louise Nevelson (past national president of Artists Equity), Isamu Noguchi, Claes Oldenburg, George Segal, Richard Serra, and Tony Smith — as well as the work of some of our most promising new artists. The sculpture was located throughout the city — along the Mall linking the

Washington Monument with the Capitol, which was the site of demonstrations and industrial displays, and in the open areas and public parks. Local galleries and museums will feature concurrent exhibitions.

The Washington chapter of AEA held two general meetings examining some aspects of color. On October 28, Dr. Duan Roth spoke about psychology and color. Dr. Roth incorporates work with color in his private psychiatric practice and had much to say about recent findings from research on color which is not only therapeutically valuable to his practice but of interest to artists.

Continuing the examination of color, Dr. Robert Glass, a sensory psychologist, spoke on January 13 on "color perception, a scientific viewpoint," and Mr. Brian Pierman, an engineer by training spoke about the psychological and physiological implications of color. Both men work for the Center for Building Technology at the National Bureau of Standards and both are members of the ISCC. Dr. Glass is a Research Psychologist in the Sensory Environment Program, and Mr. Pierman is the Chief of the Occupant Safety Program. The program was particularly interesting and informative.

Other local AEA chapters sponsored art shows and held special meetings which indirectly deal with color.

Two new members of the AEA delegation to ISCC are Michael Gast, the newly elected president of AEA, and George C. Koch, the new Secretary/Treasurer of AEA.

REPORT FROM THE COLOR ASSOCIATION OF THE UNITED STATES DELEGATES

At present this Member-Body has appointed no Delegation chairman; hence no report was received.

REPORT FROM COLOR MARKETING GROUP DELEGATES

JOYCE S. DAVENPORT, CHAIRMAN

Two national meetings were held during the year both equally successful and well attended. The Spring meeting, May 20th - May 22nd was in Louisville and the theme naturally reflected the location "Win! Place and Show Your Colors."

The emphasis on all CMG Spring meetings is the Color Direction Workshops which are for members only and are to discuss and evaluate color direction information in the various markets; from these workshops CMG publishes its color palette for future marketing of color.

The Spring meeting also featured Marketing, Education and Technical Directions where members were able to choose which area of interest they wished to attend. These new Direction Workshops have been so popular members have expressed a desire to attend more than one. Future plans hope to accommodate this request.

A varied program covering many topics provided a well rounded meeting:

"Plan It/Manage It" – Marketing Management in Action. Speaker: Robert Winchell – Curtis Paper/Division of James River Corporation.

"Confronting Conflict" – Workshop for Developing Conflict Management – Dr. Lawrence Al Siebert.

"Selling Color to the Uninitiated – An information panel originally presented to U. S. Government Agencies – G.S.A., D.O.D. and H.U.D.

Panelists:

Joyce S. Davenport – Supervisor Color Development – DeSoto, Inc.

Morris F. Gall – Director Advertising & Color – Glidden Coatings and Resin.

James Grabowsky – Manager Color Laboratory – Glidden Coatings and Resin.

R. Tom Holloway – Manager Colorant Division – Bennett Paints.

Other speakers and topics included the following:

"Celanese Concepts in Carpet Coloration 1980" – Jim Brown, Manager, Carpet Fiber Division, Celanese Corp.

"Innovations in Computer Design Developments" – Joseph Martin, Vice President, Marketing Sci-Tech Inc.

"Selling Color to the Media" – Abby Chapple, Home Furnishing Editor – Washington Star.

Program Chairmen – Monica Deitrich and Robert Marley.

The Fall meeting November 11th - 13th was held in West Virginia at the elegant Greenbrier amidst thousands of acres of wooded landscape, a beautiful setting for an intense and enlightening program, whose theme was "Color Marketing A New Decade." The program chairmen were Frances Forman (Yale Forman Designs), Robert V. Dale (Karastan Rugs) and Joseph Ableson (ICI Americas). The program commenced with the presentation of the 1981 Color Directions Workshops, and Dinner speaker for the evening was Francis X. Larkin, President – Karastan Rugs whose topic was "Lifestyle Marketing."

An excellent audience participation program for Marketing Directions was conducted by Dr. Dennis Healy, Professor of Marketing University of New Hampshire.

June Roche, Corporate Fashion Director of Milliken & Company, presented "Tapestries – The International Language – Influence Colors in the 80's." Fashion news from the fashion capitals of the world; a preview of clothes and styles to be seen and worn.

The Education Directions presented the style and design library and its use and function titled "The Library/A Different Target."

Technical Directions presented two speakers. Daniel Cannady, Westinghouse Corporation, spoke on "Introduction to Rotogravure." This pertained to the laminate industry and Mr. Cannady brought many samples from the Micarta Division for demonstration purposes.

"The making and Coloring of Kitchen and Bath Fixtures" was presented in a movie by Roger Lahm, Art Director of Kohler Corporation.

General sessions speakers were Bernard C. Koch, Marketing Training Coordinator of ICI Americas, covering "Effective Business Presentations" and a market-research film, "A Matter of influence," presented by John D. Smith, Art Director, Fisher-Price Toys.

The program concluded with a panel discussion of variety of industries utilization of the CMG colors which included:

Carpet – R. V. Dale – Karastan Rug Mills.

Laminates – Janice Threm – Formica Corporation.

Automotive – Lois B. Zolliker – Lois B. Zolliker Associates.

Resilient Flooring – Harry A. Shortway – Congoleum Corporation.

Paper Products – Elaine Brochocki – St. Clair Manufacturing.

Color Marketing Group has had many successful regional

meetings during the year primarily on the east and west coast. Members have also collaborated in industry presentations and have been fortunate to meet during markets such as the Chicago market where Jim Brown of Celanese Fibers invited CMG members to his company's showroom.

REPORT FROM THE DRY COLOR MANUFACTURERS ASSOCIATION DELEGATES AL M. KEAY, CHAIRMAN

The dry Color Manufacturers Association celebrated its fiftieth anniversary during the annual meeting in June. The meeting was held at the usual location Greenbrier, White Sulphur Springs, West Virginia, and had one hundred and twenty attendees. The program featured a record number of business, educational and social events.

Announcements were made regarding the election of new officers, which are as follows:

President — Paul Papillo, Ciba-Geigy.

1st Vice President — Allan Weissglass, Magruder.

2nd Vice President — Justin B. Arnold, Paul Uhlich.

Newly elected board members for three years are:

John Dickenson, Harshaw

Jeff Lipton, Du Pont

Phil Pope, Pope Chemical

Ted Potter of Shepherd, Chemical will fill a one-year vacancy left by Mr. Weissglass' election to office. Elected for an additional one-year term as Secretary-Treasurer and Executive Vice President was Larry Robinson. Mr. Robinson is the DCMA liaison to the ISCC.

Keynote speaker at the annual meeting was Robert Gans, President of Gans Ink Company of Los Angeles, who spoke at the opening luncheon on "*Let There be Color,*" and Richard Stuckey, Assistant Chief Economist for Du Pont, who spoke on the economic *outlook for 1980 and beyond*. Ecology Committee reports were again featured at the Ecology Forum, a review of regulatory activity of interest to pigments manufacturers was presented to SOCMA and AIHC Executive Director Ron Lang, and a film, "The Price" was featured as part of DCMA's ongoing antitrust education program.

Perhaps of interest to other member-bodies of ISCC as well as to individual members is an informative movie which covers Antitrust and Legislative update. *As part of this year's Annual Meeting, a film entitled "The Price" concerning antitrust activities was shown.* The film received an overwhelming response from those in attendance, and a number of individuals have inquired as to its availability. *DCMA now has a copy of this informative film which can be borrowed from the Association for a small handling fee to cover shipping and packaging.* DCMA members may wish to show this film to their employees and associates. *Also presented at this year's Annual Meeting was the DCMA Legislative Update — June 1980.* This semiannual review of legislation of interest to pigments manufacturers is also available from the DCMA office; Arlington, Virginia.

DCMA has many informative papers on various aspects of governmental legislation for which details are available in general bulletins; many cover important current events, e.g. proposed and issued rules of EPA, OSHA, etc.

DCMA continues to hold its monthly meetings at the New York Athletic Club with the exception of March 4, 1981, location to be announced. The 1981 DCMA annual meeting will be held at the Greenbrier, June 14 - 17th.

REPORT FROM THE ENTOMOLOGICAL SOCIETY OF AMERICA DELEGATES

J. HOWARD FRANK, CHAIRMAN

The Entomological Society of America is committed to the promotion of all aspects of the science of entomology. Its current membership, including international members, is approximately 8,000. Its headquarters are at College Park, Maryland, where the Executive Director has a staff to assist in routine business including publication of the Society's journals. The publications include: the bimonthly *Annals of the Entomological Society of America*, *Journal of Economic Entomology*, and *Environmental Entomology*, the quarterly *Bulletin of the Entomological Society of America*, the irregular *Miscellaneous Publications of the Entomological Society of America*, and *Thomas Say Foundation* volumes, as well as the *monthly ESA Newsletter*. The governing board includes an elected President, Presidents of 5 Branches representing geographical regions within the United States, and Chairmen of 6 Sections representing different disciplines of entomology. There are several standing committees and special committees.

The ESA Special Committee on Color Standards was formed in 1976 to investigate ways in which color nomenclature could be improved in descriptions of insects. Its annual reports are published in the *Bulletin* of the ESA. The committee examined a range of both extant and out-of-print color standards and found none of them totally satisfactory. In 1976 it learned of the existence of the Color Standards Committee of the Mycological Society of America and, finding similar objectives there, decided to collaborate fully to further the objectives of both committees. Currently, the 2 committees are considering the publication of a new color standard, of low cost yet high quality, using visually equispaced color samples, for the use of biologists of all disciplines, internationally. A prototype has been assembled. Progress towards the new color standard has been brought to the attention of biologists of disciplines other than entomology and mycology, and international interest has been aroused among biologists. A sponsor for this new color standard is to be sought.

REPORT FROM THE FOUNDATION FOR ANALYTICAL RESEARCH IN THE ARTS, LTD., DELEGATES

ROY H. WHITE, CHAIRMAN

The Foundation for Analytical Research in the Arts, Ltd. was incorporated in the State of Maryland in the late Fall of 1979. The primary objective of the Foundation is to provide facilities and personnel for furthering research in the application of advanced technologies to the identification and authentication of objects of art, artifacts, and archaeological findings, and to assist in training individuals in the application of developing techniques.

During the six months ending June 30, 1980, we were able to acquire and place in operational order an X-ray fluorescence analysis (XRFA) system for the determination of the elemental content of a wide variety of artifacts, including examples of ceramics, natural and synthetic fabric components, composition of printing inks, etc.

We have been particularly active, in conjunction with support from The Rensselaer Color Measurement Laboratory, in correlating solution spectrophotometric analyses with elemental analyses using XRFA; this has been a continuation of our collaborative effort in the examination of United States

postage stamps and postal history. During the course of our numerous examinations and studies of various philatelic items, we have observed some interesting characteristics of the pig-menting materials used in the formulation of the printing inks. Beginning with the 1890 issues, we have found many to contain a combination of both mineral and dye colorants.

While it is true that the larger number of objects we have examined have been of a philatelic nature, we have had the opportunity to study the composition of inks used in printing commercial lithographs, posters of various types, and the wrappings on commercial items (e.g.: tobacco, soap, and food containers). We expect to report on the results of a few of these studies in the forthcoming publication of Philatelic Research Ltd., an Encyclopaedia of Color of United States Stamps 1847-1918.

We have a particular interest in developing a more rigorous procedure for extracting the organic-colorant components from printing inks of various periods, and in that connection have been discussing the support of such a program with Dr. Billmeyer. The need for somewhat more quantitative methodology is required in the examination of thin-film deposits of colorants, particularly as one encounters them in the printing inks associated with lithographic and offset reproductions.

REPORT FROM THE FEDERATION OF SOCIETIES FOR COATINGS TECHNOLOGY DELEGATES

ROBERT T. MARCUS, CHAIRMAN

A major concern of the ISCC delegation over the past year has been the planning of another Symposium on Color and Appearance Instrumentation (SCAI) scheduled for March 24-26, 1981 in Louisville, Kentucky. Fourteen out of the sixteen contacted speakers have given firm commitments to date with the remainder expected in the next couple of weeks. Among the speakers will be Dr. W. David Wright, who will talk about the experimental origins of the 1931 CIE system of colorimetry. The 1981 SCAI will follow an almost identical schedule as the 1978 Cleveland SCAI.

Even though the ISCC Committee on the Color Aptitude Test will probably be put on standby status, the delegation will complete the comparison between the 1964 and 1978 versions begun last year.

Several color-related activities took place at the Federation's Annual Meeting in St. Louis. Ruth Johnston-Feller and Dennis Osmer won the Dry Color Manufacturers Association (DCMA) Award for their paper, "Exposure Evaluation: Part II - Bronzing." That award is presented for the best paper prepared on any aspect of the science or usage of color, use of colorants, or their behavior which is presented to the Federation. Dr. Gunter Wyszecki was presented with the Armin J. Bruning Award for outstanding contributions to the science of color in the field of coatings technology. Attached is a list of papers presented at the Federation's Annual Meeting. Also, attached is a list of articles published in the Journal of Coatings Technology in 1979.

Papers Related To Color Presented at The Federation of Societies for Coatings Technology Annual Meeting, Oct. 3-5, 1979, St. Louis, Missouri

"Plastic Pigment - A Novel Approach to Microvoid Hiding," by A. Ramig, Jr. and F. L. Floyd of Glidden Coatings and

Resins Division, SCM Corporation, Strongsville, Ohio.

"Hydrogen Bonding-Key to Dispersion," by H. G. Stephen of Kemrez Chemicals, Cheltenham, Victoria, Australia.

"Dispersion of TiO₂ In Water Borne Industrial Finishes," by J. M. Rackham of BTP Tioxide Ltd., Stockton-on-Tees, Cleveland, England.

"Color Vision and Colorimetry," by G. Wyszecki of The National Research Council of Canada, Ottawa, Ont., Canada.

"Usefulness and Limitations Of Kubelka-Munk Theory For Incomplete Hiding Paints," by R. Johnston-Feller of the Center on Materials of the Artist and Conservator, Mellon Institute of Research, Carnegie-Mellon University, Pittsburgh, PA and D. Osmer of CIBA-GEIGY Corporation, Ardsley, New York.

"Pigment Synergism and Pigment Antagonism In Automotive Pigmentation," by S. Panush of Celanese Plastics and Specialties Company, Detroit, Michigan.

Journal of Coatings Technology Articles of Interest to ISCC Members

A. B. J. Rodrigues, "Total Instrumentation In Color Manufacture," Jan. 1979, p. 49.

R. T. Marcus, "People Make or Break An Instrumental Color Control System," Jan., 1979, p. 53.

B. H. Todd, "Volumetric Computer Color Matching," Feb., 1979, p. 71.

H. R. Davidson, "Development Of Computer Color Formulation and Control," Feb., 1979, p. 78.

R. Johnston-Feller and D. Osmer, "Exposure Evaluation, Part II - Bronzing," March, 1979, p. 37.

D. C. Rich and F. W. Billmeyer, Jr., "Practical Aspects Of Current Color-Measurement Instrumentation For Coatings Technology," March, 1979, p. 45.

D. H. Cook, "Interplant Quality Control By Means Of Simple Tristimulus Colorimeters," April, 1979, p. 64.

D. W. Parker, "Computer Color Control In A Multi-User Environment," May, 1979, p. 44.

F. W. Billmeyer, Jr., "Current Status of the Color Difference Problem," May, 1979, p. 46.

R. E. Wolf, "Solar Collector Performance: A Dependence Upon Coatings," May, 1979, p. 49.

J. S. Christie, Jr., "Review of Geometric Attributes Of Appearance," June, 1979, p. 64.

E. J. Lowrey, "Practical Aspects Of Instrumental and Color Control In A Small Paint Plant," June, 1979, p. 75.

G. Kaempf, "Pigment-Polymer Interaction and Technological Properties Of Pigmented Coatings and Plastics," August, 1979, p. 51.

S. Keifer, "Colorimetric Assessment Of The Degree Of Flocculation Of Inorganic Color Pigments," Sept., 1979, p. 73.

R. F. Brady, Jr., "Federal Specifications: The Key To Government Requirements and Testing," Sept., 1979, p. 87.

T. Sato, "Assessment of Dispersion," Oct., 1979, p. 79.

A. Ramig, Jr. and F. L. Floyd, "Plastic Pigment: A Novel Approach To Microvoid Hiding. Part I: Introduction and Mechanism," Nov., 1979, p. 63.

F. L. Floyd and A. Ramig, Jr., "Plastic Pigment: A Novel Approach To Microvoid Hiding. Part II: Controlling Parameters for Performance," Nov., 1979, p. 75.

J. J. Wojtkowiak, "Effect Of Film Viscosity On Aluminum Flake Orientation In Thermoplastic Acrylic Coatings," Nov., 1979, p. 117.

REPORT FROM THE GEMOLOGICAL INSTITUTE OF AMERICA DELEGATES VINCENT MANSON, CHAIRMAN

The Gemological Institute of America and the American Gemological Society had a joint national meeting in Dallas in April of this year. Two regional meetings were also held during the year with considerable committee work being accomplished. The GIA in cooperation with its instrument division is devoting considerable time and effort in the area of instrumentation to be used as a communication tool. A more detailed report is in progress.

REPORT FROM THE GRAPHIC ARTS TECHNICAL FOUNDATION DELEGATES RICHARD D. WARNER, CHAIRMAN

Our major efforts during the '79, '80 time period have revolved around the establishment and functional operation of the new GATF Color Reproduction Center. The Color Reproduction Center is located in our Pittsburgh, Pa., facility and houses some of the latest and most modern equipment used for process color printing and color reproduction.

A few new systems and pieces of equipment that have been donated/loaned by the various manufacturers are:

- Prepress Color Proofing Systems
- Electronic Color Separation Scanners
- Process Color Separation Cameras
- Four Color Sheet-fed Presses
- Four Color Web Offset Press

We feel as though the new Color Reproduction Center reflects the current interest in color reproduction and will enable us to meet the research and educational needs for our industry as we move into the decade of the 80's.

Other activities in color at GATF include our input to the Web Offset Standards Review Committee for advertising materials for web offset publications. We are also actively involved with the ISCC Committee on Image Technology, and we have continued our work on the three-color interimage reflectance model as reported in our '79 Annual Research Department Report.

REPORT FROM THE GRAVURE TECHNICAL ASSOCIATION DELEGATES FRANK BENHAM, CHAIRMAN

The GTA committee on "Input Copy Requirements for Reproduction" has completed their first major investigation and the complete report will be published this year by the GTA. The effects of retouching, duplicating, and color photographic dye sets on reproduction are reviewed based upon their effect on the finished printed piece.

An A-V informational presentation of the highlights of the report is being prepared by GTA for use by advertising groups, printers, color separators, and photographers. This program will be available through the Gravure Technical Association in late 1980.

A new gravure printing ink color guide is being prepared for publication printing that updates past color ink guides. This guide relates the film density in the color separations to color ink film thickness in the gravure printing process.

The Electronic Committee continues to investigate the improvements in the existing all-electronic copy to printing-press color-reproduction system. The strongest area of interest is

improvement in the electro-mechanical computer-driven cylinder-etching methods. The computer linkage between the color reading and writing units seems compatible with existing needs.

REPORT FROM THE HOUSE & GARDEN COLOR PROGRAM DELEGATES NADINE BERTIN, CHAIRMAN

On Monday, May 19, 1980, the Guggenheim Museum in New York City was the site of the Fourth Annual House & Garden Magazine Color & Design Conference, "Marketing Color and Design for the 80's . . . the Decade of the Home." In previous years, the Conference has taken place at The Cooper Hewitt Museum, The Fashion Institute of Technology, and Lincoln Center in New York City.

This unique event brings together Licensee Companies and Members of the House & Garden Color Program for a day of shared information, economic and marketing evaluations, color and design directions, and 'living trends,' as seen and reported by the Editors of House & Garden Magazine in conjunction with several Guest Speakers. Guest Speakers have included Industrial and Graphic Designers, (Massimo Vignelli, Olle Haggstrom of G.E., Robert G. Smith of J.C. Penney), Stylists, (Glen Dalrymple of Armstrong, Nancy Carlson of Mohasco, Manufacturers, (Allan Heller of Heller Designs, Richard Husby of Phillips Products), Color Experts (Professor Sewell Sillman, Yale University, Faber Birren — in a category by himself), and Retailers (Teresa Mottoros, Macy's, Ted Einstein, Einstein-Moomjy Carpets.)

This year, Special Guests were Philip M. Hawley, President and Chief Executive Officer of the Carter-Hawley-Hale Stores, who spoke on the importance of Color in Retailing. Both in Product Design and in Store Display, color is a vital factor for consumer attraction and to identify the different areas of selling in a large store. He also touched on the product areas which he felt would be of growing importance in the 80's. Some of these are:

- An interest in *authenticity* and *history of design*: The growing importance of well thought out *color and industrial design in home products*.
- Key products for the future: *Home entertainment, home protection, home education, home games products*.
- Food, table, and entertaining accessories and gifts: *Storage capacities, multi-purpose furniture* including smaller scale furniture, room dividers and wall units.

All these products related to the increasing move back to the home as a living and entertainment center.

The other Special Guest was James Rouse, of the Rouse Company, re-developers of inner and outer cities, who are responsible for the renaissance of the Boston Market Place and Faneuil Hall, and the new Baltimore Waterfront, and who are now aiming their talents at the South Street Seaport in New York City. Mr. Rouse spoke with unbounded enthusiasm and optimism about the true potential of heretofore-abandoned inner city locations, not only in terms of social use, such as markets and hotels, but in terms of real dollar income that the shopping areas and living accommodations can bring into a previously fallow urban area.

Other parts of the day's program included a presentation of the current and into-the-1980's economic picture by the Publisher of House & Garden, Ralph Timm, entitled "What's Sure in These Unsure Times," followed by a multi-screen audio-

visual report by Editor-in-Chief Mary Jane Pool on "Currents of Change for the 80's — The Decade of the Home," a wrap-up of living trends today, as seen by the Editors of House & Garden Magazine.

Nadine Bertin, Director of Creative Services and of the House & Garden Color Program, presented the House & Garden Color Palette for 1981, which was divided into a 56-color collection to be presented in the September issue of the magazine to their readers, and a 14-color Professional Palette of special and future colors intended exclusively for use by designers and stylists in styling products not yet on the market. In addition, a dramatic 3-screen slide presentation by Miss Bertin showed off many of the consumer products in new colors by Licensee Companies of the Color PROGRAM. One particular exclusive was the introduction of the newest consumer telephone by AT & T, the Electronic "Touch-A-Matic," in 6 House & Garden Colors.

"We have made quite a few changes in the new Palette, dropping some of the bright middle tones, because we feel that the news in color is toward deep dark colors and interesting pastels and pale tones," Nadine Bertin, House & Garden's Color Program Director, told manufacturers, retailers, designers and builders at the Conference.

The new Consumer Palette numbers 56 colors, up from 53 in 1980. It will be published in the September issue of House & Garden when the 1981 Consumer Color Pack will also be available to the public.

Later in the day, which was bisected by a seated luncheon in the rotunda of the Museum, Joyce MacRae, Color News and Fabrics Editor for the magazine reported via slides on general fabric and furniture styling trends in the market today. The day culminated on a brilliant note with a product and Color Marketing presentation by Estelle Ellis, President of Business Image, who filled the stage of the Guggenheim Auditorium with hundreds of products in bright primary colors . . . piles and stacks of all types of household objects cheered the audience with their gay reds, yellows, blues, and greens . . . and in doing so, Mrs. Ellis made a strong point as to the power of Color as an Identifying, Selling, and Marketing tool. And because the sky's the limit, hundreds of colored balloons were released at the end of this dramatic presentation, bring to an end a very successful, fact-finding, fun-filled, inspiring day for the 250 Product and Industrial Designers, Architects, Stylists, Executives and Retailers who attended. The House & Garden Color Program has been for over 35 years only full-circle program of color design and distribution which touches everyone, from manufacturers, through retailers, to consumers — Manufacturing companies are licensed to it; individuals can become Professional Members. (see article by Nadine Bertin in *Color Research and Application* 3, 71-78 (1978).

What's forecast for 1981?

- The real news is in the new deep tones and softened colors as well as the continuing neutrals. For example, among the most interesting new upholstery fabrics are those with very dark grounds.

- The naturals and the neutrals are the one main color family which still serves as the plateau on which everyone is decorating today. The softening influence of beige, sand, biscuit and taupe — all the middle-to-light tones — continues to climb in popularity.

- The 1981 Palette contains more subdued medium and

light hues. This reflects the continued softening and misting of colors first forecast three years ago when House & Garden added a number of softened pastel tones to the Color Palette.

- Bright colors are nonetheless expected to hold their own since they continue to do very well in plastics and enamels, housewares, cooking equipment, tabletop and accessories.

Among other general color trends noted were these:

- Middle-tone colors are more romantic, subdued, misted, look best when combined.

- Interesting color harmonies suddenly "occur" in new mixtures of several existing colors, in a pattern, in a group of solids.

- Greens are getting bluer, like Ming Green. Or are pale and soft celadons like Greensilver and may be coming back.

- Blues are all over the place, reddening into Lavender and Blue Flower, cooling off toward Persian Turquoise, or graying down.

"We're seeing an unprecedented, broad-based commitment to home," noted Ms. Bertin, "in which color is a growing factor."

Definitely on the rise, she said, is consumers' use of and interest in color in all aspects of home living — especially now that they are spending more time at home.

Consumers today are increasingly environment and energy-conscious. This translates into lower lights and less heat which means clear and soft colors, deep warm colors, warmer fabrics and fabrications.

Smaller rooms are dictating smaller patterns, smaller furniture, accessories, and appliances. And rooms and furnishings are serving multi purposes — comfort, convenience, pleasure to the eye and senses.

REPORT FROM THE ILLUMINATING ENGINEERING SOCIETY DELEGATES W. A. THORNTON, CHAIRMAN

Much of IES activity in color resides in the Color Committee, whose membership includes lampmakers, lighting designers, researchers, workers in color reproduction, color television, color photography — but would also benefit by representation from stage, studio, sports, art. In recent months, Chapter V, "Color," of the *IES Handbook* was revised. A statement on safety colors is soon to be published: that some illumination renders colors so poorly that the red signs of danger, the yellow of caution, and the green of safety, for example, may not transmit their intended messages to stressed occupants under that illumination. Attention is being given to visual assessment of real scenes under different illuminants — coloration, perceived brightness per footcandle, clarity — and the color-rendering problems in TV and photography. A several-hour Color Course has been worked out, intended for Regional Meetings of the IES, but much more generally applicable; so many of the phenomena in which color depends on illumination are at the same time commonplace and little understood, and can be appreciated and clarified only by vivid demonstration. Proper account of color in all its ramifications is very tardy in permeating the activities of the IES itself.

**REPORT FROM THE INDIVIDUAL MEMBER
GROUP VOTING DELEGATES
BONNIE K. SWENHOLT, CHAIRMAN**

Voting delegates of the Individual Member Group (IMG) represent the largest "Member-Body" in the Council. Each voting delegate brings an individual interest in and concern for the activities of the council. Furthermore, we are anxious to respond to the interests of other members of the IMG. We urge each member to provide us with input toward improving the activities of the Council. The voting delegates are: Bill Benson, Tom Cullen, Tony Pentz, Ruth Rich, Allan Rodrigues, George Sonn, Jackie Welker, Leonard Weiner, and Bonnie Swenholt, chairman. Have you any suggestions for what the IMG might do for the 50th Anniversary Annual Meeting? Please let us know your thoughts.

**REPORT FROM THE INDUSTRIAL DESIGNERS
SOCIETY OF AMERICA DELEGATES
RAYMOND SPILMAN, CHAIRMAN**

Color interest among the IDSA membership has shown a sharp increase over the last year. As a result, IDSA is initiating a Color Seminar at their national meeting in San Antonio this October. The program will be put on by ISCC members of IDSA and will include: introduction to color usage, scientific and human response aspects along with sourcing for IDSA membership use in their own areas of interest.

IDSA also welcomes two new members to their ISCC Delegation: Prof. Mary Buckley of Pratt Institute and the Margaret Gates Foundation, and Nadine Bertin, Director of the House and Garden Color Program.

Alex Styne continues his highly successful chairmanship of the ISCC Committee on Human Response to Color.

Prof. Robert Redmann of Bridgeport University has agreed to furnish whatever design is necessary for the development of a suitable ISCC Service Award that will be given by ISCC to those persons selected for outstanding service to ISCC and the world of color.

**REPORT FROM THE INSTITUTE OF FOOD
TECHNOLOGISTS DELEGATES
ANGELA C. LITTLE, CHAIRMAN**

The Chairman regrets that there is no report to be offered for the current period due to the inactivity of the delegation in recent times. A thorough review of the objectives and membership of the delegation is called for if revitalization is to occur.

**REPORT FROM THE MANUFACTURERS
COUNCIL ON COLOR AND APPEARANCE
DELEGATES
JAMES G. DAVIDSON, CHAIRMAN**

The Collaborative Reference Program (CRP) has expanded in both number of participants and scope, for example, by adding a new method for evaluating large-scale color differences for lightfastness.

The MCCA Advisory Committee has been reactivated to further assure the growth, direction, and practical relevance of MCCA-sponsored technical programs.

R. Stanziola has been elected president; F. Zurlo; vice-president, C. Leete, secretary-treasurer for a two year term (6-80 to 6-82).

The MCCA sponsored a very successful workshop program at the 1979 RETEC of the Color and Appearance Division, Society of Plastic Engineers: "Coloring of Plastics XIII, Color and Appearance Control." This RETEC was a unique and instructive combination of lecture sessions and workshops. The workshops featured "hands-on" demonstrations of both visual and instrumental means of color-and-appearance-control evaluation.

The MCCA will arrange for workshop presentations at the ISCC-FSCT-MCCA Louisville 1981 Symposium on Color and Appearance Instrumentation. There will be four workshops: three will feature equipment displays for color formulation, color measurement, and gloss and other appearance measurement; the fourth, a sample-preparation-and-presentation tutorial.

A guide to "Education opportunities, publications, and associations dealing with color and appearance technology" has been completed. This guide will be published in the winter 1980 issue of *Color Research and Application*.

**REPORT FROM THE MYCOLOGICAL SOCIETY
OF AMERICA DELEGATES
KENT H. MCKNIGHT, CHAIRMAN**

The Color Standards Committee of the Mycological Society of America is cooperating with the Special Committee on Color Standards of the Entomological Society of America with the objective of providing a more usable book of color standards for biologists to replace, for example, "Color Standards and Nomenclature" by Robert Ridgway (1912). The proposed new book will be a combination of the ISCC-NBS Centroid Colors and the Munsell Book of Color. Thirty-one hue charts will be used, and samples will be added to enrich the areas where the Munsell collection is weak, for example low chromas and low values. The production and selection of these new samples is currently in the experimental stage.

**REPORT FROM THE NATIONAL ASSOCIATION
OF PRINTING INK MANUFACTURERS
DELEGATES
ALFRED DI BERNARDO, CHAIRMAN**

The NAPIM news ink committee has been working with the ANPA/RI color ink book task force in the preparation of revised standards for ANPA's Ad Pro and AD-LITHO color books which are scheduled to be published shortly. Also in the area of news inks the NAPIM color standards committee has been providing technical inputs to Pantone Inc. for a revised PANTONE Color Selector/Newsprint book currently in preparation.

During the past year the NAPIM color standards committee continued its liaison with the AAAA/NPA committee in its work in revising the SWOP brochure on standards for web off-set production.

**REPORT FROM THE NATIONAL PAINT AND
COATINGS ASSOCIATION DELEGATES
EVERETT R. CALL, CHAIRMAN**

In accord with its desire to support the ISCC as an observer Member-Body, the NPCA delegation has submitted no report.

REPORT OF THE OPTICAL SOCIETY OF AMERICA DELEGATES FRANC GRUM, CHAIRMAN

The OSA Delegation to ISCC met on October 9, 1979 on the occasion of the OSA 1979 Annual Meeting in Rochester, New York. Part of the discussion centered on ways in which the delegation could support and enhance liaison between the two organizations. One decision was to propose to the OSA Board of Directors that the delegation play a larger role in the organization and administration of the OSA Technical Section on Color and efforts in this direction have been initiated. Another decision was to promote joint OSA-ISCC sponsorship of topical meetings on color. This is now being discussed with the OSA Board of Directors. Precedence for such meetings exists, with the most recent joint meeting being that arranged by members of the OSA Technical Section on Vision and the Association for Research on Vision and Ophthalmology to be held in Sarasota, Florida in April 1980.

The 1979 Annual Meeting of OSA, from 9th through 12th October, provided a forum for many papers on and related to color and vision. Special seminars were held on "applied mathematics in vision research," "spatial effects in color vision," "geometrical aspects of the appearance of materials," and "visual-motor phenomena." In addition, there were three sessions each for color and vision papers, including discussion meetings of the Color and the Vision Technical Sections. Of the 76 papers on color, vision, and physiology, about 21 dealt with colorimetry and immediately related subjects. The rest were on visual perception, models of the visual system, and visual physiology.

Two invited papers dealt with spatial effects in color vision. R. L. DeValois and K. K. DeValois presented new physiological evidence on the mechanisms of color vision in a paper entitled "Spatial Processing of Color and Luminance Information." They found that responses to geniculate neurons correspond well to psychophysical differences in color and brightness contrast and that the influence of spatial patterns can be predicted reasonably well by changes in the Fourier spatial frequency spectra of stimulus arrays. A second team of researchers, L. M. Hurvich and D. Jameson presented a paper entitled "Influences of Size, Shape, Retinal Locus, and Field Structure on Perceived Color." They dealt with the various influences of retinal mosaic grain and the effects of lateral neural interactions on color perception. These characteristics enter into accounts of color constancy, color contrast, color assimilation, adaptation, and after-effects, and what have been called "filling-in" effects. They may be accounted for by models involving spectral and spatial frequency analysis, or alternatively in terms of size and spatial location of image components together with receptive field characteristics within and across retinal areas. Mathematical models of vision were reviewed in invited papers by J. Z. Levinson ("Mathematics in Visual Psychophysics") and R. M. Shapley ("Nonlinear Analysis of Parallel Visual Pathways in the Cat Retina"). In general, both invited and contributed papers tended to deal with complexities and interactions of seeing color under the normal conditions of complex stimulus arrays that we encounter in our everyday world rather than, as in the past, limiting attention to the simple-field conditions of classical colorimetry. Largely because of the pressure from people who must deal with applications problems in that real world, the frontiers of color research have been extended in recent years to areas of greater complexity. As the papers from this

meeting indicate, these complexities are beginning to yield to systematic analysis with the result that our understanding of how to deal effectively with practical problems of color application is greatly enhanced.

The OSA has held a single annual meeting for the past 6 years. During that autumn meeting, renewed emphasis has been placed on color and vision sessions. A number of special seminars and papers sessions have been organized to treat various aspects of color and vision and to provide a timely forum for presentation of new work in these fields. The OSA delegation to ISCC hopes to participate in future plans of this kind and to increase the activities of the color section.

REPORT FROM THE PHILATELIC FOUNDATION DELEGATES RICHARD E. BERESFORD, CHAIRMAN

The Philatelic Foundation released its new book, *Color in Philately*, in January of this year. This project culminated many months of work and study as well as technical problems and delays. The Delegation is pleased to report that the response in the philatelic community has been very favorable and the color charts that were created by Carl Foss have proved to be successful tools for the philatelist.

Since the release of the book, the major activity of the Delegation has been the refining of a slide program on the subject of color and philately. This program was originally prepared for the international stamp exhibition in Toronto, Canada. It has since been revised twice and incorporates some of the information generated from the research done at Rensselaer Polytechnic Institute for the book. It also includes special photographic effects developed by Carl O. Mamay of the Philatelic Foundation. Most recently, this program was given at the National Postage Stamp Exhibition in Washington, DC, July 4-6th by Roy H. White, Editor-In-Chief of *Color In Philately*. Mr. White, Dr. Donald MacPeck, Dr. Ivor Preiss and others have participated in some of these presentations. The most recent version of this program included illustrations of various dyes used by the Bureau of Engraving and Printing during the World War I period. George W. Brett, formerly of the Bureau of Engraving and Printing, was one of the chief speakers at this presentation.

This program is not yet generally available to the public. There are plans to develop the subject matter further this year so that it can eventually be distributed to organizations and groups for their use free of charge, as the Foundation now does with twenty other programs.

The Foundation Delegation has discussed developing new color charts dealing with reds found in stamps of the 19th and early 20th centuries. This may well be the Foundation's color project for 1981.

REPORT FROM THE SOCIETY OF MOTION PICTURE AND TELEVISION ENGINEERS DELEGATES ROLAND J. ZAVADA, CHAIRMAN

Ten thousand engineers, scientists, and technicians from every corner of the world, including the People's Republic of China, reinforced "Our International Society," the theme of the SMPTE's 121st Technical Conference and Equipment Exhibit in Los Angeles.

Of the more than 100 papers presented during the confer-

ence, 16 were concerned with the science of color:

The Corrective Reproduction of Faded Color Motion-Picture Prints by the Flashed-Dupe-Mask Method

A New Gevacolor Negative Type 682 Film

New Fujicolor Reversal Films

Monobath Processed Color Composite Print

Image Quality Transfer Through Film and Television

High Quality Montage Picture by Soft Chromakey

Recovery and Reuse of Color Developing Agents

Matching of the TK-47 (A High Performance Color TV

Camera) to a Unique Pickup Tube Design

Automatic Set-up System for a Broadcast Color Camera

A New Video Color Analyzer

A Subjective Examination of the Methods Used to Enhance Images in an Artistic Manner

A Unique Electronic Ballast for Straightforward Use of HMI Daylight Lamps 575 Watts to 4000 Watts Without Compromise

HMI Lighting – A Realistic Evaluation of the Pros and Cons

A Newly Developed 18mm (2/3 inch) SATICON Type

Single Color Pick-up Tube for a Consumer Use Color TV Camera

Worldwide Color TV Standards – Equalities and Differences

STRAP – Vidiplex: A Method for Transmitting Two NTSC or PAL Color TV Signals over a Single 4.2 MHz Channel

Outstanding contributions to color technology were recognized by the Society:

For his contributions, including his invention in the design, manufacture, and processing requirements for coupler incorporated color motion-picture films, greatly simplifying the production of color motion pictures, on an international scale, for viewing both in theaters and via television, W. T. Hanson, Jr. was awarded Honorary Membership.

The Progress Medal was awarded to Donald G. Fink in recognition of his many years of continuous and significant contributions to the television field as engineer, editor, and author (Color Television Standards).

To honor his substantial contribution to the telecine design art in his capacity as leader of the engineering team responsible for the development of the Mark III Rank Cintel flying spot scanner with Digiscan digital framestore capability that makes the device fully compatible with NTSC 60-Hz and PAL 50-Hz standards, John D. Millward, Rank Cintel, was chosen for the Agfa-Gevaert Gold Medal.

Dr. Roman Vishniac was presented the Eastman Kodak Gold Medal Award to honor his contributions as a physician, biologist, scholar, and engineer in the advancement of the technology and techniques employed for cine-micrography/macrography and using them brilliantly for both scientific research and general education.

Recipient of the John Grierson International Gold Medal Award was Jacques-Yves Cousteau for his research, design, and development of equipment which gave humanity the possibility of truly exploring the ocean through the use of film and video.

Judith A. Schwan, Eastman Kodak Company, was chosen for the Herbert T. Kalmus Memorial Award for her direct research efforts which have contributed significantly to the development of Eastman color negative film, color print film, and color intermediate film, as well as Ektachrome movie films and her dedicated research which has resulted in a number of unique features of the new Eastman color intermediate film.

One of the Society's contributions to the science of color

during 1979 was its sponsorship of the symposium on "Color in Motion Pictures and Television," during the Inter-Society Color Council's 48th Annual Meeting in New York City.

Papers on color published in the SMPTE Journal during 1979 (Volume 88) are listed below.

LISK, KENNETH G. A low-cost-color-television film-recording system. No. 3, Mar., pp. 157-160.

ALLEN, LEWIS E. Ion-exchange recovery techniques for the reuse of color developers. No. 3, Mar., pp. 165-167.

KLEPPE, J. WESLEY. Practical application of an ion-exchange method for color-developer reuse. No. 3, Mar., pp. 168-171.

NAKAGAWA, SHOZO. A chrominance noise meter for videotape recorders. No. 4, Apr., pp. 224-227.

ALEXANDER, JOSEPH. An infrared traveling matte system with electronic masking. No. 6, June, pp. 410-413.

HARA, M.; KISHIMOTO, H.; and YAMARYO, S. Two new types of Fujicolor films: a negative with improved characteristic and a hot-process positive. No. 7, July, pp. 469-473.

MUNAK, ILMAR and GOURGON, MICHAEL. The technical performance of typical home color television receivers. No. 8, Aug., pp. 546-550.

SCHROEDER, A. C. The development of color error formulas useful in color television. No. 10, Oct., pp. 706-712.

BELLO, H. J. An introduction to the technology of color films (film colorimetry) – a tutorial paper. No. 11, Nov., pp. 755-759.

REPORT FROM THE SOCIETY OF PHOTOGRAPHIC SCIENTISTS & ENGINEERS DELEGATES

RUSSELL H. GRAY, CHAIRMAN

The two Society journals, *Photographic Science & Engineering* and *Journal of Applied Photographic Engineering* continue to be a major source of articles dealing with photographic color applications. During the past year papers have been published on color sensitometry, color densitometry, color image stability and color proofing. Two members of the delegation are active on ANSI color densitometry committees.

REPORT FROM THE SOCIETY OF PLASTICS ENGINEERS DELEGATES

THOMAS G. WEBBER, CHAIRMAN

The Color and Appearance Division of SPE sponsored eight papers at the Annual Technical Conference at New Orleans on May 9, 1979. Of these, one on cadmium pigments received the DCMA Award and one on titanium dioxide received the CAD Award. A Regional Technical Conference at Cherry Hill, N.J. on October 16 and 17 on "Control of Color and Appearance" included a day and a half of papers and demonstrations of the latest color measuring equipment by members of MCCA.

The Division contributed \$1000 to the Macbeth Foundation. Support continues for the ISCC Committee on Examples of Industrial Color-Difference Acceptability, under A. J. Pentz.

Out book *Coloring of Plastics* was published by Wiley as a volume in the SPE Monograph Series. Of the sixteen contributors, six were ISCC members, including the editor, T. G. Webber. The CAD Newsletter appeared three times and included two reprints of papers and one original. The SPE journal, *Plastics Engineering*, published articles on cadmium pigments, azo pigments, and color matching.

REPORT FROM THE TECHNICAL ASSOCIATION OF THE GRAPHIC ARTS DELEGATES CHARLES E. RINEHART, CHAIRMAN

TAGA held a Color Workshop Meeting during our annual meeting in Williamsburg, Virginia, May 15, 1980. The major part of our discussion revolved around a report by Milt Pearson on current ANSI activities that affect the graphic arts industry. Milt has provided us with a summary of that discussion. The implications of the two areas of current ANSI activity are considerable for the graphic arts industry. His report follows.

There were two areas of activities of the American National Standards Institute (ANSI) that are of concern to the graphic arts. The first was the standardization of the spectral conditions for densitometry in the graphic arts. A draft standard is being developed by the ANSI subcommittee PH2.28 on Optical Density. This draft contains two areas of concern, one is the changing of the color temperature of the light sources from 3000 K to 2856 K. This was done because it was felt that the change would cause no significant difference in the response of the densitometers and it would make the source in agreement with illuminant A, which is an internationally well standardized illuminant.

The second area was the establishment of the spectral response for densitometry used for color work in the graphic arts. This involved two questions: First, whether the existing separation filter response (58, 25, 47) or something similar should be the standardized spectral response, or narrow-band response should be used for greater inter-instrument agreement.

The response of the workshop to the question of spectral response was that those who favored something similar to the existing conditions argued that this would give density values capable of being used in masking calculations, color-hexagon and color-triangle plotting, etc. Narrow-band responses would cause difficulties in these calculations and plottings. The arguments favoring narrow-band response were that few people, if any, calculate masking coefficients by densitometric values anymore. Also, if you are going to plot colors it should be done with colorimetric data anyways as opposed to densitometric data, and that anything that improves inter-instrument agreement is a desirable improvement.

The second activity of ANSI that was of interest was the review of the existing viewing standards for the graphic arts, PH2.32-1972. First it was recommended to drop the 7500 K standard as it represented only confusion in the industry. Its advantage of higher color temperature over the 5000 K for viewing the yellow printer was not sufficient justification for having two standard illuminants in practice. The second area of concern was the intensity specified for the D5000 standard viewing. The existing specification of 204 ft. candles is believed to be too high for normal practice. Indeed it was indicated that most standard installations surveyed were not operating at the intensity level the standards specified but generally at approximately 75% of the standard. The question was raised whether there should be two intensity levels specified.

They would be: 1) an intensity level approximating average room viewing conditions. This would be somewhere in the neighborhood of 50 ft. candles and would be used for the assessment of quality and tone reproduction of the colored image. The second intensity would be a higher intensity in excess of 100 ft. candles for the evaluation of color uniformity and physical characteristics of the printed sheet.

There was an agreement from the members of the work-

shop on the dropping of the 7500 K standard. There were no strong opinions either for or against two intensity levels for the remaining D5000 viewing standard.

REPORT FROM THE TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY DELEGATES S. J. POPSON, CHAIRMAN

The TAPPI Optical Methods Committee is primarily involved in the development of test methods which will eventually be adopted by TAPPI as official methods. Among the methods which may be of interest to ISCC members are:

Color of Paper and Paperboard in CIE Y, x, y, or Y, Dominant Wavelength and Excitation Purity

Proposed TAPPI Provisional Practice for Identification of Instrumental Methods of Color and Color Difference Measurements of Paper, Paperboard and Their Ingredients

Calibration of Reflectance Standards for Hemispherical Geometry

Opacity of Paper

Diffuse Blue Reflectance Factor of Pulp, Paper, and Paperboard

Spectral Reflectance Factor, Transmittance, and Color of Paper and Pulp (Polychromatic Illumination)

The next meeting of the TAPPI Optical Methods Committee will be held on September 16th at the Netherland Hilton Hotel in Cincinnati, Ohio. Interested visitors are welcome.

COLOR MARKETING GROUP

"TUNE UP YOUR COLORS" is the theme of Color Marketing Group's Fall meeting which will be held at the Opryland Hotel, Nashville, Tenn., Oct. 5 - 7. The program opens on Sunday, Oct. 5 with the following format.

Panel Discussion On Manufactured Housing and Recreational Vehicles

Moderator: Murray Smith, Manager, Specification Markets, Micarta Div., Westinghouse Electric Corp.

"Color On The Production Line" - John W. Turner, Director of Interior Design, Redman Homes, Inc.

"Modular Colors" - Jo Miller, Design Consultant, Commodore Homes

"Color Marketing The Total Home" - Alice Lindsey, Designer, Tidwell Industries

"Recreational Vehicles—A Separate Approach" - Susan Ginther, Project Manager, Midas International

A CMG Feature: A Special Film - "THE PRICE"

Tuesday Morning

Presentation of 1982 Color Directions (Members Only)

Directions Committees—All Welcome

Educational Directions

"Fitting the Munsell System Into Design Programs"

Paint: Randy Cook, Director of Color Promotions, Color Communications

Decorative Schemes: Darlene Kinning, Colwell/General Inc.

Marketing Directions - Program Details to Be Announced

Technical Directions - Program Details to Be Announced

Second Session - Directions Committees

Third Session - Directions Committees

Color Directions Workshops - 1979 Revisited (Members Only)

"An Introduction to Color Marketing" (Non-Members)

Dinner

Country Jamboree Night featuring a performance by "Hazen Plus Two" – a great show and square dance for all
Appropriate dress – Blue Jeans

Tuesday

Color Directions Mixed Industry Workshops

Attend the Directions Committee of your choice – Open to All

Design:

The aim of the committee is to keep members apprised of design directions by industry, trends and sources as well as active participation in smaller discussions.

Education:

Will develop informational programs for CMG Members. Will identify existing educational programs in color and design assess what contributions CMG might make to them and they to CMG. Seek the most effective means of developing professional networks among CMG.

Marketing:

Develop presentations to CMG Members, marketing techniques and success stories so that every CMG Member may become more proficient in selling their ideas and products to management and to the ultimate consumer.

Technical:

Aim is to broaden the base of knowledge in the color field by exposing members to technical information. The Committee functions to stimulate interest and communication between art and science as it applies to industry.

Noon Reception

Display of Color Directions Results

- Display of Color Directions Results
- Color Marketing Group Annual Meeting
- Color Directions Workshop Reports
- Direction Committee Reports

Speaker: Lou Kapuscinski, Executive Vice President, Liller-Neal-Welton Advertising Agency "Color and Advertising"

CIBA-GEIGY OFFERS COLORIMETRY SEMINAR IN ARDSLEY

A seminar, beneficial to anyone involved in color, but who has had only moderate exposure in the application and little to no experience in the science of color, is being offered by the Pigments Department of CIBA-GEIGY. A non-commercial, two-and-one-half day "Colorimetry and Optics of Pigmented Systems" course will be held October 7-9 at the CIBA-GEIGY facilities in Ardsley, New York.

The course acquaints students with the application of the science of colorimetry and color measurement. It also covers

the theories of colorant formulation and pigment dispersion and presents ways of determining solutions to typical problems encountered in the industry.

Course instructors are Dennis Osmer, Manager of Colorimetry in CIBA-GEIGY's Pigments Department, and Ruth Johnston-Fuller, a consultant to CIBA-GEIGY Corporation.

Tuition for the two-and-one-half day seminar is \$185.00. The fee covers textbooks, notebooks, instruction and lunches. Participants are responsible for hotel and travel arrangements and costs in addition to dinner expenses.

More information may be obtained by contacting Dennis Osmer, CIBA-GEIGY Corporation, Colorimetry Laboratory, Pigments Department, Ardsley, New York, 10502. Phone: (914) 478-3131.

DRY COLOR MANUFACTURERS ASSOCIATION (DCMA)

November 5, 1980 – DCMA Monthly Luncheon Meeting, New York Athletic Club, New York.

December 3, 1980 – DCMA Monthly Luncheon Meeting, New York Athletic Club, New York.

January 7, 1981 – DCMA Monthly Luncheon Meeting, New York Athletic Club, New York.

February 4, 1981 – DCMA Monthly Luncheon Meeting, New York Athletic Club, New York.

March 4, 1981 – DCMA Monthly Luncheon Meeting, Sheraton Heights, Hasbrouck Heights, New Jersey.

April 1, 1981 – DCMA Monthly Luncheon Meeting, New York Athletic Club, New York.

May 6, 1981 – DCMA Monthly Luncheon Meeting, New York Athletic Club, New York.

June 14-17, 1981 – DCMA Annual Meeting, The Greenbrier, White Sulphur Springs, West Virginia.

The Dry Color Manufacturers' Association is an industry trade association representing large, medium and small pigment color manufacturers throughout the United States and Canada, accounting for approximately 95% of the production of color pigments in this country. Foreign pigment manufacturers with sales in the United States or Canada and domestic suppliers of intermediates to the pigments industry are also members of the Association.

FEDERATION OF SOCIETIES FOR COATINGS TECHNOLOGY

National or regional Federation/Society events:

Mar. 4-6 – Western Coatings Societies' Symposium and Show. Disneyland Hotel, Anaheim, CA.

Mar. 11-13 – Southern Society Annual Meeting. Plaza South Hotel, Birmingham, AL.

Mar. 24-26 – Symposium on Color and Appearance Instrumentation. Sponsored by FSCT, ISCC, and MCCA. Executive West, Louisville, KY.

Apr. 30, May 1-2 – Pacific Northwest Society Annual Symposium. Washington Plaza Hotel, Seattle, WA.

May 1 – Montreal Society. Fiftieth Anniversary Social.

May 13-15 – Federation Spring Meetings. Hilton Hotel, Denver, CO. Society Officers on 14th; Board of Directors on 15th.

June – Joint Meeting of Kansas City and St. Louis Societies. To be hosted by St. Louis.

Oct. 28-30 – Annual Meeting and Paint Industries' Show of Federation. Cobo Hall, Detroit, MI.

