

Inter-Society Color Council *News*

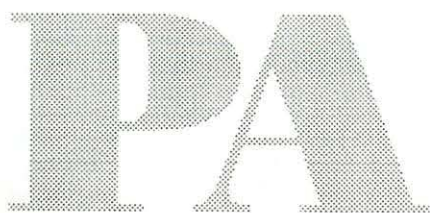
Number 348

March/April 1994

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PRESIDENT'S COLUMN



Color Research
and Application
Journal Facts

One of the many
benefits of ISCC
membership is a

substantial discount for members who subscribe to the journal Color Research and Application (CR&A). Billing for the first subscription is handled through the ISCC. Subscription

renewals are billed by the journal's publishing company, John Wiley & Sons, Inc. Renewals from Wiley may or may not include sales tax depending on the state in which you live. Thanks to Henry Hemmendinger for informing me and Wiley that the New Jersey tax code calls for no taxation of periodicals. His bill from Wiley, which included sales tax for his subscription to CR&A, was incorrect. Henry's discovery prompted Wiley to review each state's tax code to keep up with changes that may have taken place. They found that they were incorrectly charging residents of New Jersey, Ohio, and Michigan sales tax for CR&A subscriptions. Although some attempt has been made to correct the 1994 bills, not all errors were caught. Therefore, if you live in New Jersey, Ohio, or Michigan and received a bill which included sales tax, Wiley will be happy to give you a refund or a credit towards a 1995 subscription. Contact Joe McCloskey at John Wiley and Sons.

ISCC Historian

I have another request for help from the general membership. We are in need of an ISCC historian to help preserve important effects (informational and personal) relating to the history of our organization. The historian would have a complete set of old newsletters so that questions relating to old issues could be easily answered. Ideally, the historian would keep the gold mine of information that has made ISCC what it is for the past 60 years. Such a historian function may be a larger effort than one person has time to devote. Therefore I propose the formation of an ISCC Historian Committee. If you have any interest in serving on such a committee, please contact me immediately. We would like to get this effort going as soon as possible!

Newly Elected Officers and Directors

The election results were announced at the February Williamsburg, 1994 Board of Directors' Meeting (see details in an article within this newsletter). I'd like to extend a personal congratulations to the following newly elected Officers and Directors:

| | | |
|-----------------------|-----------------|-----------|
| Dr. Ellen C. Carter | President-Elect | 1994-1996 |
| Dr. Danny C. Rich | Secretary | 1994-1996 |
| Mr. Daniel Walton | Treasurer | 1994-1996 |
| Mr. Michael A. Hammel | Director | 1994-1997 |
| Mr. Richard W. Riffel | Director | 1994-1997 |
| Mr. William S. Vogel | Director | 1994-1997 |

Ellen, I recall when I began as President-Elect thinking that the six-year commitment was a very long time, but to be honest, the time has really flown by very quickly. That is probably because I have enjoyed it so much and I'm sure you will too! After serving as Director (1991-1994) and Publicity Chairperson for the past several years, you are highly qualified to take on the highest position of leadership within the Council. We in the general membership are fortunate to have you coming on board. I look forward to serving under your guidance as Past-President.

Danny, thank you so much for agreeing to serve as our Secretary for yet another two-year term. As you well know, it is an incredible time commitment! We are grateful that your interest in the affairs of the Council has led to such dedication and helpful service.

Dan, you may be the "new kid on the block", but you will be our first Treasurer who is a professional accountant. Welcome and we look forward to working with you!

Mike, you have been reporting to the Board as Publications Chairperson and have transformed the newsletter into a professional publication of which we are all proud! Now we are excited about working with you over the next three years as a Board member.

Rich, your service on the Finance Committee and as Co-Chairperson of Interest Group II, Industrial Application of Color, has been much appreciated. Your enthusiasm with regard to ISCC matters will make it a pleasure to work with you on the Board.

Bill, your work with AATCC's Committee RA-36 on Color and Appearance is well known by many of our members. After having been a long-time ISCC member, we are fortunate to have you serving in a leadership position on the Board of Directors for the next three years.

I also have a personal message for the outgoing Officers and Directors.

Hugh Fairman, our current Past President, you have been my mentor throughout my term as President-Elect and now as President. I found an excellent role model in you! Thank you for showing me the ropes and for always finding the time to answer my questions and give me guidance on difficult issues. I have enjoyed every minute of working with you! Furthermore, the ISCC membership has been fortunate to have you as their leader over the past six years. We are glad that you will still remain active as the new By-Laws Committee Chairperson. (Many thanks to Fred Billmeyer for his service as By-Laws Committee Chairperson. Your service to the Council has been never-ending! We understand why you must give up some of your responsibilities and we wish you luck in your endeavors and happiness in your later years with Annette.)

Phil Hunter, as outgoing Treasurer, our thanks would be incomplete if we did not mention the many long hours that Ginny Baca has devoted to handling the ISCC finances. This job is an incredible undertaking for any one individual and we are thankful for all your long hours of work. In fact, this job is so large that it prompted us to take a more serious look at hiring an executive staff person. Many thanks to you, Phil, for supporting us in our pursuit and for offering your office facility once we find such a staff person!

To Joann Taylor, an outgoing Director, it has been a pleasure working with you. Your enthusiasm for the Council is truly an inspiration! As testimony to this, you took it upon yourself to represent ISCC at the IS&T/SID Color Imaging Conference in 1993 and offered to do it again in 1994. Your persistence in tracking down lost ISCC Newsletter volumes with Cooper Hewitt Museum was totally voluntary and much appreciated. As Member-Body Liaison, you have done an excellent job of keeping track

of our Member-Body Delegations. We'll miss your service on the board, but we hope your enthusiasm keeps you involved in ISCC activities.

Our last outgoing Director, Magenta Yglesias, will also be missed. We are thankful for your design skills, which helped us improve the professional image of the ISCC. Specifically, you have helped us in creating more consistent designs for our stationery, certificates, directory, etc. The success of Interest Group III, Art, Design, and Psychology, is due to your efforts along with Wade Thompson as Vice-Chair. Finally, many thanks to Magenta for agreeing to Chair the Long-Range Planning Committee. This will insure that you will stay active in ISCC business even as you retire from the Board.

1994 Macbeth Award Recipient

At the February 1994 Williamsburg ISCC Board of Directors' Meeting, Joel Pokorny, the Chair of the Macbeth Award Committee, announced that Dr. Peter Kaiser is the Committee's candidate to receive the 1994 Macbeth Award. The Committee cites Dr. Kaiser's contribution, the Minimally Distinct Border (MDB) photometric technique, as making him worthy of receiving the Macbeth Award. The Committee's candidate was accepted by unanimous vote. The Macbeth Award will be presented to Dr. Kaiser at the Awards Luncheon held during the 1994 ISCC Annual Meeting in Detroit. Dr. Robert Boynton will give the citation before the presentation. Dr. Kaiser's significant contribution in the modern development of the MDB technique, as well as the description of the physiological substrate responsible for the MDB performance of human observers, will be recognized by the ISCC as he receives the 1994 Macbeth Award. Many thanks to Joel Pokorny for doing an excellent job serving as the Macbeth Award Committee Chair.

Honorary Member Named

Ellen C. Carter and James G. Davidson nominated Calvin S. McCamy for Honorary ISCC membership. After the 60-day minimum, the application was unanimously approved by the ISCC Board of Directors at the February 1994 Board Meeting in Williamsburg. Cal's contributions to color science are numerous. He is also very active in other color and standards organizations such as CIE, AIC, ASTM, and ANSI where his contributions have involved specification of standards, spectrophotometry, densitometry, lighting, and the Munsell System. Congratulations are extended to Cal, a very deserving Honorary member!

Paula J. Alessi

1994 ANNUAL MEETING

Education Committee Meeting

The workshop of the Education Committee at the ISCC Annual Meeting this year will consist of two parts. The Charter Student Chapter from Rochester Institute of Technology will hold its first Annual Meeting during this workshop. Officers of the chapter will report on its progress and activities of the past year and present the student chapter banner. More importantly, this chapter would like to encourage other colleges and universities to begin student chapters, and a packet of information will be distributed with information on the benefits of a student chapter. Educators and student members are encouraged to attend. (Note: look for the student chapters poster for further information.)

The second part of the workshop will focus on demystifying color. Through demonstrations and discussions, the Committee hopes to help uncover the myths of color, and help attendees learn how to educate others about color misconceptions. For

more information on the Education Committee Workshop, see the insert in this issue of ISCC News.

Karen Braun
President, ISCC-R.I.T Student Chapter

ISCC Interest Group I *Fundamental and Applied Color Research*

Interest Group I, Fundamental and Applied Color Research, will host a presentation session at the Annual Meeting, on Monday, April 25, from 8:00 - 11:30 a.m. The following presentations will be included:

- Investigation of a Reported Failure of Optical Reciprocity
David L. Spooner, rhoMetric Associates
- The "Alexandrite Effect" of Polarized and Unpolarized Light along the Three Crystallographic Axes of Synthetic Alexandrite
Yan Liu, James Shigley, Emmanuel Fritsch, and Scott Hemphill, Gemological Institute of America
- Rod-Photoreceptor Activity and Color Television Monitors
Arthur G. Shapiro, Joel Pokorny, and Vivianne C. Smith, University of Chicago
- Thermochromism of Ektachrome 100 Plus Professional Transparencies upon Projection
Audrey A. Lester and Mark D. Fairchild, Rochester Institute of Technology
- The Role of Spatial Frequency on Color Induction and Color Contrast
Qiu Jin, Joel Pokorny, and Vivianne C. Smith, University of Chicago
- Intersections of Matching Spectra, Related to Color Matching in Industry and to Visual Sensitivity
Bill Thornton
- The Determinants of Metameric Crossovers
Rolf Kuehni, Miles Incorporated

The Interest Group I session will end with a fifteen minute question and answer period.

Mark D. Fairchild
Chairman, Interest Group I

ISCC Interest Group II *Industrial Application of Color*

With the advent of ISO 9000 and other quality management systems, the task of color measurement has become increasingly scrutinized in terms of repeatability, reproducibility, and inter-instrument agreement. In many cases, this is coupled with the need to transfer information between customer and supplier in the form of Certificates of Analysis (COA), or in some cases, Electronic Data Interchange (EDI). These requirements have in turn magnified issues relating to the color standardization well beyond a simple "what color space are you using?" situation. As such, users of color measurement hardware and software must understand the features and capabilities of their systems while recognizing their limitations. Often, an attitude of "let the instrument do it" is no longer acceptable and can have extreme financial ramifications if blind trust is exercised.

Instrument manufacturers have had to respond to this change in a variety of ways, both in hardware and software design. This year's session will concentrate on these changes and the capabilities and limitations of commercially available systems. The session will include a combination of presented papers and a question-and-answer session to address the general issue of color standardization and the application of commercial color measurement systems. Currently scheduled to present papers are representatives from: Color & Appearance Technology, Colorgen Industrial Group, Datacolor International, HunterLab, Minolta, Tailored Lighting, and X-Rite.

Rich Riffel
Chairman, Interest Group II

ISCC Interest Group III *Art, Design, and Psychology*

Margaret Walch, Associate Director of the Color Association of the United States will present "Three Historic Palettes and Their Contemporary Applications: A Case Study for the Automotive Industry" Art Deco Bright Colors, American Southwest Earth Tones, and Cubist Monochromatic palettes will be discussed.

Margaret Walch, author of the *Color Source Book*, 1979, and co-author of *The Color Sources Book*, 1994, presents three historic palettes and discusses their applications to exterior and interior automotive design. Among the issues she considers are specific applications of the palettes to growing international automotive markets in light of regional and local taste; why, where, and how to choose an appropriate historic palette; and reinterpretations of historic palettes for contemporary sensibilities.

The ISCC will be the guests of the Cranbrook Academy of Art in Bloomfield Hills, Michigan for a tour and a presentation concerning the history of Cranbrook and their programs concerning color.

Cranbrook is the "American Bauhaus" and was designed by the famous architect Eero Saarinen, who was also the Academy's first president and primary director of the curriculum.

This tour is a rare opportunity to experience one of the major centers of design and creativity in the United States. It would be difficult to imagine the story of design in America without Cranbrook — a still vital community whose faculty and students have encompassed world-famous architects, sculptors, weavers, designers, metalworkers, ceramists, and painters.

For information, contact: Magenta Yglesias, (202) 328-2120, or Wade Thompson (417) 836-5110, Vice-Chair, Interest Group III.

*Magenta Yglesias
Chairman, Interest Group III*

MACBETH AWARD TO GO TO DR. PETER KAISER

Peter Kaiser, Ph.D. is to receive the 1994 Macbeth Award of the Inter-Society Color Council for his contributions to the application and understanding of the Minimally Distinct Border (MDB) photometric technique. The Macbeth Award is presented biannually according to the following criteria: Candidates will be judged for their recent significant contribution to any field of interest related to color whether or not it is represented by an Inter-Society Color Council Member Body. The candidate's contribution may be direct, it may be in the active practical stimulation of the application of color, or it may be an outstanding dissemination of knowledge of color by writing or lecturing, based on original contributions by the nominee. Candidates need not have been active in the affairs of the Inter-Society Color Council but they must be either a current or former member of the ISCC.

Starting with a 1968 paper co-authored with Bob Boynton (R.M. Boynton and P.K. Kaiser, "Vision: The additivity law made to work for heterochromatic photometry with bipartite fields". *Science*. 116: p. 366-368, 1968), Dr. Kaiser has pursued validating the MDB technique as a photometric procedure. Most recently he has investigated the physiological basis of the MDB spectral sensitivity function in macaque retina in the laboratory of physiologist Barry B. Lee (P.K. Kaiser, B.B. Lee, P.R. Martin, and A. Valberg, "The physiological basis of the minimally distinct border method demonstrated in the ganglion cells of the macaque retina". *Journal of Physiology (London)* 422: p. 153-183, 1990). This paper documents a striking parallel between the responses of Magnocellular pathway cells in the retina and the spectral sensitivity and residual border distinctness obtained in human MDB experiments. Thus Dr.

Kaiser was instrumental in the modern development of the MDB technique and in describing the physiological substrate responsible for the MDB performance of human observers.

Dr. Kaiser has had a distinguished professional career. He has been an Optical Society of America representative to the ISCC from 1978 to present and was Chair of the delegation from 1988-1993. He has been a member of the Board of Directors of the ISCC. Dr. Kaiser was a member of the Editorial Board of *Color Research and Application* from its inception in 1976 until the present. During much of this time, he served as the Topical Editor for *Color Vision*. In 1988, Dr. Kaiser founded and has since run the Color Vision Network (cv net), an e-mail network that now has almost 2,000 participants. Dr. Kaiser's curriculum vitae lists numerous CIE Technical Committee memberships as well as an impressive list of over 60 scientific publications. His current activities include authoring a revision of Robert Boynton's influential book, "Human Color Vision".

Joel Pokorny

THE INTER-
SOCIETY COLOR
COUNCIL IS
SEEKING
NOMINEES FOR
THE GODLOVE
AWARD. PLEASE
SEE ENCLOSED
NOMINATION
FORM.

NEW OFFICERS AND BOARD MEMBERS ELECTED

The Inter-Society Color Council is pleased to announce the election of the following Officers and three new Directors to the ISCC Board of Directors. Dr. Ellen C. Carter, editor of Color Research and Application, ISCC Publicity Chair, retiring ISCC Director, will be President-Elect for a two-year term. Dr. Danny C. Rich, of Datacolor International, will continue as ISCC Secretary for another two-year term. Mr. Daniel Walton, Chief Financial Officer at Color and Appearance Technology, will become the new ISCC Treasurer also serving a two-year term. These Officers will comprise the

ISCC Executive Committee along with Roland Connelly, of SheLyn, Inc. as the new President and Paula J. Alessi, of Eastman Kodak, as Past President at the end of the 1994 ISCC Annual Meeting in Detroit, Michigan.

Michael A. Hammel, of Colorgen Industrial Group, Richard W. Riffel, of Monsanto, and William S. Vogel, of Ciba-Geigy, are the newly elected Directors who will replace retiring Directors Ellen Carter, Joann Taylor, and Magenta Yglesias. They will serve a three-year term beginning at the end of the 1994 ISCC Annual Meeting in April and concluding at the Annual Meeting in 1997. Biographies of all these Officers and Directors were given in the September/October 1993 News Number 345. Congratulations to all!

Paula J. Alessi

PRELIMINARY REPORT: 1994 ISCC WILLIAMSBURG CONFERENCE

The 1994 ISCC Williamsburg Conference held from February 20-23 at the Woodlands in Colonial Williamsburg, Virginia was an outstanding success! The meeting, Colorimetry of Fluorescent Materials, drew over 150 participants. Hats off to Richard Harold, the Program Chairman, and Romesh Kumar, the Arrangements Chairman, for their organized efforts leading to the success of this conference. A detailed summary of this conference will follow in a subsequent issue of the News.

Paula J. Alessi

NEWS ABOUT MEMBERS

Anna Campbell Bliss Presents Artwork

Anna Campbell Bliss recently presented 14 works of art for the Salt Lake Arts Council at the Finch Lane Gallery in Salt Lake City, Utah. Her collection was entitled "Extended Vision" She described art as "a way of exploring the visual world, of mining personal resources, of creating one's own reality." Campbell had this to say about the use of mathematics and computers in her artwork:

While I am not a mathematician, I find that related concepts enter my work on more than one level of consciousness. Mathematics is so much a part of general knowledge. Observations of nature and structure of living forms have extended strong influence on both my art and architecture. I am also fascinated by the patterns and forms of the many cultures that I have experienced and how they relate or develop in parallel ways

In this exhibition, Campbell used a computer to help her develop concepts as well as programming in "C" language to explore ideas where software is inadequate.

Campbell received a Bachelor of Arts degree from Wellesley College and a Master of Architecture from the Graduate School of Design at Harvard University. Recent honors include the American Academy in Rome Fellowship, a Graham Foundation grant for Color Research, and finalist standing for the Computer World Smithsonian Award.

Karen Braun

Axial and Coaxial Orders Works by Antal Nemcsics

In association with the AIC Congress Colour 93 Budapest, organized by Dr. Antal Nemcsics, color scientist, an exhibit of Dr. Nemcsics' works as an artist was held, June 15-July 15, 1993, at the Vasarely Museum in Budapest. It was my pleasant and

unexpected honor to be asked to inaugurate (that is, officially open) this exhibit. On that occasion, at the Museum, I made the following remarks in English that were translated into Hungarian for the benefit of most of those (about 25 persons) present. I have modified them slightly here for the sake of context.

My first contacts with Antal Nemcsics, in the late 1970s, were with Nemcsics the color scientist, inventor of the Coloroid color order system. Only on reading the catalog of the present exhibit did I learn that this was only the latest of several careers that have combined to make Dr. Nemcsics one of the few unusual persons to have successful careers in both the arts and the sciences. Perhaps the best known, such person in the United States was the late Faber Birren [but for the ISCC News I must also mention Joy Turner Luke.]

A few facts about the life of Dr. Nemcsics help us to understand the

purpose and context of the exhibit. He was born in Hungary in 1927, the son of a music teacher mother and a physics and mathematics teacher father. This heritage, combined with an education by Benedictine Fathers, gave him the incentive to study art in Budapest after World War II. After some years of study, painting, and private teaching, he won an assistantship at the Technical University of Budapest, where he has remained and was appointed Professor in 1987.

Early in Nemcsics' career he created, without official authorization from the regime, many frescoes, mosaics, and stained glass windows in Hungarian churches being rebuilt after the war. He is also well known for creating the color plan for the Castle District in the town of Buda. But in his own painting, he became more and more dissatisfied with knowledge of how colors combine to produce effects that are vivid instead of dead, vibrant instead of mute, pleasant instead of dissonant. To study these effects of physiological factors on aesthetic judgments he created a new science which he called color dynamics, after earlier efforts along these lines by others.

In the last decade or so, Dr. Nemcsics' paintings have reflected the laws of color dynamics. His paintings exhibited in the present showing included examples of the axial and coaxial orders prevailing in these laws, relating aesthetic uniformity logarithmically as well as linearly to physical properties. These themes are today found in many of his vast number of paintings (perhaps half a thousand of which are privately owned in addition to those in public collections), his 80 past exhibits, 95 murals, 120 color designs, and nearly 200 scientific papers, patents, and books.

The exhibit allowed Dr. Nemcsics' paintings to speak for themselves. It was, in my opinion, highly appropriate that it was held in the Vasarely Museum, for the ability of both these artists to create aesthetic effects

explained by scientific laws is clearly seen in both Nemcsics' "Colourland Gate" and Vasarely's famous glowing diagonals.

Fred W. Billmeyer, Jr.

George B. Gardner

ISCC News has just learned of the death on March 24, 1993, at age 80, of George B. Gardner, a long time member of the Council, after a long illness. George was an Honorary Member of the ISCC, and the recipient of its Nickerson Service Award in 1986.

George was, in a sense, one of the unsung heroes of the Council, who served it capably for many years without the public recognition this service deserved. As this writer observed in his remarks on the receipt of the Godlove Award (Newsletter No. 345), George was the unofficial assistant secretary and arrangements chairman of the Council for 18 years, 1952 to 1970. During this period Ralph M. Evans of Eastman Kodak's Photographic Technology Division was the elected Secretary, and with Kodak's support for that office, Evans' co-worker George Gardner was able to carry out the routine duties of the office, freeing Evans to attend to more general and longer range concerns.

As I prepared to serve as President of the Council and then to take over as Secretary after Evans' retirement, I was in a unique position to recognize the tremendous amount of work that George Gardner put into making the Council run smoothly. For most of those years, the annual meetings were held at the old Statler-Hilton Hotel in New York. George was the sole contact man with the hotel, and the meetings always ran smoothly in every way. George took notes for and wrote all the Board of Directors minutes and took care of all Council correspondence. He was always there, always cheerful, and always ready to produce exactly what was needed to cope with any and all problems that inevitably arise in the operation of an organization as large and complicated as the ISCC. When

George retired from his informal positions, we concluded that we were not yet able to do without him, so elected him a Director for the following (then) two-year term of 1970-1972.

George was educated at the University of Rochester and, with the exception of a three-year absence during World War II to work on the Manhattan Project at Columbia University, his working career of 40 years was with Eastman Kodak. He lived in Rochester with his surviving wife Jean, a medical doctor for Kodak. George retired happily on July 1, 1975, to his home, concerts, and enjoying his Allen (electronic) organ.

Fred W. Billmeyer, Jr.

Walter C. Granville

Walter C. Granville, a past president of the ISCC, died at the age of 81 on December 13, 1993, at the Lake Forest Hospital, Chicago. He is survived by his wife of 51 years, Virginia (Ginny) Nasman. He had suffered for many years from, and succumbed to, leukemia. The Granvilles had lived for many years at 312 Elm Court, Libertyville, IL, a suburb of Chicago.

Walter began his career in color in 1930 (which must have been before his 20th birthday!), working first for Philip Ruxton, Inc., then after 1937 at the research Laboratories of Interchemical, Inc., where he operated the first General Electric (Hardy) Recording Spectrophotometer. (Meticulous as ever, Walter noted in his last illness that this was actually the second General Electric Hardy-type spectrophotometer, but the first one was not recording.) In 1945, Granville joined the Container Corporation of America, where his best known contribution was the development of the Color Harmony Manual. In 1957, he resigned as Assistant Director of Design for the Container Corporation to establish an independent practice as color consultant, which he maintained to the end.

Walter was president of the Inter-Society Color Council from 1958-1960,

and received its Nickerson Service Award in 1989. In recent years, he was a member and co-chair of Interest Group IV on Color Education. He was also a valued member of the Council's By-Laws Committee, where his knowledge of how the Council operated in its earlier days was of great value. Walter was active in the American Society for Testing and Materials from at least 1946, mainly in the paint (D-1) and appearance (E-12) committees. He was an honorary member of The Colour Group (Great Britain), a Life Fellow of the Optical Society of America, and a former Trustee of the Munsell Color Foundation. He was a world-class expert and never-ending source of information on color order systems, where his expertise will be sorely missed.

An obituary appearing in the January Newsletter of The Colour Group provides the following information about Walter's association with that group: "He was an avid follower of the Colour Group activities through the Newsletter, often dreaming of attending one of our many meetings. He was particularly keen on those meetings which covered colour in art, and tried to encourage the ISCC to spend more time on this aspect of colour."

We may hope that this interest will find renewal within the Council, and thereby help Walter's memory to live on.

Fred W. Billmeyer, Jr.

ISCC-Past President Awarded Lifetime Membership in CMG

At Color Marketing Group's Spring 1993 International Conference in Washington, D.C., the Board of Directors awarded Lifetime Membership to Joyce Davenport, CMG of Joyce Davenport Associates in Chicago, Illinois and Sharon deLeon, CMG of Design Portfolio in Santa Monica, California.

Joyce Davenport joined the Color Marketing Group in 1971. Since then, she has Captained/Co-Captained various workshops including Consumer Color Directions (TM), Design Influences and Industry Exchange. She served 8 years as Chairman and Organizer of the Technical Committee, 10 years as CMG delegation chairman, and is still a voting delegate to ISCC, and Co-Chairman of the Consumer Color Combinations Committee from 1991-92. In addition, she has served on CMG's Board of Directors for three years, was Secretary in 1980, Treasurer from 1981-82, and Vice President in 1983.

Three ISCC Members Awarded 1993 OSA Fellowship

The Optical Society of America (OSA) honored 52 of its members this year by awarding them the rank of fellow. According to the Society's bylaws, "Any regular member who has served with distinction in the advancement of optics is eligible for transfer to the class of fellow." The new fellows were recognized during the Awards Ceremony at OSA's Annual Meeting last October in Toronto.

Three ISCC members have been awarded this honor, Gerson Buchsbaum, Carol M. Cicerone, and Mary Myleen Hayhoe.

E D I T O R ' S N O T E

It's a soft-copy world these days! The ISCC News Editors request that all submissions be sent either on diskette or by E-mail (address on the back page) if at all possible. Most of the press releases and articles we receive are probably in soft-copy before they are printed and sent to us. It would save us tremendous amounts of typing time if we received them that way.

We eventually convert all files to Macintosh MSWord documents, but all formats, Mac and PC, are welcome. If special formatting is required, such as bold, italics, underlining, or foreign characters, it would be especially helpful if you could send a hard-copy of your submission as well.

Submissions are always welcome from all members and organizations. Please send them to the address on the back page of this issue.

NEWS FROM MEMBER BODIES

AATCC-ICE 1993 A SUCCESS



The International Conference and Exhibition for the American Association of Textile

Chemists and Colorists (AATCC) was held October 3-6, 1993 in Montreal, Canada, at the Bonaventure Hilton and Queen Elizabeth Hotel. The Quebec Section of the Canadian Association of Textile Colourists and Chemists proved to be an excellent host as 75 exhibits were viewed by nearly 2000 attendees. For the fifth consecutive year, all available exhibit space was sold. The 1994 conference will be held October 11-14 in Charlotte, North Carolina.

from Color Byte

AATCC RA36 Meeting

The RA36 Color Measurement Research Committee of the American Association of Textile Chemists and Colorists (AATCC) met November 16, 1993, at the Governor's Inn in Research Triangle Park, North Carolina. The committee reviewed work from the following subcommittees: Test Method 153: Instrumental Measurement, Publications, Gray Scale Video, and Color Terminology. Other topics discussed included ISO commitments, production of the Glenn Color Rule, and Test Method/Procedure review.

from Color Byte

AATCC RA100 and RA70 Symposia

The American Association of Textile Chemists and Colorists' Committee will sponsor two symposia. Both will be held at the Radisson

Executive Park in Charlotte, North Carolina.

AATCC RA100, Safety, Health, and Environmental Technology, will sponsor a symposium on March 24-25, 1994. The symposium, chaired by Sue Wagner, will focus on regulatory review, training requirements, waste minimization, and wastewater treatment.

Topics to be addressed during this two day symposium include the Clean Water Act, RCRA/Superfund, current developments in EPCRA reporting, chemical process safety rules, training requirements, EPA enforcement, compliance auditing, and use of polymers for water clarification.

AATCC RA70, Yarn Dyeing Technology, will sponsor a symposium on April 14-15, 1994. The program, chaired by David R. Vlaservich, will focus on equipment, dyeing technology for cellulose and synthetics, manufacturing improvements, and environmental concerns.

Topics to be addressed include: machinery variables, automated dye dispensing systems, dye tubes, in-bath lubrication, extraction and drying methods, precision versus random winding, preparation, after-treatment, finishing, and wastewater treatment.

For more information on either symposium, contact Peggy J. Pickett, AATCC, P.O. Box 12215, Research Triangle Park, N.C. 27709-2215, (919) 549-8141, Fax: (919) 549-8933.

AATCC Press Release

PURPLE AND GREEN AND YELLOW IN PRE- SCHOOL CHARACTERS



Every generation has its own fictional characters to love. In the 1990s, a purple (PMS 246), or a raspberry of dahlia shade

Barney (TM) has caught the imagination of preschoolers. For those unfamiliar with the character, we might note that Barney (TM) is a dinosaur, a Tyrannosaurus rex, with an energetic and nurturing character. Barney was created in 1988 by a Texas schoolteacher, Sheryl Leach. His friend is BJ (TM), a baseball-capped yellow (109) Triceratops, and his younger sister, Baby Bop (TM), a green (355) beast.

Policeman Blue

"Blue was chosen as the uniform color (in 1853) for largely practical purposes," said officer Dominick Palermo, assistant curator of the Police Academy in Manhattan. "Sometimes you have to change a flat tire," he explained. "It is much easier to get grease off of blue than white. Also the color blue has meanings, such as courage and strength." -The New York Times, October 31, 1993

Red Paper?

"Year after year, it is a surprise to see what comes in when you order red paper. The color changes with the times." -Michael Wollins, Thomas Jefferson Middle School, Arlington, VA.

*from Quotables and Notables
Color Association of the United States
(CAUS) News*

1994 COLOR TRENDS CONTINUE TO BE EARTH- FRIENDLY FORECASTS CMG



The dominant influence for consumer colors in 1994 is the environment, both from an inspirational and ecological

viewpoint, says the Color Marketing Group (CMG). According to CMG, an international non-profit association that has been forecasting color trends for over 32 years, "earth-friendly" colors will remain the driving force in product colors in 1994.

"The American consumers' rising awareness for the environment demands that colorants and products be ecologically safe," says CMG President Nada Napoletan Rutka of Nada Associates, Pittsburgh, Pa. "That translates into a continuation of greens, golds, warm lasting colors with berry stains, deep rich browns, natural colors, warm reds, soft kilim-inspired oranges, vegetal dye appearances and unbleached tonal whites."

The 19 consumer colors forecast by CMG for 1994 include firethorn, a color influenced by orange autumn leaves; dried apricot; grain, amber waves of grain, a light overall natural tone; beach; artemisia, a beautiful silver-green; basil; capers; silver aspen, a color that brings environmental harmony between blue and green; morning green; mosaic, Moorish tiles were the inspiration for this inviting blue-green; Colorado brown; bark; muslin; winestain; loganberry; blackberry wine; summer straw; and juniper, a soft, weathered natural with environmental appeal, a pleasant, muted green with a yellow cast.

*Thom Randolph
Color Marketing Group*

CPMA 1994 CONFERENCE COLOR PIGMENTS 1994: LEGISLATION, REGULATION, AND INNOVATION

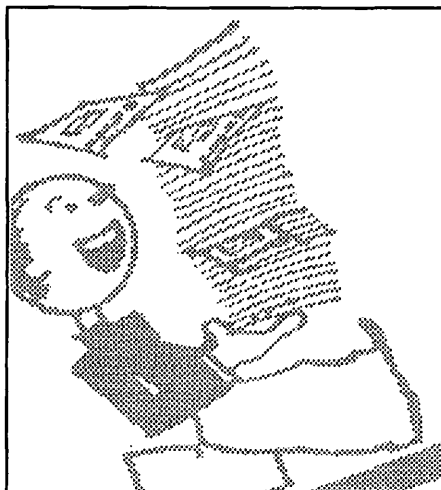
Color Pigments Manufacturers Association, Inc. (CPMA) announces its 1994 conference titled "Color Pigments 1994." The conference will be held April 6-7, 1994 at the Stouffer Mayflower Hotel in Washington, D.C. This location will allow both manufacturers and users of organic and inorganic color pigments to receive the latest information on legislation, regulation, and developments in the industry directly from legislators, regulators, and industry speakers.

Speakers include Canadian, Mexican, and U.S. government officials on "The Latest on FDA's Colorants Polymer Rule," "CPSC and Color Pigments in Toys, Artists Materials, and Other Applications," "EPA Looks at Color Pigments and Their Uses," "NAFTA — A Roundtable Discussion by Canadian, Mexican, and U.S. Government Officials," and many other current topics. Industry updates

include "Influence of Environmental Regulations on the Choice of Colors — The Latest Color Trends," "International Drug and Cosmetic Colorants Regulations," "Safe Handling of Pigments," a roundtable discussion on TSCA, hazard communications, RCRA, OSHA, and other U.S. regulations, and many other interesting areas.

The Washington, D.C. location permits many speakers from Washington-based agencies and representatives from the Canadian and Mexican government through their embassies to take part. Included will be officials from the Indirect Additives Branch of the Food and Drug Administration, the Office of Compliance of the Consumer Product Safety Commission, the Office of Pollution Prevention and Toxics of the Environmental Protection Agency, the Office of Hazardous Materials Safety of the U.S. Department of Transportation, representatives of the U.S. Department of Commerce, Embassy of Mexico, and Embassy of Canada, officials from the Commercial Chemicals Branch of Environment Canada, and others.

The registration deadline is March 14, 1994. For more information, contact Mary Dwyer, CPMA, P.O. Box 20839, Alexandria, VA 22320-1839, (703) 684-4044, Fax (703) 684-1795.



**THE ISCC
WELCOMES
CONTRIBUTIONS
FROM ALL
MEMBERS**

RICHARD ELEY NAMED MATTIELLO LECTURER FOR 1994 FSCT ANNUAL MEETING

FSCT The Federation
of Societies for
Coatings

Technology (FSCT) is pleased to announce that Richard R. Eley, Senior Scientist in the Polymer Physics Group for The Glidden Company, Strongsville, Ohio, will present the Joseph J. Mattiello Lecture during the 72nd Annual Meeting of the Federation. The Annual Meeting will be held at the Ernest N. Morial Convention Center, New Orleans, LA, on October 12-14. Dr. Eley's lecture will be given on Friday, October 14.

The lecture commemorates the contributions of Dr. Mattiello, former President of the Federation (1943-44). Dr. Mattiello was instrumental in expanding the application of the sciences in the decorative and protective coatings fields. He was Vice President and Technical Director of Hilo Varnish Corporation, Brooklyn, NY, when he died in 1948.

Dr. Eley obtained a B.S. in chemistry and a Ph.D. in physical-inorganic chemistry from Kent State University, Ohio. At Kent, he was a Paint Research Fellow, and was introduced to the rheology of coatings in the laboratory of Dr. Raymond R. Myers. He completed post-doctoral work at Georgetown University, following which he was Assistant Professor of Chemistry at the U.S. Naval Academy, Annapolis, MD. While at Annapolis, he also held a research position at nearby U.S. Naval Ship Research Development Center,

studying drag reduction. He joined The Glidden Company (part of ICI Paints World Group) in 1975 where he is currently a Senior Scientist in the Polymer Physics Group. For the past 18 years with Glidden, he has studied the rheology of coatings and coatings processes. Areas of special interest have been the relationship of rheology to application, film formation and the control of film defects, the chemorheology of thermosetting coatings, the effects of dynamic interfacial rheology and phase behavior of waterborne coatings on coatings processes, and, recently, the numerical simulation of coatings flow.

Dr. Eley is the recipient of two first-place Roon Awards from the Federation. In 1982, he received the Outstanding Speaker Award at the Cleveland Society's annual Technical Conference, and in 1986, the Society's Award of Merit. He received The Glidden Company's Technical Achievement Award in 1984.

FSCT News Release

GIA ANNOUNCES NEW COLOR GRADING TOOLS

GIA The
Gemological
Institute
of America's

GEM Instruments offers the jeweler a variety of grading accessories to help ascertain the subtle color differences that can mean large differences in the value of diamonds and colored stones.

The new Color Grading Lamp provides the standardized illumination required for GIA's colored stone grading system, and is recommended as an accessory to the GIA GemSet color

communication tool. It simulates both daylight-equivalent light for optimum grading and incandescent light for checking color change.

Designed for use with GIA GEM Instruments' line of gemological microscopes, the Color Grading Disc and Color Grader help demonstrate subtle differences in diamond color to customers. Both these accessories fit into the well of a microscope and show the color differences between gems. The Color Grader, with a trough-like groove that holds master stones, is ideal for grading loose stones. The Overhead Light Source simulates north daylight and helps detect enhancements as well as identify surface characteristics such as trigons, knots, scratches, and surface graining.

The DiamondLite, used for grading diamonds, simulates north daylight and includes a built-in long-wave ultraviolet lamp to demonstrate fluorescence in a diamond.

For more information, please contact GIA GEM Instruments, Dept. PR10, Stewart Street, Santa Monica, California, 90404-4088, (310) 829-5491 or (800) 421-8161, Fax: (310) 829-2492.

GIA News Release

HFES 38TH ANNUAL MEETING PROMOTING "PEOPLE & TECHNOLOGY IN HARMONY"



The Human Factors and Ergonomics Society (HFES) 38th Annual Meeting will take place October 24-

28, 1994, at the Nashville Convention Center. Its theme, "People & Technology in Harmony," signifies the importance of considering human factors/ergonomics in order to create harmonious systems.

Throughout the week, the meeting will feature hands-on workshops geared towards professionals at all levels (CEU credit is available) as well as more than 100 technical sessions on a broad range of ergonomics-related topics: office ergonomics, carpal tunnel syndrome, aging, consumer products, persons with disabilities, medical systems, safety, computer systems, environmental design, aviation/aerospace, biomechanics, communications, forensics, system development, organizational design and management, test and evaluation, and visual performance.

Attendees will also have the chance to browse book, service, and product exhibits; tour Nashville-area technical and research facilities; and attend special events, such as receptions, an awards banquet, and local outings. The HFES Placement Service will be available to help match job seekers and employers.

The deadline for lectures, panels, symposia, debates, demonstrations, and workshops is March 4, 1994; poster proposals are due April 15. You need not be an HFES member to participate. A preliminary program/registration packet will be available in late summer. For information, contact HFES, P.O. Box 1369, Santa Monica, CA 90406-1369, USA; (310) 394-1811, Fax (310) 394-2410.

CALL FOR PAPERS BY IS&T AND SID 2ND COLOR IMAGING CONFERENCE



The Society for Imaging Science and Technology (IS&T) and the Society for Information Display (SID) announce the Second Annual Color Imaging Conference to be held from November 15-18, 1994 at The Registry in Scottsdale, Arizona. ISCC is a cooperating society for this conference. The program committee will be pleased to consider original work in the three major conference topics.

Color Science: This session will cover the physics, psychophysics, and psychology of color and vision which form the basis for color imaging. Topics will include colorimetry, color measurement, and color appearance. Among the speakers who have been invited to speak in this session are Robert Hunt and Fred Billmeyer.

Color Imaging Systems: This part of the program will discuss the integration of input, output, and processing options into digital color systems. The speakers will focus on the architectural framework for color systems and the effect of design choices on image quality. William Schreiber, Jan Allebach, and Gerald Murch have been invited to speak. The program will include a panel discussion on a topic of major significance related to color imaging systems.

Applications of Color Imaging: This part of the program is intended to focus on the important problems and significant issues related to the use of color in industrial, consumer, office, and scientific applications. The list of speakers invited to talk includes David Travis and J. Rennilson. Contributed papers will show how color science and color systems are put to practical use and what the issues are.

The conference will feature a series of tutorials on the fundamentals of color science, measurement, devices, and image processing. Tutorials are planned on color science (theories and color spaces), color half-toning and image quality, color management systems, color in hardcopy and scanners, color in electronic displays, and imaging coding and compression.

This conference aims to be the premier technical conference for scientists, technologists, and engineers working in the areas of color science and systems and their applications to color images. This area has seen tremendous change in the last ten years, with the falling costs of computing power, the increased availability and improved quality of color output devices, and the prevalence of digital networks.

Please submit a 35-50 word abstract, a 2-4 page descriptive summary of the technical approach and the results, and a short biography by April 1, 1994 to:

Dr. Mark Fairchild
RIT - Munsell Color Science Laboratory
54 Lomb Memorial Drive
Rochester, N.Y. 14623-5604
(716) 475-2784, Fax (716) 475-5988

Indicate if you wish to have your paper considered for oral or poster presentation.

O T H E R N E W S

JOSEF ALBERS'S
REVOLUTIONARY
WORK ON COLOR
NOW AVAILABLE
ON COMPUTER.

When Josef Albers, one of the most influential artists of the twentieth century, published the first edition of *Interaction of Color* in 1963, he changed forever the way artists and lovers of art look at color. In 1971, the complete text and ten studies selected from the original 150 color plates were made available in a paperback version, releasing Albers's ideas to a wider audience of students, teachers, designers, and artists. In the past thirty years, *Interaction of Color* has been highly praised and widely regarded as the most important work on color ever published.

In March, the Josef Albers Foundation will publish a new edition of this seminal work — *Interaction of Color*, CD-ROM Edition — extending Albers's color teaching into the realm of the computer. The new edition, which contains the complete and unaltered text, notes, commentary, and plates of the original 1963 edition, provides in an electronic medium an experimental way of studying color, which Albers described as "the most relative medium in art." It reveals a range of miraculous color effects, including, for example, how one color can appear as two and how disparate colors can appear alike in varying settings. Experimentation with this program will increase understanding and ability to handle color on the computer screen as well as enhance skills with paint, ink, and other media.

Josef Albers was at the Bauhaus in

Germany from 1920 until 1933, longer than any other artist in the history of this pioneering school of art. In 1933, he came to the United States, where he taught at Black Mountain College for sixteen years. In 1950, he was appointed chair of the Department of Design at the Yale University School of Art. The recipient of numerous awards and honorary degrees, Albers was the first living artist to have a major solo retrospective at the Metropolitan Museum of Art in New York; his art has been presented in exhibitions and permanent museum collections all over the world.

Albers created *Interaction of Color* — the culmination of a lifetime of experimentation — when he was 75. He dedicated the book to his students, and described teaching as a collaboration aimed at seeking new ways to experience the pleasures and challenges of visual perception. Albers rejected systems and theories, promoting participation and experimentation to create a personal approach to color study.

For more information on *Interaction of Color*, CD-ROM Edition, please contact: Mary Coleman, Yale University Press, P.O. Box 209040, New Haven, CT 06520-9040, (203) 432-0912, Fax: (203) 432-2394.

from Yale Book News

CORM 1994
ANNUAL MEETING

The 1994 Annual Meeting and Conference of the Council for Optical Radiation Measurements (CORM 94) will be held at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland, on May 24-25, 1994. This conference will feature sessions on laboratory accreditation, optical metrology, and recent activities

of CORM.

The session on laboratory accreditation will include invited papers from the National Voluntary Laboratory Accreditation Program (NVLAP) and papers from United States laboratories seeking accreditation in the field of optical radiation measurements. The advanced optical metrology session will feature recent advancements at NIST in the areas of cryogenic and infrared radiometry, detector-based photometry, and spectrophotometry. The CORM session will begin with a report on the findings of the CORM SIXTH Report Committee and will include reports from the Directories Committee, Radiometry Committee, and Optical Properties of Materials Committee.

CORM News Release

EXPO 96

"Communication for a Better World" is the slogan of the World Exhibition to be organized in Budapest, May 11 to October 4, 1996. At the turn of the 20th-21st century, the means of communication is mostly radiant energy bearing information. The most spectacular parts of radiant energy are color and light. The exhibition, *Colour and Light in Communication*, will include the following scopes:

Color, color perception, color display, relations between colors, color systems, painted, printed, and electronic color collections

Reproduction of colors of the visible world, various techniques of reproduction, photo, film, video, etc., instrumental checking of color reproduction accuracy, tools and methods of colorimetry

Various coloration technologies, paints, light sources, etc. helping

visually shape our environment.

Color design methods, color composition procedures, man to color relations, color preferences, color associations, biological effects of color

Colour in architectural and fine-arts creation and in theatre.

At the end of Expo 93, the exhibition building adjacent to the university campus will accommodate the International Centre of Colour Information and Colour Education, as well as the Colour Museum. This establishment will offer a lasting possibility for continuous, up-to-date flow of information between researchers, producers, and users.

For more information on Expo 96, contact: Gabor David; Program Office of World Exhibition; 3, Tukory u.; H-1054 Budapest; 36-1-269-3500; Fax: 36-1-269-3550. Or contact: Prof. Antal Nemcsics; International Foundation of Colour and Light; 3, Muegyetem rkp.; H-1111 Budapest; Fax: 36-1-185-2218

Karen Braun

RIT OFFERS INDUSTRIAL SHORT COURSES IN COLOR IMAGING

Rochester Institute of Technology's Munsell Color Science Laboratory will present two advanced courses to provide further information on color in imaging applications. The enrollment of these courses will be limited to facilitate greater interaction, including laboratory sessions.

"Device-Independent Color Imaging" will be held on June 6-8, 1994. It is a three-day in-depth short course designed to teach the theory and practice of colorimetry as applied to device-independent color imaging. The

course includes lectures and demonstrations using Macintosh-based full-color imaging systems consisting of desk-top scanners, CRT displays, and continuous-tone printers. Colorimeters, color analyzers, spectroradiometers, and spectrophotometers will be employed for device characterization. This course will be taught by Dr. Roy S. Berns

The second advanced course, "Quantitative Visual Evaluation of Color and Images," will be held June 9-10, 1994. This two-day course covers the quantitative evaluation of visual stimuli, emphasizing the application of psychophysical techniques for analysis of color and images. This type of analysis is important for those working with systems that are intended to

produce or reproduce colored stimuli or color images. Participants will learn about the design of psychophysical experiments and the statistical analysis of the experimental results through lectures, demonstrations, and laboratory exercises. The final session of the course is dedicated to the solution of problems the participants may be facing in their work. Dr. Mark D. Fairchild is the instructor for this course.

For further information, contact Colleen M. Desimone, Munsell Color Science Laboratory, Rochester Institute of Technology, Chester F. Carlson Center for Imaging Science, 54 Lomb Memorial Drive, Rochester, N.Y. 14623-5604, (716) 475-7189, Fax (716) 475-5988.

COLOR RESEARCH AND APPLICATION

In This Issue, April 1994

CR&A This month's "Talking

About Color..." column features a discussion of color science education. Roy Berns talks about the need for an understanding of the theoretical principles of color science, which then can be applied in any of the diverse fields that use color. Not only do color scientists and engineers need a more global approach to color education, graphic designers and artists also require a knowledge of colorimetry as applied to computer color imaging and traditional materials.

The writings of Wilhelm Ostwald describe a color solid made up of a system of hue triangles with color scales of equal blackness and whiteness defined. People who work with mixtures of chromatic pigments modified by black or white often find the Ostwald system and the terms related to it very effective for organizing and describing their impressions. One person who was fascinated by the work of Ostwald was Egbert Jacobson, the design director of

Container Corporation of America in Chicago. In the late 1930s, that company financed the production of a color atlas, the Color Harmony Manual, based on the Ostwald color system. The atlas became quite popular and went through four editions. Although the atlas has been out of print since 1972, it is still found in many locations. Before the material is lost, Walter Granville takes this opportunity to describe the decisions underlying the production of the atlas, the availability of matching paints, a set of artists' colors, and production details of the colors. In "The Color Harmony Manual, a Color Atlas Based on the Ostwald Color System," he also compares the design of the color charts to those in other atlases.

Turning to color vision, one of the important factors involved in one's ability to discriminate colors clearly is the size of the stimulus. The smaller the patch of color, the more difficult it is to determine the hue. Some colors are easier to discriminate than others at small sizes. The size of the stimulus is even more important in the periphery. Observers may be completely color blind for small stimuli presented far to the side of their line of sight. Recently Nagy and Doyal examined red/green discrimination as a function of stimulus field size in peripheral vision. Now, in

"Red/Green Color Discrimination and Stimulus Size," Allen Nagy uses the model of Boynton and Kambe to analyze how red-green discrimination thresholds vary with field size in the fovea. Following this analysis Nagy then reveals similarities as well as some differences between the foveal and peripheral discrimination.

From the perception of colors, we move to the discrimination and evaluations of small color differences. In 1976, the CIE adopted the CIELAB and CIELUV color difference equations to promote uniformity of practice until a formula that would give substantially better correlation with visual data could be developed. Since that time a number of other color spaces have come into use. Marc Mahy, Luc Van Eycken, and Andre Oosterlinck present an "Evaluation of Uniform Colour Spaces Developed after the Adoption of CIELAB and CIELUV" using color discrimination data and appearance systems.

Sixteen years of investigations at the Technical University of Budapest resulted in development of the Coloroid Colour System. The Coloroid System adapts positive characteristics of several other systems. As in the Ostwald system, in the Coloroid Colour System every color is expressed as an additive mixture of a saturated color, white, and black. However, it is more perceptually based like the Munsell color system; the coordinates of the Coloroid Colour System refer to color perceptions of thousands of observers used to establish the aesthetically uniform psychometric scales. Recently, the Munsell notations of the Coloroid Colour Atlas samples have been determined at the Technical University of Budapest. This has made it possible to compare and contrast the two systems. In "Spacing in the Munsell Color System versus the Coloroid Colour System," Antal Nemcsics looks at the Munsell System through the eyeglasses of the Coloroid Colour System. Thus, he can comment on the identities, similarities, and differences between the two systems.

Just as the article by Nagy was

concerned with the size of color stimuli, the next article considers the size of the color as one dimension for comparison to duration of a sound. The temptation to compare perceptions collected through our different senses has long been felt. One of the most tempting pairs, eyes and ears, has led artists, both visual and musical, as well as scientists to compare color and sound. Numerous approaches have been taken involving intuition, as well as various fields of science. The most common compares the pitch of a sound to the hue of a color. However Jose Luis Caivano goes further in "Color and Sound: Physical and Psychophysical Relations" to consider other variables such as luminosity of color with loudness of sound, saturation of color with timbre of sound, and size of color with duration of sound. His training in both music and architecture provide a unique background for his insights.

In this issue, we have the third selection in the section Classical Articles in Color. First published in *Ophthalmologica* in 1942, the original article is entitled "Stiles-Crawford-Effekt" by H. Goldmann. Both the translation and the commentary are done by Sophie Wuerger. The term "directional sensitivity" is commonly used to denote variations in visual sensitivity that are observed when stimuli enter the eye through different parts of the eye pupil and are imaged on the same retinal area. In 1933, Stiles and Crawford introduced an empirical formula to represent this variation. This article describes Goldmann's elegant experiment to prove that the Stiles-Crawford Effect originates in the retina.

COMMERFORD SELECTED TO RECEIVE NICKERSON SERVICE AWARD

It is with great pleasure that the Inter-Society Color Council announces the selection of Therese R. Commerford to receive the 1994 Nickerson Service Award. The medal will be presented during the award luncheon Monday April 25, 1994 at the Troy Marriott in Troy Michigan.

The ISCC Nickerson Service Award was established in 1980 to recognize outstanding long-term contributions toward the advancement of the 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. The Award is named to honor the late Dorothy M. Nickerson, a founding member of the Council, its Secretary from 1938-1950, and its President from 1954 to 1956.

Therese R. Commerford becomes the ninth recipient of the Nickerson Service Award for her service as Secretary from 1982 to 1990, Director from 1977-1980, and numerous committee involvements (the Long Range Planning Committee and Problem Committees # 16, 24, 25, 27, 34, and 44). Commerford is Chief of Research, Development and Engineering Center in Natick Massachusetts. It is with great pride that the ISCC honors Therese R. Commerford.

C A L E N D A R

Please send information on Member Body and other organization meetings involving color with dates, places, and information source to:

Harry K. Hammond, III
BYK-Gardner, Inc.
2435 Linden Lane
Silver Spring, MD 20910
301-495-7150 FAX 301-585-4067

1994

GATF ANNUAL MEETING, Mar. 14-16

Graphic Arts Technical Foundation, SPC Annual Meeting, Drake Hotel, Chicago, Illinois. Information: (412) 621-6941.

ASTM COMMITTEE D-20 ON PLASTICS, Mar. 20-24

Montreal, Quebec, Canada. Information: Katharine Schaaf (215) 299-5529.

CLEMSON COLOR MEASUREMENT SEMINAR, Apr. 5-6

Color Measurement for the Textile Industry, Clemson University. Information: Jud Hair (803) 656-2200.

IMAGES IN COLOUR, Apr. 10-12

The Royal Photographic Society Imaging Science and Technology Group and The Colour Group (Great Britain) host AIC '94 Interim Meeting on Images in Colour. University of Cambridge, Cambridge, England. Information: Michael Pointer 44 81 424 4524, Fax 44 81 424 3750.

BARTLESON SYMPOSIUM, Apr. 11

Cambridge University, Cambridge, England. Included in Images in Colour.

ISCC - ANNUAL MEETING, Apr. 24-26, 1994

Inter-Society Color Council Annual Meeting. Joint Symposium with Detroit Colour Council "Auto Design Tech" Apr. 26, Troy Marriott, Detroit, Michigan. Information: James Keiser (313) 583-8345, Fax (313) 583-8316.

TAGA ANNUAL CONFERENCE, May 1-4

Technical Association of the Graphic Arts Annual Technical Conference, Baltimore, Maryland. Information: Karen Lawrence (716) 475-7470.

CMG - CONFERENCE, May 8-10

Color Marketing Group International Color Directions Conference, Sheraton New York Hotel & Towers, New York, New York. Information: Katie Register (703) 329-8500, Fax (703) 329-0155.

PRINCIPLES OF INDUSTRIAL COLOR MEASUREMENT, May 10-12

RIT Short Course, Munsell Color Science Laboratory, Rochester Institute of Technology, Rochester, New York. Information: Colleen Desimone (716) 475-7189, Fax (716) 475-5988.

AATCC NATIONAL COMMITTEE MEETINGS, May 10-12

Marriott Inner Harbor, Baltimore, Maryland. Information: AATCC (919) 549-8141.

FATIPEC CONGRESS, May 15-19

Development of the Lacquer and Paint Industry, Budapest. Information: Fatippec Congress Secretariat, Hungarian Chemical Society (36-1) 201 6883, Fax (36-1) 156 1215.

IS&T 47th ANNUAL CONFERENCE, May 15-20

International Committee on the Science of Photography, ICPS '94: The Physics and Chemistry of Imaging Systems, and IS&T's 47th Annual Conference, Stouffer Rochester Plaza Hotel, Rochester, N.Y. Information: IS&T (703) 642-9090, Fax (703) 642-9094

CORM 94, ANNUAL MEETING, May 24-26

Optical Radiation Metrology and Accreditation. Council for Optical Radiation Measurement, National Institute for Standards and Technology, Gaithersburg, Maryland. Information: Chris Cromer, NIST (301) 975-3216, Fax (301) 840-8551.

SID '94, Jun. 12-17

Society for Information Display, International Symposium, Seminar, and Exhibition, San Jose Convention Center, San Jose, California. Information: Joyce Farrell, Conference Chair (415) 857-2807, Fax (415) 857-4320, E-mail "farrell@hplabs.hp.com".

ASTM COMMITTEE E-12 ON APPEARANCE,**Jun. 20-23**

Montreal, Quebec, Canada. Information: Bode Buckley (215) 299-5599.

CORM/UVSG CONFERENCE, Jun 20-23

2nd Oxford Conference on Spectrometry, Franklin Pierce College, Rindge, New Hampshire. Information: Dr. Dianna Jones, V.P. CORM (407) 292-3168, Fax (407) 292-3169; Dr. Chris Burgess, UVSG, Glaxo (0) 833-692490 Fax (0) 833-692774.

ASTM COMMITTEE D-1 ON PAINT, Jun. 26-29

Marriott Crab Tree Valley, Raleigh, North Carolina. Information: Scott Orthey (215) 299-5507.

ASTM COMMITTEE D-20 ON PLASTICS, Jul. 17-21

Cincinnati, Ohio. Information: Katharine Schaaf (215) 299-5529.

INTERNATIONAL SYMPOSIUM, Jul. 26-28

Illuminating Engineering Institute of Japan, Tokyo, Japan

IESNA ANNUAL CONFERENCE, Aug. 7-11

Illuminating Engineering Society of North America, 88th Annual Conference, Doral Resort & Country Club, Miami, Florida. Information: Valerie Landers (212) 705-7269.

INTERNATIONAL CONFERENCE ON COLOR EDUCATION, Aug. 17-19

University of Industrial Arts, Helsinki (UIAH), Helsinki, Finland. Information: Harald Arnkil (+358 0) 799 827, 75631, Fax (+358 0) 7563 223.

4TH INTERNATIONAL CONFERENCE ON VISUAL SEARCH, Aug. 29-Sep. 1

The Fourth International Conference on Visual Search, Koningshof, Eindhoven, Netherlands. Information: Prof. A.G. Gale, Applied Vision Research Unit, University of Derby, Chevin Avenue, Western Road, Mickleover, Derby, DE3 5GX.

1994 EUROPEAN CONFERENCE ON VISUAL PERCEPTION, Sep. 4-8

Institute for Perception Research, Veldhoven, Netherlands, Information: H. de Ridder, P.O. Box 513, 5600 MB Eindhoven, The Netherlands.

JOHN DALTON CONFERENCE, Sep. 9-13

An International Color Vision Meeting to commemorate the 200th anniversary of Dalton's first description of his own color vision defect, UMIST, Manchester. Information: Dr. C. Dickinson, UMIST, P.O. Box 88, Manchester

COLOR COMMUNICATION, Sep. 12-13

Jointly organized by The Colour Measurement Committee of the Society of Dyers and Colourists, The National Physical Laboratory, Spectrophotometry and Colorimetry Club, and The Department of Textiles, UMIST, Manchester, UK.

IS&T PHOTOFINISHING TECHNOLOGY, Sep. 19-21

IS&T Minilabs and Photokina, Cologne Germany. Information: IS&T (703) 642-9090, Fax (703) 642-9094

CMG - CONFERENCE, Sep. 25-27

Color Marketing Group International Color Directions Conference, Sheraton Bal Harbour, Bal Harbour, Florida. Information: Katie Register (703) 329-8500, Fax (703) 329-0155.

COLOR AND COLORIMETRY, Sep. 29-Oct. 1

Fourth International Symposium of Colour and Colorimetry, Slovene Centre for Color, University of Maribor, Maribor, Slovenia. Information: (+3862) 25 461, Fax (+3862) 255 013.

OSA - ANNUAL MEETING, Oct. 2-7

Optical Society of America Annual Meeting, Dallas, Texas. Information: OSA Meetings Department (202) 416-1980.

INTERNATIONAL DISPLAY RESEARCH CONFERENCE, Oct. 10-13

Society for Information Display, Advisory Group on Electron Devices, and IEEE Electron Devices Society, Hyatt Regency Hotel, Monterey, California. Information: Thomas Credelle, General Chair (408) 862-7271.

AATCC - CONFERENCE AND EXHIBITION, Oct. 11-14

International Conference and Exhibition, American Association of Textile Chemists and Colorists, Convention Center, Charlotte, North Carolina. Information: AATCC (919) 549-8141.

USNC/CIE ANNUAL MEETING, Oct. 16-18

United States National Committee of CIE, San Diego, California. Information: Jonathin Hardis, NIST (301) 975-2373, Fax (301) 840-8551.

GATE/NSTF ANNUAL CONFERENCE, Oct. 16-19

Graphic Arts Technical Foundation, Saddlebrook Resort, Tampa, Florida. Information: (412) 621-6941, Fax (412) 621-3049.

10th INTERNATIONAL CONGRESS ON ADVANCES IN NON-IMPACT PRINTING TECHNOLOGIES, Oct. 30- Nov. 4

IS&T, Sheraton Hotel, New Orleans, LA. Information: IS&T (703) 642-9090, Fax (703) 642-9094.

ASTM COMMITTEE D-20 ON PLASTICS, Nov. 14-17

Phoenix, Arizona. Information: Katharine Schaaf (215) 299-5529.

IS&T/SID COLOR CONFERENCE, Nov. 15-18

Soc., 2nd Color Imaging Conference: Color Science, Systems, and Applications, The Registry, Scottsdale, Arizona. Information: IS&T (703) 642-9094; SID (310) 305-1502.

ADVANCES IN PHOTOMETRY, Dec. 1-3

CIE Expert Symposium on Advances in Photometry, Lighting Quality and Energy Conservation, CIE Central Bureau, Vienna, Austria. Information: CIE (+43-1) 714-3187, Fax (+43-1) 713-0838.

1995**ASTM COMMITTEE D-1 ON PAINT, Jan. 22-24**

San Antonio, Texas. Information: Scott Orthey (215) 299-5507.

ASTM COMMITTEE E-12 ON APPEARANCE,

Jan. 26-27

Phoenix, Arizona. Information: Bode Buckley (215) 299-5599.

ISCC WILLIAMSBURG CONFERENCE, Feb. 12-15

Inter-Society Color Council Williamsburg Conference, Williamsburg, Virginia. Information: Michael Brill (703) 734-4027.

ASTM COMMITTEE D-20 ON PLASTICS, Mar. 12-16

Denver, Colorado. Information: Katharine Schaaf (215) 299-5529.

TAGA ANNUAL CONFERENCE, Apr. 2-5

Technical Association of the Graphic Arts Annual Technical Conference, Orlando, Florida. Information: Karen Lawrence (716) 475-7470.

ISCC ANNUAL MEETING, Apr. 23-25

Color And Textiles, Inter-Society Color Council with American Association of Textile Chemists and Colorists, Holiday Inn Four Seasons, Greensboro, North Carolina. Information: Ann Laidlaw (919) 274-1963.

CMG - CONFERENCE, May 14-16

Color Marketing Group International Color Directions Conference, Fairmont Hotel, Dallas, Texas. Information: Katie Register (703) 329-8500, Fax (703) 329-0155.

CORM 95, ANNUAL MEETING, May 15-17

Council for Optical Radiation Measurements, Ottawa, Ontario, Canada. Information: Norbert Johnson (612) 733-5939, Fax (612) 733-6211.

ASTM COMMITTEE E-12 ON APPEARANCE,

Jun. 19-21

Denver, Colorado. Information: Bode Buckley (215) 299-5599.

ASTM COMMITTEE D-20 ON PLASTICS, Jul. 9-13

Lake Como, Wisconsin. Information: Katharine Schaaf (215) 299-5529.

OSA - ANNUAL MEETING, Sep. 10-15

Optical Society of America Annual Meeting, Portland, Oregon. Information: OSA Meetings Department (202) 416-1980.

AATCC - CONFERENCE AND EXHIBITION, Oct. 8-11

American Association of Textile Chemists and Colorists, Hyatt Regency, Atlanta, Georgia. Information: AATCC (919) 549-8141.

CIE 23rd QUADRENNIAL MEETING, Nov. 1-3

Division Meetings, Nov. 6-8

International Commission on Illumination (CIE), Vigyan Bhavan Conference Complex, New Delhi, India. Information: Jonathin Hardis, Secretary USNC/CIE (301) 975-2373, Fax (301) 840-8551, E-mail "hardis@onyx.nist.gov"

CMG - CONFERENCE, Nov. 5-7

Color Marketing Group International Color Directions Conference, Phoenix, Arizona. Information: Katie Register (703) 329-8500, Fax (703) 329-0155.

ASTM COMMITTEE D-20 ON PLASTICS, Nov. 13-16
Norfolk, Virginia. Information: Katharine Schaaf (215) 299-5529.

1996**ASTM COMMITTEE D-1 ON PAINT, Jan.**

Fort Lauderdale, Florida. Information: Scott Orthey (215) 299-5507.

ASTM COMMITTEE E-12 ON APPEARANCE, Jan.
Fort Lauderdale, Florida. Information: Bode Buckley (215) 299-5599.

ASTM COMMITTEE D-20 ON PLASTICS, Mar. 18-21
Orlando, Florida. Information: Katharine Schaaf (215) 299-5529.

ISCC ANNUAL MEETING, Apr. 21-23
Orlando, Florida. Information: Ann Laidlaw (910) 274-1963.

TAGA ANNUAL CONFERENCE, Apr 28-May 1
Technical Association of the Graphic Arts Annual Technical Conference, Dallas, Texas. Information: Karen Lawrence (716) 475-7470.

ASTM COMMITTEE E-12 ON APPEARANCE, Jun.
San Francisco, California. Information: Bode Buckley (215) 299-5599.

AATCC - CONFERENCE AND EXHIBITION, Oct. 8-11
American Association of Textile Chemists and Colorists, Oprtkabd Hotel, Nashville, Tennessee. Information: AATCC (919) 549-8141.

ASTM COMMITTEE D-20 ON PLASTICS, Nov. 18-21
New Orleans, Louisiana. Information: Katharine Schaaf (215) 299-5529.

1997**TAGA ANNUAL CONFERENCE, May 4-7**

Technical Association of the Graphic Arts Annual Technical Conference, Montreal or Quebec City, Canada. Information: Karen Lawrence, (716) 475-7470.

COLOUR '97, May 26-30

8th AIC Quadrennial Meeting, Colour '97, Executive Committee Meeting on May 25, Kyoto International Conference Hall (KICH), Kyoto, Japan.

ISCC ANNUAL MEETING, Sep. 14-17

Inter-Society Color Council Annual Meeting with Color and Appearance Division of Society of Plastics Engineers. Newport, Rhode Island. Information: Ann Laidlaw (910) 274-1963.

AATCC - CONFERENCE**AND EXHIBITION, Sep. 28- Oct. 1**

American Association of Textile Chemists and Colorists, Marriot Marquis, Atlanta, Georgia. Information: AATCC, (919) 549-8141.

1998**TAGA ANNUAL CONFERENCE, May 3-6**

Technical Association of the Graphic Arts Annual Technical Conference, Chicago, Illinois. Information: Karen Lawrence, (716) 475-7470.

AATCC - CONFERENCE AND EXHIBITION, Oct. 4-7

American Association of Textile Chemists and Colorists, Philadelphia, Pennsylvania. Information: AATCC, (919) 549-8141.

1999**TAGA ANNUAL CONFERENCE, May 2-5**

Technical Association of the Graphic Arts Annual Technical Conference, Philadelphia, Pennsylvania. Information: Karen Lawrence, (716) 475-7470

AATCC - CONFERENCE AND EXHIBITION, Oct. 12-15

American Association of Textile Chemists and Colorists, Convention Center, Charlotte, North Carolina. Information: AATCC, (919) 549-8141.

Coming Up: ISCC Annual Meeting

**April 24-26, 1994
Detroit, Michigan**

INTEREST GROUP I

**Fundamental and Applied Color Research
Paper and Discussion Session**

INTEREST GROUP II

**Industrial Application of Color
Paper and Discussion Session**

INTEREST GROUP III

Art, Design, and Psychology

POSTER PAPERS SESSION

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meeting reports



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