Inter-Society Color Council News

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INFORMATION ON MEMBER BODIES

On the back page of each issue of ISCC NEWS, is a list of current Member Bodies-now numbering 25. In the March/April issue (330) is a brief biographical sketch of the newest Member body, The Human Factors Society. What do ISCC NEWS readers know about the other 24?

Some Member Bodies are primarily concerned with color, as their name implies. Others have only a relatively small involvement with color.

Several years ago, Edward Cairns, a member of the Publications committee, began a series of short articles on the mission and color interest of various Member Bodies, however the difficulty of obtaining information caused him to terminate the effort.

ISCC would like to reactivate that regular section of ISCC NEWS.

The plan is quite simple. The Delegation Chairperson from each Member Body is requested to write an item about how the Body is organized, what it does in general and particularly in the field of color.

Delegation Chairpersons: please begin as soon as possible. You can wait until you receive a personal request from Harry K. Hammond III, or you can expedite the receipt of material by sending the item now! If at all possible, please send on disk.

Harry K. Hammond III

Number 331

May/June 1991

USNC/CIE: WHAT IS IT? HOW DOES IT OPERATE?

What is CIE? CIE is the abbreviation for the International Commission on Illumination taken from its name in French, Commission Internationale de l'Eclairage. More important that the name is what the CIE does. CIE is an organization devoted to international cooperation and exchange of information among 35 member countries on all matters relating to the science and art of lighting — illuminating engineering, radiometry, photometry, and colorimetry. USNC is the abbreviation for United States National Committee. Each national committee of the CIE serves as the channel for information going to and coming from CIE.

Many of the ISCC members are familiar with CIE standard observers, CIE standard Illuminants D65, C, etc., CIE color computations using chromaticity coordinates, CIE color difference computations using CIE 1976 L*a*b* or L*u*v*. But many are uninformed about how the CIE operates. The Central Bureau of the CIE is located in Vienna, Austria. It has a full-time executive secretary and a small staff. One of its important functions is the publication of CIE documents. CIE has an elected Board of Administration composed of eight officers serving four-year terms. The executive committee consists of the president and one person appointed by each of the 3 member countries. The technical work of the CIE is organized into seven divisions, each with its own objectives: Division 1, Vision and Color; Division 2, Physical Measurement of Light and Radiation; Division 3, Interior Environment and Lighting Design; Division 4, Lighting and Signaling for Transport; Division 5, Exterior and Other Lighting Applications; Division 6, Photobiology and Photochemistry; and Division 7, General Aspects of Lighting. Each division is organized into Technical Committees that are given specific assignments to be completed within each quadrennial period. Membership in the USNC is open to anyone desiring to support L.e USNC and willing to participate in its activities. A brochure and membership application can be obtained from: Mrs. LaRee Di Stasio, Membership Chairman, USNC/CIE, Illuminating Engineering Society of North America, 345 E. 47th St., New York, NY 10017, (212) 705-7916; FAX: (212) 705-7641. Technical questions about the activities of the USNC or CIE should be addressed to: Dr. Jack Hsia, Secretary, USNC, National Institute of Standards and Technology, Rm. B306, Bldg, 220, Gaithersburg, MD 20899, (301) 975-2342; FAX (301) 975-4091.

Condensed from ASTM Standardization News, March 1991, Harry K. Hammond III

ASTM - MEMBER BODY SINCE 1931

What is ASTM? One of the largest voluntary standards development organizations on the world, was organized in 1898. It now has more than 33,000 technically qualified members working in 134 committees. ASTM is a not-for-profit organization. It provides a consensus forum for producers, users, ultimate consumers and general interest people (government and academia) to write standards for materials, products, systems, and services. More than 8,500 standards are published each year in the 68 volumes of the Annual Book of ASTM Standards. Standards development activities include the fields of metals, paints, plastics, textiles, petroleum, construction, energy, the environment, consumer products, medical services and devices, computerized systems, electronics, and of course color and appearance of materials. Its publications include test methods, specifications, practices, guides, classifications and terminology.

Standards, on paint, including such appearance attributes as color, color difference, and gloss have been found in the

volumes of the standards of Committee D-1 on Paint and Related coatings and Materials, organized in 1902. Likewise, standards dealing with the appearance of plastics, such as haze and clarity have been found in the volumes compiled by Committee D-20 on Plastics, organized in 1937.

After WWII, members concerned with the measurement and specification of appearance held meetings to discuss the desirability of forming a committee to deal specifically with appearance standards having general applicability. Committee E-12 on Appearance was organized in 1948. Some standards dealing with color and appearance are still published in volumes of the standards of individual committees; however in the early 1980's Richard S. Hunter revised hundred of standards dealing with appearance in whole or in part. The committee on Appearance convinced ASTM to publish a compilation of those that are applicable to more than one material. The first edition was published in 1984, a second edition in 1987 in now out of print; so a third edition is to be published in 1991.

Harry K. Hammond III

OBITUARY: PROFESSOR DR. -ING. HABIL. MANFRED RICHTER 1905-1990

The color community of Germany and the world has lost an outstanding leader as a result of a traffic accident, November 19, 1990. On that evening, in the dark, he was crossing the road after walking between parked cars. Because of his dark coat, the driver did not see him nor did he see the car. Thus ended the life of a fine 85-year old gentleman who had served as teacher and researcher in Color in Germany for five decades. The shock of his tragic death was particularly great for those who attended the AIC-Interim Symposium on Instrumentation for Color Measurement in Berlin, September 3-5, 1990, in which he participated actively, particularly in the social events. He planned to publish all of the papers in English in the journal "Die Farbe".

Prof. Richter studied Physics at the Technical University in his hometown of Dresden. His Ph.d thesis was on Goethe's "Theory on Colors". Richter began his scientific career at the Research Center of the German Institute for Textiles, but he soon joined the Osram Illumination Laboratory in Berlin. IN 1938, he joined the Federal Institute for Materials Research and Testing (regularly referred to as the BAM from its name in German, Bundesanstalt fur Materialforschung und -prufung). At the BAM he was asked to establish a Color Measurement Laboratory which later became a Sub-Department which he headed from 1949 until his retirement in 1970. He was especially interested in the DIN Color System and he devoted much of his time to it from 1942 to 1962. The "Story of the DIN Color System," an article coauthored with Klaus Witt of the BRM, appears in COLOR Res. Appl. 11, 2, 138-146 (1986). He also wrote an article on "The Development of Color Metrics," published in COLOR Res. Appl. 9, 2, 69-83 (1984).

Richter was a lecturer at the Technical University in Berlin since 1949 and in 1953 he was appointed Professor of Physiological Optics and Colorimetry. He was also responsible for organizing color courses at the BAM.

In 1940 he published a book titled "Grundriss der Farbenlehre" (Basis of Color Science) based on his Doctoral Thesis. In 1978 Walter de Gruyter published an updated version titled "Einfuhrung in die Farbmetrik" (Introduction to Colorimetry). Richter published more than 175 papers and two international bibliographies on color science. He was founding editor of the journal Die Farbe and publisher of it since 1952.

In 1941, Richter founded the Deutsche Farbenausschuss (German Color Committee) the predecessor of Normenausschuss Farbe FNF (Standard Committee on Color) which he established in 1949, serving as president until 1971 and then as honorary president. For his work in the field of standardization he was made a member of the Waldemar-Hellmich-Kreis. In 1974 he received the DIN Golden Ring of Honor. The Deutsche farbwissenschaftliche Gesellschaft (German Color Science Association) was founded in 1974 with Richter as president. He stepped down in 1982 and became an honorary member.

In recognition of his international activities, he received the silver medal of the Viennese Photographic Society in 1944, the Ordre du Merite pour la Recherche et l'Invention in 1962, and the 1981 Deane B. Judd-AIC Award of the Association Internationale de la Colour. The citation for this award was published in COLOR Res. Appl., 7, 15 (1982). In 1989 Richter attended the quadrennial meeting of the AIC in Buenos Aires, Argentina, and was made an honorary member of Grupo Argentino de Color.

We shall miss his leadership and teaching.

Heinz Terstiege, Harry K. Hammond, III

AIC 25TH ANNIVERSARY

ISCC 61ST ANNUAL MEETING

Princeton, NJ, U.S.A.

June 21 - 24, 1992

Computer Colorant Formulation

Call for Papers

The International Colour Association was started at a meeting in Washington DC, U.S.A. in 1967. It will return to the United States in 1992 to celebrate its 25th Anniversary with a two-day international symposium on Computer Colorant Formulation. This meeting will be held on June 23 - 24 on the campus of Princeton University, easily accessible from New York or Philadelphia. It will be preceded by the ISCC Annual Meeting on June 21 - 22. The meetings will include discussions on a wide range of topics related to color and appearance, working sessions of ISCC project committees, social functions to get to know your fellow-workers in color, visits to nearby places of interest, the symposium, and a banquet celebrating the AIC Silver Jubilee.

The symposium will be divided into four sections covering Colorant Formulation:

• Where the substrate plays a significant role, e.g., printing.

• From simulated color, e.g., from CRTs, liquid crystal, Maxwell disk, etc.

FLUORESCENT COLOR STANDARD

The Fluorescent Mineral Society is coordinating a research project to develop a fluorescent color standard. The Fluorescent Mineral Society is a twenty year old international society made up of professional mineralogists, professors, engineers and hobbyists who study and collect fluorescent minerals. The Fluorescent Mineral Society publishes a yearly technical journal.

The Fluorescent Color Standard (FCS) will consist of one or more disks, cards, or plates with from 10 top 70 individual areas, each coated with a different fluorescent phosphor. The FCS will be used in the dark. Both the FCS and the mineral will be exposed to emissions from a 254nm or 365nm UV source, filtered through a ultraviolet-transmitting, visible-absorbing filter. A visual color comparison will then be made between the fluorescent mineral and t fluorescent phosphor standard. This comparison will provide a standard name and approximate chromaticity coordinates for the dolor observed in the mineral. The FCS will be usable for commercial, bobby, or professional application.

Emissive UV fluorescent phosphor standards have been developed in the past, but I am not aware of any that have been designed specifically to work with filtered emissions from UV sources. IF anyone is interested, or has any knowledge of, any fluorescent color standards that have been used with filtered emissions from UV sources please contact me.

> Don Newsome, FCS Research Coordinator 16695 127th Ave. S.E. Renton, WA 98058 Telephone Evenings: (206) 271-8711

• Allowing for appearance effects e.g. due to gloss or polychromatic pigments.

· General theory and practice.

You are invited to contribute papers within these general categories for this symposium. If you would like to present a paper at the meeting, please contact the Program Chairman before June 1991. Extended abstracts will be required by October, 1991, for acceptance by the Program Committee by January 1992.

AIC President: Dr. Alan Robertson,

Institute for National Measurement Standards, National Research Council, Ottawa, Canada, K1A OR6.

ISCC President: Mr. Hugh Fairman, Armorguard Products, P. O. Box 215, Andover, NJ 07821, U.S.A.

Meeting Chairman: Dr. Allan Rodrigues, E. I. Du Pont, P. O. Box 2802, Troy, MI 48007-2802, U.S.A.

Program Chairman: Mr. Ralph Stanziola, Industrial Color Technology, 410 Clover Court, Neshanic Station, NJ 08853, USA.

XVII Congress of International Society For Photogrammetry And Remote Sensing

August 2-14, 1992 • Washington, DC USA



Make your plans now to attend the XVII ISPRS Congress. The American Society for Photogrammetry and Remote Sensing, the American Congress on Surveying and Mapping, and the International Geographical Union will hold concurrent meetings on Global Change. For information, contact XVII ISPRS Congress Secretariat, P.O. Box 7147, Reston, VA 22091-7147.

XVII ISPRS CONGRESS

Call For Papers

International Society for Photogrammetry and Remote Sensing (ISPRS)

Introduction



The 17th Congress of the International Society for Photogrammetry and

Remote Sensing (ISPRS) will be held August 2-14, 1992 in Washington, DC, USA. In coincides with the International Space Year and and 500th Anniversary of the Discovery of America. Scientific and engineering information from the imaging sciences of photogrammetry and remote sensing will be the focus of the XVII Congress. Scientific and engineering information from the imaging sciences of photogrammetry and remote sensing will be the focus of the XVII Congress. Scientists and practitioners form around the world are invited to present findings, and to discuss research and technical developments.

DEADLINE CORRECTION

There was a slight missprint in the last issue of ISCC NEWS. The deadline for submission of material for publication in ISCC NEWS is:

the 1st of the EVEN numbered month prior to the issue publication

Deadline for the next issue (July/August) is June 1.

Submission of Papers

Prospective authors are invited to request the form for abstracts NOW. The selection of papers for presentation at the 17th ISPRS Technical Commission Presidents. Papers may be invited or selected from abstracts submitted in response to this Call For Papers. Papers may be selected for presentation within one of 90 scheduled technical sessions in either an oral or Poster format. Submissions from commercial organizations may be selected for the new Exhibitor's Showcase sessions, Simultaneous interpretation into English, French and German will be provided for approximately one third of the invited and presented papers. It is required that the Form for Abstracts be completed and that every paper be presented by one of its authors.

Deadline for Abstracts is 30 November 1991.

Concurrent Meetings

During the 17th ISPRS Congress, two other major meetings will be held at nearby facilities: the Annual ASPRS/ ACSM Convention on the theme "Global Change" to be held during the first week; and the International Geographical Union's 27th International Geographical Congress to be held throughout the second week.

Arrangements have been made to allow ISPRS Congress participants to attend these meetings for a modest additional fee.

Other international societies and the International Union of Surveys and Mapping will conduct meetings and technical sessions and join with ISPRS in "Sister Society Days". In addition, the United Nations will jointly conduct, with the ISPRS Congress, a UN Interregional Seminar for Developing Countries.

Other Activities

A full program of technical tours as well as social and cultural events is planned. A major Exhibition by manufacturers and service companies along with displays by scientific organizations and the 83 National Members of ISPRS also will take place at the Congress.

COLOUR GROUP (GREAT BRITAIN)

Call For Papers

The AVA and the Colour Group are planning a joint meeting on the subject of colored lenses in the treatment of reading difficulties and associated problems. This will be held in London on July 10, 1991. Contributions are invited. These are expected to take the form of short talks. Abstracts should be sent to: Dr. W. D. Thomson, Department of Optometry and Visual Science, The City University, Dame Alice Owen Building, 311-321 Goswell Road, London EC1V 7DD.

237th Meeting of the Colour Group

This meeting, which was held at the National Physical Laboratory considered the application of colour in thermal imaging and X-ray microanalysis systems. Dr. F. J. J. Clarke gave a summary of the progress that has been made in thermal imaging during the last decade. Dr. Clarke showed a number of demonstrations of live thermal images which revealed clearly many types of applications. Ms. J. Wood described the use of colour in X-ray Microanalysis. Applications of colour fall into three main categories: pseudo colour, false colour and using color to highlight changes. Dr. Clarke completed the meeting by describing a new pseudocolour scale which had been developed at the National Physical Laboratory. The NPL scale is continuous, is based on psychophysical judgments, and is uniformly graded in luminosity and chromaticity. The resulting look up tables are in accord with existing colour vision knowledge. Hence the colored images are considered to be more easily interpreted by the user than those resulting from other available scales.

PRINCIPLES OF COLOR REPRODUCTION COURSE



Rochester Institute of Technology's Munsell Color Science Laboratory will present "Principles of Color

Reproduction: An Intensive Short Course," September 25-27, 1991. Instructing the course will be Dr. Robert W. G. Hunt, an international expert on color reproduction and author of "The Reproduction of Colour in Photography, Printing, and Television" and "Measuring Colour." Dr. Hunt was a member of the Eastman Kodak Research Laboratories for 36 years and was extremely active in the International Commission on Illumination (CIE). The comprehensive short course provides fundamental

information about color perception, color measurement, and color formation in photography, printing, and television. A wide array of visual demonstrations is presented to reinforce each lecture topic. Topics include: the visual system, spectrophotometry, RGB colorimetry, CIE systems, color discrimination, trichromatic color reproduction, additive and subtractive image formation, photographic technology, television technology, and printing technology. The course is highly beneficial to people involved in photography, graphic arts, electronic imaging, and television. For further information, please contact Colleen McCabe, Munsell Color Science Laboratory, Rochester Institute of Technology, Chester F. Carlson Center for Imaging Science, Rochester, New York 14623, Tel. (716) 475-7189, FAX: (716) 475-5988.

NEWS FROM MEMBER BODIES

DETROIT COLOUR COUNCIL REPORT



The first DCC 1991 Program meeting featured Sy Commanday of Hercules, March 14. Commandy spoke on the pros and cons of color measurement. An overflow crowd was attracted to Commandy's presentations, which illustrated the usefulness of measured data as well as numerous situations in which the colorist may be mislead by the data.

A combined 75 years in the automotive color business by Leonard Dick, retired from PPG, and Sol Panush, retired from BASF, was the unusual subject May 15 for a "Career Reflections" programs. The recent retirees, both now consultants, shared the industry advancement, opportunities and disappointments of providing color to the auto industry.

A September 18 symposium on automotive color matching was announced. the panel from auto companies and suppliers will discuss maintaining proper standards, coordination of dissimilar material, color terminology, tolerances, color measurement analysis and personnel training. The site is the Michigan State Management Education Center in Troy, m Michigan.

DCC will support for the forth year the 3-credit course in Color Technology at Eastern Michigan University. A full class is expected from industry personnel and full-time EMU students. A well-equipped lab in Polymers and Coatings Technology is the basis for a "Hands-on" approach to learning basic color principles.

DCC officers for 1991 are : Ella Brennan Cotter, BASF, President Brian Stott, PMS Consolidated, Vice-President James Hall, General Motors, Secretary Patricia Oldenkamp, T.K.Lowry Sales, Treasurer

WHICH APPEARANCE MEASUREMENT INSTRUMENT SHOULD I CHOOSE?

Instrument manufacturers provide a variety of appearance measurement instruments to industry. They can range from a simple colorimeter to a Spectro-Goniophotometer. It all depends on your specific needs.

When you feel you need one though, how do you decide which one will best meet your requirements? There are several alternatives:

1. Obtain a demonstration by each instrument manufacturer you wish to talk with. Most will gladly accommodate you. It gives you an overview of the system in less than a day.

2. Negotiate a rental-purchase plan with one or more manufacturers for 30 to 60 days. This is usually at minimal cost to you. You then have the instrument to investigate at your leisure.

3. Hire a consultant to analyze your measurement requirements and let them recommend one or more instruments. (There are numerous qualified consultants in this industry).

4. Ask others with similar requirements as yours, what their experience has been. For the most part, they would be happy to tell you their experiences (unless it is your competitor, vying for your customer!)

5. Run an extended series of tests with various manufacturers' instruments. This is sometimes harder to do. It takes quite a bit of co-ordination between the manufacturers and many man-hours; yours and theirs.

There are any number of good quality books on appearance. Read a few of them in advance. Know what you want, as best you can.

Most important of all, ask questions. You can not find out what you want to know, until you ask.

Harry K. Hammond III

OPTICAL SOCIETY OF AMERICA (OSA)

Call for Papers

of the SOCIETY OF AMERICA

The 1991 OSA Annual Meeting will take place at the San Jose Convention Center, November 3-8, 1991. All five divisions of the Optical Society — Optical Science, Optical Technology, Photonics, Quantum Electronics, and Vision and Medical Optics— will sponsor an extensive program of symposia, short courses, and tutorials. Contributed papers

will address all fields of optics. All OSA members are invited to contribute a paper to the OSA Annual Meeting. A non-member desiring to contribute a paper must be sponsored by an OSA member. Each contributed paper will be allotted 12 minutes for presentation, 3 minutes for discussion. Provision for the presentation of poster papers will be made. Also, a limited number of contributed papers that include demonstrations will be accepted. It is expected that contributed papers will represent original contributions to optical science and technology. Abstracts of papers will be published in the advance program of the meeting. The summaries will be printed in the technical digest, which will be available for purchase at the meeting. The author(s) of each contributed paper is required to submit an abstract of not more than 25 words and a summary of fewer than 200 words. Authors are encouraged to submit contributed papers to symposia. The 1991 OSA Annual Meeting Abstract of Paper Form must be used. Abstracts and summaries must reach the Optical Society Executive Office on or before May 31, 1991. Send the abstract of paper form to the Optical Society of America, 1991 Annual Meeting, 2010 Massachusetts Avenue, NW, Washington, DC 20036.

IESNA ANNUAL CONFERENCE

Illuminating Engineering Society of North America (IESNA) will hold its 85th Annual conference at the Sheraton Centre Hotel, August 1-15, 1991 in Montreal Canada.

The IESNA Annual Conference serves as a comprehensive educational forum for all professionals in the lighting industry. the 1991 Conference will feature technical paper sessions on design theory, applications, measurement and controls, light sources, daylighting, HID, fluorescents, VDT lighting, roadway lighting, visibility and vision. Educational seminars will be held on International Design considerations, in Lighting, The impact of Free Trade on the Lighting Industry, Fluorescent Ballasts and Lamps, Energy Incentive Programs, in the U.S. and Canada, Liabilities in Lighting Design, Lighting Design Certification, and Lighting for

the Olympics along with workshops on Budgeting a Lighting Job, and The Use and Interpretation of Lighting Instruments and Measurements. An annual progress report of new products and services and a table top exhibit of major products are also scheduled. Luncheon programs include the International Illumination Design Awards (IIDA), Roadway Lighting, and All-Industry programs. Also scheduled is the annual meeting of the membership of the Society.

The Illumination Engineering Society of North America (IESNA) is the recognized authority on lighting in North America. Its' purpose is to advance the art, science, and practice of illumination by investigation, evaluation, and dissemination of knowledge through educational, literary, and scientific means.

Future conferences are scheduled for August 2-6, 1992, San Diego California; August 8-12, 1993, Houston, Texas; August 7-11, 1994, Miami, Florida.

Information: Valerie Landers, (212) 705-7269.

GEMOLOGICAL INSTITUTE OF AMERICA (GIA)

Five of the world's leading authorities on natural and cultured pearls will convene in a featured session of the International Gemological Symposium in Los Angeles this June. The speakers include Shigeru Akamatsu of Mikimoto Research Laboratories, Japan; Alex Edwards of Adachi Pearls, California: John R. Latendresse of Americal Pearl Co., Tennessee; Shunsaku Tasaki of Tasaki-Shinju Co., Japan; and Koji Wada of the National Institute of Aqualculture, Japan. They will address new developments in the natural and cultured freshwater pearl industry, as well as the latest information on pearl identification, grading, research, and marketing. For more information contact the Gemological Institute of America, Symposium Registrar, P. O. Box 2110, Santa Monica, California 90407-2110 or call (800) 421-7250 ext. 211 or FAX (213) 828-6589.

As part of its multi-year plan for growth in laboratory services, the GIA Gem Trade Laboratory Headquarters expands. There will be a major upgrade in the Lab's computer system. In a related step, GIA is planning to centralize all resident education at its West Coast headquarters campus. Oneweek classes and seminars will continue to be offered at the New York facility.

PUBLICATION OF 3RD EDITION OF ASTM STANDARDS ON COLOR AND APPEARANCE MEASUREMENT

Barring any unforeseen difficulties, ASTM anticipates the publication of the 3rd Edition of ASTM Standards on Color and Appearance Measurement to occur sometime in July-August of this year. They are now out of print of the 2nd edition.

Information: ASTM, 1916 Race Street, Philadelphia, PA 19103-1187, (215) 299-5400

IN THIS ISSUE

The development of colorimetry over the years has gone through three phases: matching, difference, and appearance. At first, the concern was whether two stimuli matched each other. Then there were the attempts to quantify color differences. However, both of these phases were limited to two stimuli in identical conditions. Thus in order to compare stimuli in different viewing conditions, measures that represent magnitudes of perceived attributes had to be devised. In 1982 R. W. G. Hunt first published a description of his model for predicting color appearance. By 1987 that model had been extended to predict the appearance of colored materials under a wide range of conditions. However, for related colors that model did not distinguish between the effects of adaptation provided by backgrounds of different luminance factors, nor did the model account for the dependence of hue on stimulus luminance for unrelated colors. In "A Revised Colour Appearance Model for Related and Unrelated Colours". Hunt not only provided for a more realistic balance between the relative contributions of rods and cones but also included the effects described above.

In 1986 a consortium was formed under the auspices of the United Kingdom Government's Alvey program to provide a set of self-consistent experimental data for determining the impact of viewing conditions on color appearance. This set of data was to include different light sources. luminance levels, surround conditions. and dissimilar media. The emphasis was on video monitors and printing inks. In a two part series entitled "Quantifying Colour Appearance" M. Ronnier Luo, Anthony A. Clarke, Peter A. Rhodes, Andre Schappo, Stephen A. R. Scrivener, and Chris J. Tait describe the derivation of the set of experimental data and its application to evaluation of color appearance models. In Part I development of the LUTCHI Colour Appearance Data Base is described.

The work of the consortium did not end with the development of the LUTCHI data. The further aims were to test the ability of various color spaces and models to predict the results found with the LUTCHI data and finally to refine one model in order to improve the fit to the data. In "Quantifying Colour Appearance - Part II - Testing Colour Models Performance Using LUTCHI Colour Appearance Data", the same authors test CIE L*u*v*, CIE L*a*b* and CMC(1:1) color spaces and Hunt's 87 and 91 models as well as the color appearance model of Nayatani and his co-workers.

Color appearance is important to others as well. When observing things in nature, a person's experience allows him automatically to recognize an object's color to be the same although part of the object is in shade and another part is illuminated by direct light. What is understood is that if the object were moved to allow the same conditions of illumination and viewing, then the color would be consistent across the object. In order to portray realistically objects in nature, an artist must either consciously or unconsciously realize these facts and account for them in paintings. Chevreul designed a color system for artists. In his color system Chevreul wanted to represent every modification of color including both those resulting from mixtures of pigments and those found in nature such as the various gradations of light. In "The Chevreul Color System", Ethel Heila examines the concepts developed by Chevreul that could be very helpful to painter's who wish to portray objects in space and light in a naturalistic manner.

As the luminance level decreases, the brightness of colors change in a complex way. It is well known that at higher luminance levels (the photopic region) the three types of cone receptors are responsible for color vision. While at low luminance levels (the scotopic region) only the rods are active. At the mid levels where colors may still be recognized, but reading is not possible (the mesopic region), all four types of receptors are active. While there are CIE recommendations for photometry in the photopic and scotopic regions, there are none for the mesopic region. Several researchers have taken different approaches to system of mesopic

photometry. In "A System of Mesopic Photometry", Pat W. Trezona describes a 4-dimensional space which has includes following parameters: one for photopic photometry, one for scotopic photometry and two specifying the transitional region's upper and lower limit.

The 1976 CIELUV and CIELAB uniform color spaces allow the computation of the color difference between two color stimuli. At that time formulae were also recommended to express the color differences in terms of their lightness, chroma, and hue components. In the note, "New Formula for the Computation of CIE 1976 Hue-Difference" Robert Seve suggests an new formula for calculating the hue component which avoids indeterminacy and minimizes rounding errors.

In the Color Forum, David H. Alman describes the background and working program of CIE Technical Committee 1-29, Industrial Color-Difference Evaluation. As chairman of that committee, he solicits input from those people using or researching colordifference equations.

TINTILLATING

The American Optometric Society states that approximately 11% of soft contact lense wearers have tinted lenses, and that number is expected to increase to 25% by 1990. Many of the users do not need corrective lenses, but are wearing them for cosmetic purposes.

Humans are not the only beneficiaries of colored contacts. ANIMALENS of Wellesley, Massachusetts, makes a red-tinted lens for chickens. It seems that birds wearing the contacts are calmer, eat less, produce more and do not henpeck. (Imagine the potential market if it worked that way on humans!) The company is currently working on a blue lens to booster rooster fertility.

> Color News, Vol. 4, No. 3, Oct 1989

CALENDAR

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

1991

RIT COLORIMETRY SHORT COURSE, Jun.11-13

Munsell Color Science Laboratory, Rochester Institute of Technology, Rochester, New York. Information: Colleen McCabe, (716) 475-7189.

COLOUR '91, Jun. 3-7

Colour Group of Bulgaria, House of Technics, Plovdiv, Bulgaria. Information: Dr. Todor Kehlibarov, 1000 Sofia, P. O. Box 431, for Color'91, ZKK-FNTD, Bulgaria. Tel. +39 2 89-8946 or FAX +359 2 87 9360 (for "Color '91" - ZKK).

ASTM COMMITTEE D-1 ON PAINT, Jun. 16-19

Chateau Laurier, Ottawa, Canada. Information: Scott Orthey, (215) 299-5507.

INTERNATIONAL GEMOLOGICAL SYMPOSIUM, Jun. 22

Gemological Institute of America, International Gemological Symposium, Los Angeles, California. Information: Symposium

Registrar, (800) 421-7250, FAX (213) 828-6589.

AIC INTERIM SYMPOSIUM, COLOUR & LIGHT, Jun. 25-28

International Colour Conference and Exhibition, Powerhouse Museum, Sydney, Australia. Information: The Colour Society of Australia, P.O. Box 63, Concord West, N.S.W. 2138, Australia, or Dr. Allen B. J. Rodrigues, (313) 583-8245.

CIE 22ND SESSION, Jul. 2-11

International Commission On Illumination, University of Melbourne, Melbourne, Australia. Information: Dr. J. D. Schanda, Central Bureau, A-1030 Vienna, Kegelgasse 27 Austria, or Dr. Jack Hsia, (301) 975-2342.

ASTM COMMITTEE D-20 ON PLASTICS, Jul. 15-18 Colorado Springs, Colorado. Information: Katharine Schaff, (215) 299-5529.

IES ANNUAL CONFERENCE, Aug. 11-15

85th Annual Conference of the Illuminating Engineering Society of North America, Sheraton Centre Hotel, Montreal, Canada. Information: Valerie Landers, (212) 705-7269.

EUROPEAN CONFERENCE ON VISUAL PERCEP-TION, Aug. 26-30

14th European Conference on Visual Perception, Vilnius, Lithuania. Information: Dr. Tom Troscianko, Dept of Psychology, University of Bristol, 8-10 Berkeley Square, Bristol BS8 1HH, Great Britain.

IS&T SYMPOSIUM, Sep. 11-14

Society for Imaging Science and Technology 2nd Symposium on Electronic Prepress Technology and Color Proofing, immediately following PRINT '91 at the McCormick Center Hotel, Chicago, Illinois. Information: Joanne M. Weber, (716) 477-4198.

EUROPEAN CONFERENCE ON EYE MOVEMENTS, Sep. 15-18

6th European Conference on Eye Movements, Leuven, Belgium. Information: Johan Van Rensbergen, Laboratorium voor Experimentele Psychologie, Katholicke Universiteit, Leuven, Belgium.

USNC/CIE ANNUAL MEETING, Sep. 22-24

U.S. National Committee of the CIE, Marquette Hotel, Minneapolis, Minnesota. Information: Norbert Johnson, (612) 733-5939.

PRINCIPLES OF COLOR REPRODUCTION, Sep. 25-27

Rochester Institute of Technology, Munsell Color Science Laboratory, Principles of Color Reproduction: An Intensive Short Course, Chester F. Carlson Center for Imaging Science, Rochester, New York. Information: Colleen McCabe, (716) 475-7189, FAX (716) 475-5988.

IS&T, Oct. 6-11

The Society for Imaging Science & Technology (formerly SPSE) 7th International Congress on Advances in Non-Impact Printing Technologies w/Exhibit, The Portland Hilton, Portland, Oregon. Information: (703) 642-9090.

PRAKESH 1991, Oct. 7-13

Indian Society of Lighting Engineers, International Trade Fairgrounds, New Delhi, India. Information: H. S. Mamak, Indian Society of Lighting Engineers, c/o Philips India, 7th Floor, Hindustan Times, Kasturba Gandhi Marg, New Delhi, India 110 001, Tel. 3314328, 3318370, Fax. 3316839.

AATCC - CONFERENCE AND EXHIBITION, Oct. 8-11

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

Color & APPEARANCE OF THERMOPLASTIC FILMS, Oct. 16-17

Society of Plastic Engineers, Conference, Marriott Hotel, New Orleans, Louisiana. Information: (812) 466-9828, FAX (812) 466-6796.

INTER-SOCIETY COLOR COUNCIL Application for Individual Membership

Name			Date
🗆 Dr.	🗆 Mr.	🗇 Ms.	
Company/Aff	iliation		
Street			
City, State, Zi	ip		
Telephone ()	<u> </u>	
Fax ()			Dusiness
•••••	<u></u>	Signature	
		-	My work relates to the following
My chief interests in color are:		olor are:	products and services:
□ education	a	art	
🗇 industry	٥	science	
	Na	me other interests	
My presen	it and past b	usiness, professional	or educational connections with color are:
My particu	ular interests	s in color are:	·
I belong to	o the followi	ng national organiza	tions or associations:
<u></u>			
I learned a	about ISCC f	rom: 🗇 ISCC Newsle	tter 🗇 Other source:

Please tell us the individual or organization that interested you in ISCC

ISCC dues are shown on the reverse side. Applications for membership dated prior to July 1 should be accompanied by full annual dues; those dated July 1 and later should be accompanied by 50% of annual dues. You have the option of subscribing to Color Research & Application at special membership rates. If you wish to do so, please add \$60.00 (US) or \$90.00 (overseas) to the amount of your check.

This application and remittance should be sent to

Ms. Ann C. Laidlaw, Membership Committee, c/o SheLyn, Inc., 1108 Grecade Street, Greensboro, NC 27408

Telephone: (919) 274-1963

EXCERPT FROM THE BY-LAWS OF THE INTER-SOCIETY COLOR COUNCIL, INC.

Constitution, Article II — Aims and Purposes

The Council shall operate solely and exclusively as a non-profit organization with the aims and purposes:

- A. To stimulate and coordinate the work being done by the various members leading to the description and specification of color by these members.
- **B.** To promote the practical application of this work to the color problems arising in science, art, and industry, for the benefit of the public at large.
- C. To promote communications between technically oriented specialists in color and creative workers in art, design, and education, so as to facilitate more effective use of color by the public through dissemination of information about color in both scientific and artistic applications.
- **D.** To promote educational activities and the interchange of ideas on the subject of color and appearance among its members and the public generally.
- E. To cooperate with other organizations, both public and private, to accomplish these objectives for the direct and indirect enjoyment and benefit of the public at large.

Council Activities

The ISCC is the principal professional society on the field of color in the United States, encompassing the arts, sciences and industry, pursuant to the Aims and Purposes described above. Other national organizations with an interest in color are Member-Bodies of the Council and appoint delegations to participate in the Council's work. Individual members are the largest single group. The Annual Meeting, usually held in April, includes meetings of the Project Committees and sessions of four Interest Group: Measurement & Colorimetry; Vision & Color Appearance: Art, Design & Psychology; and Color Education. There is also a main program devoted to a specific aspect of color plus a Poster Paper session. Joint programs with one of the Council's Member-Bodies are interesting and educational.

In most years there is a separate topical Williamsburg Conference, often in February, where a single color subject is explored in depth with participants from all over the world providing state-of-the art information. Attendance at these conferences is usually smaller than at Annual Meetings, reflecting their topical nature and permitting interaction between speakers and participants.

The ISCC is the U.S. Member of the Association Internationale de la Coulour (AIC), which holds general meetings quadrennially and topical meetings annually. Color Research & Application, published bimonthly in English, is the principal international journal in this field; it is endorsed by ISCC. It reports recent research and opinions of colorists, review books and reports on national and international color meetings. Membership in ISCC permits subscription at more than a 50% discount.

The ISCC News, a bimonthly newsletter, reports the color activities of the Council, its members, Member-Bodies and international color organizations. Members receive the ISCC News at no cost. Member-Bodies and Sustaining Members receive 10 copies of the ISCC News.

Categories of Membership	Annual Dues
Individual Member. Any person interested in color and desirous of participating in the activities of the Council.	\$25.00
Student Member. Full time students.	\$10.00
Member-Body. Any non-profit national organization interested in color and desirous of participating in the activities of the Council.	\$100.00
Sustaining Member. Any organization not eligible as a Member-Body, or any individual, interested in color and wishing to support the work of the Council. Receives 10 copies of ISCC News.	\$250.00
Retired. Treasurer must be notified, in writing, of retirement before dues have been billed.	\$10.00
Library Subscriptions. Receives all ISCC mailings, including ISCC News.	\$40.00
Overseas Member. A surcharge of \$15 is added to \$25 dues to cover additional mailing costs.	\$40.00

Calendar, continued from page 8

TAPPI SYMPOSIUM AND TRADE FAIR, Oct. 28-31

Technical Association of the Pulp and Paper Industry, Holiday Inn, Genessee Plaza, Rochester, New York. Information: Jerry Popson, (812) 948-2884.

CMG - FALL MEETING, Nov. 3-5

Color Marketing Group Fall Meeting, Hyatt Regency, New Orleans, Louisiana. Information: Nancy Burns, (701) 528-7666.

OSA - ANNUAL MEETING, Nov. 3-8

Optical Society of America Annual Meeting including OPTICON '91, San Jose Convention Center, San Jose, California. Information: Optical Society, (202) 223-0920.

FSCT ANNUAL MEETING AND PAINT SHOW, Nov. 4-6

Federation of Societies for Coatings Technology, 69th Annual Meeting and 6th Paint Industries Show, Metro Convention Center, Toronto, Ontario, Canada. Information: (215) 545-1506.

ASTM COMMITTEE D-20 ON PLASTICS, Nov. 4-7

San Diego, California. Information: Katharine Schaff, (215) 299-5529.

AATCC FALL MEETING, Nov. 19-21

American Association of Textile Chemists and Colorists, The Doral Inn, Hew York City, New York. Information: Jerry Tew, (919) 549-8141.

1992

ASTM COMMITTEE D-1 ON PAINT, Jan. 20-23

Embassy Suites Hotel, Ft. Lauderdale South, Florida. Information: Scott Orthey, (215) 299-5507.

ASTM COMMITTEE E-12 ON APPEARANCE, Jan. 20-23 Embassy Suites Hotel, Ft. Lauderdale South, Florida.

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

ADVANCES IN COLOR VISION, Jan. 30-Feb. 1

Optical Society of America Topical Meeting on Advances in Color Vision, Irvine, California. Information: (202) 462-6272.

SPSE/SPIE SYMPOSIUM, Feb. 9-14

Electronic Imaging: Science and Technology, The San Jose Convention Center, San Jose, California. Information: (703) 642-9090.

AATCC WINTER MEETING, Feb. 11-13

American Association of Textile Chemists and Colorists, Hilton at University Place, Charlotte, North Carolina. Information: Jerry Tew, (919) 549-8141. ISCC - WILLIAMSBURG CONFERENCE, Feb. 23-26 "Comparison of Color Images Presented in Different Media" cosponsored with TAGA, Colonial Williamsburg, Virginia. Information: Milton Pearson, (716) 475-5290.

ASTM COMMITTEE D-20 ON PLASTICS, Mar. 8-12

Ashville, North Carolina. Information: Katharine Schaff, (215) 299-5529.

IS&T ANNUAL CONFERENCE, May 10-15

The Society for Imaging Science & Technology 45th Annual Conference, The Meadowlands Sheraton, East Rutherford, New Jersey. Information: (703) 642-9090.

AATCC SPRING MEETING, May 12-14

American Association of Textile Chemists and Colorists, AATCC Technical Center, Research Triangle Park, North Carolina. Information: Jerry Tew, (919) 549-8141.

CORM ANNUAL MEETING, May 19-20

NIST, Gaithersburg, Maryland. Information: Albert Parr, (301)-975-3739.

ASTM COMMITTEE D-1 ON PAINT, Jun. 19-22

Marriott, Minneapolis, Minnesota. Information: Scott Orthey, (215) 299-5507.

INTERNATIONAL GEMOLOGICAL SYMPOSIUM, Jun. 20-24

Century Plaza Hotel, Los Angeles, California. Information: (800) 421-7250, ext. 211.

ISCC - ANNUAL MEETING, Jun. 21-24

Nassau Hotel, Princeton, New Jersey. Information: Dr. Allan B. J. Rodrigues, (313) 583-8245.

AIC INTERIM SYMPOSIUM, Jun. 23-24

Computer Colorant Formulation, Nassau Hotel, Princeton, New Jersey. Information: Dr. Allan B. J. Rodrigues, (313) 583-8245.

ASTM COMMITTEE E-12 ON APPEARANCE,

Jun. 24-26

Nassau Hotel, Princeton, New Jersey. Information: Bode Buckley (215) 299-5599.

IES ANNUAL CONFERENCE, Aug. 2-6

Illuminating Engineering Society of North America, 86th Annual Conference, San Diego, California. Information: Valerie Landers, (212) 705-7269.

AATCC - CONFERENCE AND EXHIBITION, Oct. 4-7

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

NEWSLETTER EDITOR

Michael A. Hammel

Send material for publication (photos should be black and white if possible) to the editor at:

98 Grand View Drive • Fairport, NY 14450 Tel. (716) 223-1823

Please send all materials on diskette (5.25", 1.2 Meg, or 360K; or 3.5" 730K or 1.44 Meg) formatted MSDOS - ASCII format, Q&A format, WS format or WP format. For hard copy transmission, FAX to (716) 425-2411.

Or send to Dr. Ellen Carter:

2509 N. Utah St. • Arlington, VA 22207

☆☆☆ Please note: new deadline≎ material is

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 $\Rightarrow \Rightarrow \Rightarrow$ Please note: the deadline for submission of material is the 1st of <u>even</u> numbered months. $\Rightarrow \Rightarrow \Rightarrow$

OFFICERS 1990-1992

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President-Elect	Miss Paula Alessi	Eastman Kodak Company, Rochester, NY 14650	(716) 477-7673	(716) 477-0127
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Past-President	Mrs. Joy T. Luke	Studio 231, Box 18, Route 1, Sperryville, VA 22740	(703) 987-8386	(, , , , , , , , , , , , , , , , , , ,
		LIST OF DIRECTORS		
1988-1991				
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Mr. James A. Cave	BASF Corp., 26701 Telegraph Rd., Southfield, MI 48034	(313) 827-4670	(313) 827-2727
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Mr. Richard W. Harold	Hunterlab, 11491 Sunset Hills Rd., Reston, VA 22090	(703) 471-6870	(703) 471-4237
Prof. Evelyn Stephens	Fashion Institute of Technology, 227 W. 27th St., New York, NY 10001	(212) 760-7871	
1990-1993			
Ms. Ann Laidlaw	Shelyn, Inc., 1108 Grecade St., Greensboro, NC 27408	(919) 274-1963	(919) 274-1971
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Dr. Romesh Kumar	American Hoechst Corporation, 129 Quidnick St., Coventry, RI 02816	(401) 823-2161	(401) 823-2700

ISCC MEMBER-BODIES

American Association of Textile Chemists and Colorists (AATCC)GraphAmerican Chemical Society (ACS)The HAmerican College of Prosthodontists (ACP)IllumiAmerican Psychological Association (APA)NationAmerican Society for Testing and Materials (ASTM)NationAmerican Society of Interior Designers (ASID)NationAmerican Society for Photogrammetry and Remote Sensing (ASPRS)OpticaColor Association of the United States, Inc. (CAUS)SocietColor Marketing Group (CMG)SocietDetroit Colour Council (DCC)SocietDry Color Manufacturers Association (DCMA)TechnFederation of Societies for Coatings Technology (FSCT)TechnGemological Institute of America (GIA)Techn

Graphic Arts Technical Foundation (GATF) The Human Factors Society Illuminating Engineering Society (IES) National Artists Equity Association (NAEA) National Association of Printing Ink Manufacturers (NAPIM) National Paint and Coatings Association, Inc. (NPCA) Optical Society of America (OSA) Society for Information Display (SID) Society of Motion Picture and Television Engineers (SMPTE) Society for Imaging Science and Technology (IS&T) Technical Association of the Graphic Arts (TAGA) Technical Association of the Pulp and Paper Industry (TAPPI)

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