

Inter-Society Color Council *News*

NOMINEES FOR ELECTION OF OFFICERS AND DIRECTORS

At the Board of Directors meeting on October 16-17, 1981, the report of the Nominating Committee (Franc Grum, Chairman) was received and approved. Mr. Grum's report noted, first, that all Member-Body representatives had been contacted to solicit potential nominees and, second, that based on the 1980 survey of voting members regarding multiple candidates and the advice of the Board of Directors, his committee recommended single candidates for the positions of Officers and multiple candidates for the positions of Directors. The following slate of nominees was presented and approved.

Officers

President: Louis A. Graham, AATCC, IMG
President-Elect: Joyce S. Davenport, FSCT, IMG
Secretary: Therese R. Commerford, AATCC, IMG
Treasurer: Edward T. Connor, IMG, MCCA

Directors (three to be elected)

Fred W. Billmeyer, Jr., ACHS, AIC, APS, IMG, SPE
Anna Campbell Bliss, ASID, IMG
Richard D. Ingalls, IMG
Rolf G. Kuehni, AATCC, IMG
William H. Venable, Jr., IMG
Daan M. Zwick, SMPTE

Voting members have been asked to consider additional nominations according to the requirements of Article III, Section 3 of the By-Laws. The election will take place in January, and the results will be reported to the membership in the January-February Newsletter.

CHANGE OF EDITOR

This is the last issue to be edited by your current editor. Your new editor will be Mary Ellen Zuyus.

Ms. Zuyus is a librarian by training. She received her Master of Library Science degree from the University of Maryland, and she has worked at the Library of Congress. She now works at Hunter Lab as a member of the Advanced Development Department. Ms. Zuyus is involved in Hunter Lab's education program and in the development of applications information and technology.

I wish to encourage and, even, exhort you to cooperate with Ms. Zuyus to the best of your ability.

Editor

NEWS OF MEMBERS

Joy Turner Luke Awarded Henry A. Gardner Award by ASTM

Joy Turner Luke, professional painter and owner of Studio 231, Sperryville, Virginia, was named the 1981 recipient of

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the Henry A. Gardner Award by ASTM.

Luke received the award at the 22 June 1981 meeting of ASTM Committee D-1 on Paint and Related Coatings in Providence, Rhode Island. She was cited for her outstanding contributions in the organization and management of Subcommittee D01.57 on Artist Paints and Related Materials.

The Henry A. Gardner Award was established in 1977 by ASTM, world leaders in the management and development of voluntary consensus standards for materials, products, systems, and services. The award is presented to a member of Committee D-1 who has demonstrated sustained outstanding competence in managing a unit of the committee so that its productivity is high.

As chairman of Subcommittee D01.57, Luke is involved with the development of test methods, specifications, and labeling requirements for artists' paint.

Luke professionally has specialized in teaching and lecturing on color since 1965. Some of the universities included in Luke's lecture circuit are Rensselaer Polytechnic Institute, Dunbarton College, Montgomery College, Northern Virginia Community College, and Georgetown University. She also has lectured at the Northern Virginia Fine Arts Association, the Springfield Art Guild, the Vienna Society of Artists, the Embroiderer's Guild, and the Illuminating Engineering Society.

In addition to her membership in ASTM, Luke is a member of the Artists Equity Association, the Inter-Society Color Council, the College Art Association, the Washington Conservation Guild, the Optical Society of America, and the Editorial Board of the journal *Color Research and Application*.

A native of Brooklyn, New York, Luke studied art at Rollins College, Southern Methodist University, American University, Rensselaer Color Measurement Laboratory, and Hunter Lab.



Joy Turner Receives Gardner Award

Beatrice West Receives Dimmick Award from CMG

The Color Marketing Group presented the Dimmick Award, the highest award to be given in color, to Beatrice West, October 11, 1981, Denver, Colorado.

This is the first time in eleven years this coveted award was given to an individual whose significant talent and accomplishments exemplify the major ingredients of "color marketing."

Beatrice West, the entrepreneur, color consultant, color stylist and architectural designer has been a true pioneer, a lady of firsts in the field of color marketing. Bea West brought color into the business of home building. Active in the field for more than thirty years, Miss West's creative concepts and color styling techniques continue to be used by major corporations.

Working in the look alike world of post World War II, she used color as an aesthetic feature, but manipulated it ever so skillfully to style homes for maximum saleability. In 1948 and '49, when Levitt & Sons were building the gigantic tract city of Levittown, Bea West provided the color formula which gave the needed distinction to 22,000 homes in the Long Island community. Levitt's design plan provided for only nine different elevations; West's combination of colors for roof, siding and paint meant replication only after 144 houses. Her tremendous success in this project led to her being called upon to color style over two million homes in the following decades.

In 1965, Bea West developed "Creative Interiors of America," a completely coordinated color marketing aid comprised of typical floor plans and colored renderings of contemporary and traditional furnishings. These included swatches of upholstery, drapery and bedspread fabrics plus carpet samples. The National Association of Home Builders awarded her a citation for this concept. For J.C. Penney she created the first marketing Color Palette for their home furnishing and sportswear buyers. Miss West has color styled building materials, paint, carpet — everything from zippers to yachts! Her keen interest in the marketing aspects of color led her to early involvement in Color Marketing Group, indeed she was a charter member and served as its president in 1969. Bea West is president of Beatrice West Studios Inc. in Boca Raton, Florida.

Beatrice West has been a member of the ISCC for many years and was for many years chairman of the AIID Member-Body delegation. CMG resulted from the work of Subcommittee 23, Expression of Historical Color Usage, active from 1960 to 1964. — Ed.

NEWS OF MEMBER-BODIES

American Society of Interior Designers (ASID)

Opening the awards ceremonies at the Industry Foundation Brunch on Saturday, July 25, President Jack Lowery, FASID, presented seven certificates of presidential citation and one certificate of commendation (on behalf of the ASID board of directors) for exceptional work.

Anna Campbell Bliss, ASID, (Salt Lake City, UT), a student of color and ASID liaison to the Inter-Society Color Council, was cited by President Lowery for her work with the scientific community on color and light.

Reprinted from *ASID Report*, Vol. VII, No. 4, September 1981.

House & Garden Color Program

House & Garden Fifth Annual Color & Design Seminar

The Color & Design Seminar took place on September 15th, 16th, and 17th at the redesigned Color & Design Center, at the magazine's Madison Avenue headquarters. The Seminar, an overview of European and American home furnishings and decorative trends, was presented exclusively to industry Members of the 1981 House & Garden Color Program.

At its Fifth Annual Color & Design Seminar, House & Garden announced that as of January 1, 1982, the 36-year old Color Program will be officially renamed "The House & Garden Color & Design Services" and will be open to all industry professionals, free of charge.

Louis Oliver Gropp, Editor-in-Chief of House & Garden, talked about the Magazine's move into a "more affluent neighborhood, attracting a more sophisticated market with a younger point of view." He stated that House & Garden's new editorial direction will present a "Chronicle of the times" and that these changes will attract new readers and advertisers. Mr. Gropp emphasized that the new House & Garden readers are an "educated, travelled group who visit museums, art galleries and showcase homes," and that also they are "... more interested in how a New York art gallery owner lives today, or a Los Angeles fashion designer, than ever before."

Nadine Bertin, Director of Creative and Color/Design Services, provided industry representatives with a historical perspective of northern European modern and classical architecture and color through a special slide presentation of Helsinki, Finland, and Leningrad & Novgorod, USSR. She illustrated, through slides of her recent travels, European influences on Western tastes and the universality of color as applied to ancient and modern design. She also discussed the Biennial International Design Congress, ICSID, "Design '81," which took place in Helsinki in August and to which she had been invited to make the presentation on: "Design & Color in the United States Today."

Joyce MacRae, Fabrics and Color News Editor, reported on her recent trip to the Paritex Show in Paris, and color news from Rome and London. She talked about the "new rainbow of pastels, from dusty fresco colors to off-beat macquillage shades to confectioners colors," which have registered impact throughout Europe, particularly in Paris and London. Miss MacRae also presented the American market illustrating current and projected trends with fabric displays in the Color & Design Center.

The House & Garden Color & Design Center is a unique center of information, meeting place for everyone professionally involved with color and design. Home industry professionals are welcome to visit it, to see current displays of textiles and home products, or for individual consultation, by appointment.

Nadine Bertin

Spectrum

Spectrum is the color and design newsletter of the House & Garden Color Program. A few excerpts from this publication will give you an idea of the type of information it contains.

UPHOLSTERY

Most important trend: Pastels, in the most appealing colors.

- **Softest Tints** — Bluish pink, pale rose-petal, lilac, peach, ice blue, pale spearmint, melon, orchid.

- **Misty Tones** — Mauve, ashes of roses, shrimp, powdery blues, seafoam and celadon green.

Creamy and Mellow off-beat shades of Pastels — sometimes combined with stronger colors of the same hues: black cherry, grape, raisin, teal blue, slate blue, magenta, jade green, raspberry, sienna.

Often a surprise of steel grey, charcoal or a bewitching black used with pastels.

Use of shiny detail of brass, chrome, nickle, adding sparkle to the muted palette. Example: Soft mauve on a gleaming chrome base.

- **A Few Strong Primaries** — Clear crayon-red and purple, red in lacquer finishes.

- **Ever-present Naturals** — Look fresher with pastels as softening element.

- **Tinted Neutrals** — Warm taupes, cocoa, silvery greys, pale banana, buttercream . . . variation and sophistication. Pale grey with cream: Winning combination.

Ivory, alabaster, vanilla, creamy whites of all kinds. *Newest neutrals*: Light khaki and pale sage.

EUROPEAN TEXTILE MARKETS (ROME, PARIS, AND LONDON)

- **Metallics**, especially gold, echo current trends in fashion; add Renaissance richness, Arabian Nights' romance to fabrics of all kinds. Seen as a creative attempt to enhance modern materials in rich, yet subtle ways, this "gold fever" is the European answer to inflation and economic malaise; it promises renewed elegance and "something of substance" for the '80s house.

- **Pastels** are everywhere in every degree. Their impact goes on and on as virtually every major European market emulates nature's spring-time palette, and the confectioner's array of bonbon delights.

- **Subtle Surfaces** — many surface designs seek timelessness and subtlety with "non-pattern" designs such as stipple, "faux marbre" and stone of all kinds, airy clouds of air-brushed color.

Industrial Designers Society of America (IDSA)

Chapter Happenings

The September meeting of the **Southern New England Chapter** featured Faber Birren, one of the nation's leading experts on color for industrial use, and Raymond Spilman, FIDSA, industrial designer, lecturer and author, addressing the topic: "Human Response to Color and Light; Color Trends In Industrial Design." Spilman has held the directorship of the Inter-Society Color Council twice and has published articles on design and color in *Color Engineering*, *Fortune*, and *Business Week*, to name but a few. His cohost Faber Birren has written 27 books on color and has edited or introduced another 11 books. He has focused his career on technical and industrial fields, describing and categorizing the range of human responses to color or to the lack of it.

A Call for Briefs on Color Education

Raymond Spilman, FIDSA, is seeking briefs from educators among the IDSA membership and IDSA's delegates to the Inter-Society Color Council describing how they teach the use of color. In addition, he is seeking an overview of color courses and opinions on the value of color education for industrial design students and practicing professionals.

The purpose of Spilman's request is to establish a source of overview knowledge about color education in industrial design schools as part of IDSA's effort to share information with other members of the Inter-Society Color Council.

For those new to IDSA, the Inter-Society Color Council is made up of individual members and professional societies of all types having an interest in some phase of color science and application.

"Of all American professional societies, this council [ISCC] is the only one that in itself is made up of other professional groups. Thus our IDSA exposure in and to this group is important to each of us interested in color and to IDSA as a major American professional society," commented Spilman in his request for briefs.

Plastic Products Design Seminars

As part of a new, expanded professional development program for its members, IDSA will hold four technical seminars in 1982, the soonest of which will be "Designing Products in Plastic for Mass Production," scheduled for January 23 and 24 at the Colony Square Hotel in Atlanta. This seminar will be held again on May 8 and 9 at the Holiday Inn at Fisherman's Wharf in San Francisco.

The plastics seminars will feature plastics expert Mort Blumenfeld, FIDSA, a practicing industrial designer, teacher, writer, lecturer, and consultant on material problems. A contributing editor on materials for *ID Magazine*, Blumenfeld has been on the faculties of the Pratt Institute and the Rhode Island School of design since 1970. He has served companies in automotive, home appliance, consumer electronics, business equipment, aerospace and other end-use markets, equipping him with a unique body of knowledge and experience.

Registration and further information on the seminars is available now through IDSA's headquarters at 6802 Poplar Place, Suite 303, McLean, VA 22101, (703) 556-0919.

Reprinted from *IDSA Today*, August 1981.

Optical Society of America

1981

December 9-11 — OPTICAL FABRICATION AND TESTING WORKSHOP, Quality Inn Hotel, Anaheim, CA.

1982

January 6-8 — SIXTH TOPICAL MEETING ON INTEGRATED AND GUIDED-WAVE OPTICS, Asilomar Conference Center, Pacific Grove, CA. ABSTRACT DEADLINE: September 15, 1981.

March 8-10 — TOPICAL MEETING ON LASER TECHNIQUES FOR EXTREME ULTRAVIOLET SPECTROSCOPY, The Broker Inn, Boulder, CO. ABSTRACT DEADLINE: November 30, 1981.

March 23-25 – FIRST INTERNATIONAL CONFERENCE ON HALIDE GLASSES: MATERIALS AND APPLICATION, Wolfson Hall at Churchill College, University of Cambridge, England. (For information contact: Dr. Martin G. Drexhage, Solid State Sciences Division, RADC/ESM Stop #64, Hanscom AFB, MA 01730.)

April 13-15 – TOPICAL MEETING ON OPTICAL FIBER COMMUNICATION (OFC '82), Phoenix Civic Plaza Conference Center, Phoenix, AZ. ABSTRACT DEADLINE: November 16, 1981.

April 14-16 – CONFERENCE ON LASERS AND ELECTRO-OPTICS (CLEO '82), Phoenix Civic Plaza Convention Center, Phoenix, AZ. ABSTRACT DEADLINE: November 16, 1981; Europe and Japan: November 2, 1981.

May 17-21 – 1982 SPRING CONFERENCE ON APPLIED OPTICS, Genesee Plaza Holiday Inn Hotel, Rochester, NY. ABSTRACT DEADLINE: January 29, 1982.

June 16-18 – THIRD TOPICAL MEETING ON PICO-SECOND PHENOMENA, Garmish-Partenkirchen, Bavaria, Federal Republic of Germany. ABSTRACT DEADLINE: February 1.

June 21-25 – 11th INTERNATIONAL LASER RADAR CONFERENCE, University of Wisconsin, Madison, WI. (For information contact: Dr. James Weinman, Department of Atmospheric Science, University of Wisconsin, Madison, WI.)

June 22-25 – XII INTERNATIONAL QUANTUM ELECTRONICS CONFERENCE, Munich, Federal Republic of Germany. ABSTRACT DEADLINE: December 31, 1981.

1982

September 21-24 – VIII EUROPEAN CONFERENCE ON OPTICAL COMMUNICATION, Cannes, France. (For information, contact: Secretariat General ECOC 1982, 11 rue de Hameline, 75783 Paris Cedex 16, FRANCE.)

October 18-22 – OPTICAL SOCIETY OF AMERICA ANNUAL MEETING, Tucson Community Center and Tucson Marriott, Tucson, AZ.

1983

February 28 - March 2 – TOPICAL MEETING ON OPTICAL FIBER COMMUNICATION (OFC '83), Hyatt Regency New Orleans, New Orleans, LA.

May 17-19 – CONFERENCE ON LASERS AND ELECTRO-OPTICS (CLEO '83), Baltimore Convention Center, Baltimore, MD.

October 17-21 – OPTICAL SOCIETY OF AMERICAN ANNUAL MEETING, Hyatt Regency New Orleans Hotel, New Orleans, LA.

1984

January 23-25 – TOPICAL MEETING ON OPTICAL FIBER COMMUNICATION (OFC '84), Hyatt Regency New Orleans, LA.

April 10-12 – CONFERENCE ON LASERS AND ELECTRO-OPTICS, (CLEO '84), Anaheim Convention Center, Anaheim, CA.

Canadian Society for Color

Tenth Annual Meeting

Date: May 19-20, 1982.

Place: Carleton University, Ottawa.

Invited Papers – John McCann, Polaroid Corp. Great Painting Close-Up: The Photography of a Masterpiece.

Faber Birren, Color Consultant. The Human Response to Color: A Historical Perspective.

Dorothea Jameson, University of Pennsylvania. Color Vision, Perception and Visual Intelligence in Art.

Contributed Papers & Poster Sessions – Submissions for contributed papers to be presented as 10 minute talks or as extended presentation posters should be sent to: Dr. P.K. Kaiser, Department of Psychology, York University, 4700 Keele St., Downsview Ontario M3J 1P3.

Deadlines for contributed papers and posters is January 15, 1982. Those people whose papers have been accepted for presentation at the 10th Annual Meeting will be notified by February 1, 1982.

Information about registration and accommodation arrangements can be obtained from: Dr. Alan Robertson, Optics Section, Division of Physics, National Research Council, Montreal Rd., Ottawa, Ontario, Canada K1A 0R6, 613-993-2504.

The Effects of Color in the Office

The panelists were Joyce O'Keefe of Design Planning Associates, Marie Nicole Tempestra of Colour Marketing Consultants, and Roger Foord of Simpsons Contract Division. Henry Evering of Eidetic General Systems was the co-ordinator.

The presentations were about Colours as a Design Factor and the personal experiences of people in dealing with this.

There was a common consensus among the panelists and the participants that interior colours, light and/or designs do affect people.

Some of the positive and negative personal case histories quoted were:

– office staff were happier (far less personnel turnover) when there was frequent design refinement and participatory programs,

– and that illness, eye strain, eyeball pressure and back-aches were noted as a result of certain figure-background colour combinations.

Each panelist shared with the group her/his unique ways of searching into and/or bridging some of the missing links in colour knowledge. Joyce pointed to the difference between the Theoretical Mood Colour choices possible while in training and the Muted Colour choices possible when designing an office for a (conservative) business client. However, her reward came when one of her clients notified her of the cost/benefits gained from a lower staff turnover after the installation of a more natural colour/texture oriented design in the otherwise very functional, fully computerized office.

Marie Nicole studied and uses the Luescher Colour Test as a solution for colours. A very entrepreneurial new company had previously used her colour proposals to decorate the original offices to the satisfaction of all concerned.

On a return test after three years Marie found the company more balanced, organized and less stressed. To reflect the current goals and new corporate image she again applied the Luescher Test to update their surroundings.

Roger pointed to the studies of brain research as an explanation of how colours affect the human visceral system. As an example, he spoke of the fast food outlets, their use of colour

and light, and how people react to this. He feels that the Interior Designer can lessen the impact of his projected personal colour feelings by increased participation on the part of the design user(s) whose life might be affected over a period of time.

Reprinted from the newsletter of the Canadian Society for Color, Vol. 8, No. 4, October 1981.

MEETINGS

Color '82

The Scientific and Technical Unions in Bulgaria and The Color Group Bulgaria will organise a conference on the topic:

Problems in Color Qualification of Textile and Leather Products and Materials.

The conference will be held on 21 and 22 of May in the town of Sliven, Bulgaria.

The following questions will be included in the topic:

Areas of application and possibilities of color measurement of textile and leather materials;

Visual and objective methods for color evaluation in the textile and leather industries;

Colorimetry as a means of effective usage of dye processes for textile and leather materials;

The state of the art of colorimetry and the trends in its development in the textile and leather industries.

Round table discussion will be held during the conference on the topic:

The Present Possibilities of the Colorimetry for Color Evaluation in Textile Practice.

Dateline for papers: 30th of November 1981.

The following address can be used for receiving the first application form:

Scientific and Technical Unions in Bulgaria, Central Quality Bureau for the conference: COLOR '82, 1000 Sofia, 108, Rakovski Street, BULGARIA.

Welcome to – Color '82 in Sliven Bulgaria!

T. Kehlibarov

Secretary of The Color Group Bulgaria

Non-Heatset Web Unit Annual Meeting December 7-9, 1981, Hyatt Regency, Kansas City, Kansas City, Missouri

The Fourth Annual Meeting of the Printing Industries of America Non-Heatset Web Unit begins at 12:00 noon on Monday, December 7, with a luncheon address on motivation by Dr. Gunther Klaus. For all those who arrive in town early, Hal Townsend, the president of NHWU, is hosting a President's Welcoming Reception on the evening of December 6 so that everyone can get acquainted with new faces and see old friends before getting down to business the following day. Concurrent sessions include "Color Printing in the Non-Heatset Market – Phase II."

For more information, call Margaret Hogue, 703-841-8144.

THE QUALITY CONTROL SCANNER

Graphic Arts Publishing has begun publishing *The Quality Control Scanner*, a monthly digest dealing with quality control in the graphic arts and the use of color scanners. Edited

by Miles Southworth and Donna Southworth, this four page newsletter distills up-to-date information from a wide range of publications, periodicals, seminars, conference proceedings and more. This regular publication provides clear and convenient access to the latest information about upcoming events and new products. All references are cited so that the readers can locate more information as needed.

Unlike other newsletters, *The Quality Control Scanner* is not a generalized overview for management, but a practical and pointed reference for employees who need to know specific answers to specific questions. It is designed to be filed in a binder for easy access where it is needed.

The Quality Control Scanner will deal with using your scanners to their full potential. This includes background on basic concepts of color reproduction and on the proper adjustment of scanner controls – knowledge that will enable the operator to produce first-rate separations the first time. An ambitious list of upcoming topics includes investigations of every aspect of quality control in the graphic arts, waste control, press controls, reader questions and answers, tips from scanner operators, select bibliographics, calendar of events and many other current events.

This newsletter will draw upon Miles Southworth's extensive experience as a consultant to the graphic arts. Miles Southworth is a professor in the School of Printing at Rochester Institute of Technology and author of *Color Separation Techniques* and *Pocket Guide to Color Reproduction* which are also published by Graphic Arts Publishing.

Subscriptions to *The Quality Control Scanner* are available in the United States for \$100 per year, or \$60 per year for non-profit organizations; overseas air mail postage requires an extra \$15. A binder will be sent to each subscriber. Rates for multiple subscriptions and volume reprints are available on request. Write to The Graphic Arts Publishing Company, 3100 Bronson Hill Road, Livonia, NY, 14487; or call (716) 346-2776.

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Quality is Free
Why QC & Scanning in one Newsletter
A Scanner Chart
Scanner Manufacturers
Lasers in Graphic Arts
RIT New Color Test Target
SWOP Publication

November Features

Densitometry Basics
Densitometry Review and Source Chart
Densitometer Manufacturer List
Useful Equations for Densitometry
Pitfalls of Densitometry

Preview of Topics

Future Quality Control Scanner Issues will include these and other topics.

Quality Circles
Quality Control for presswork
Quality Control for pre-press
Quality Assurance Programs
Control Strips and Test Targets

Standards and References
War on Waste
Control Monitoring and Equipment
Testing Equipment and Sources
Graphic Arts Association Procedures
How your Scanner Works
Scanner Quality Control
Adjusting Gradation for the Printing Press
Adjusting Gray Balance for the Printing Process
Reader Surveys
Reader's Questions and Answers
Tips from Scanner Operators
How's Your Productivity?
What's New in Scanning
Bibliographies by Subject
Calendar of events

Report of the 161st Meeting of the Color Group Held on Wednesday, 13 May 1981 at the Royal Institution, Albemarle Street, London

This meeting followed the Annual General Meeting of the Colour Group and took the form of the retiring Chairman's Address. John Hutchings chose as his subject 'The Evolution of Biological Colour.' In a well illustrated presentation he gave us no definitive answers but showed us that perhaps there was reason behind many of the things that we take for granted.

Mr. Hutchings covered topics such as the colour of bacteria, photosynthesis (why are leaves green?), mechanisms of coloration and their use in the animal kingdom, human colour and the human use of colour (stopping short of man the technologist).

On the assumption that all organisms live in harmony with their surroundings, there are three driving forces for colour in nature; where survival is based on the absorption of energy (as in the primary producers like bacteria and plants), where survival is based on the reflectance of light and colour vision (as in flowering plants and animals) and by chance.

Those organisms which need to absorb radiation energy develop pigments to optimise the absorption at wavelengths dictated by the action spectrum. Red seaweed, which lives at depths of a few metres where red and blue wavelengths are severely curtailed by organic absorption in the sea water, has developed an antenna pigment which has an absorption peak at about 550nm, the wavelength of peak transmission by sea water.

Leaves try to absorb as little infra red radiation as possible by maximising reflectance and transmission. The green of leaves represents 'unwanted' energy. They have developed pigments which specifically absorb the red and blue wavelengths because the action spectra for photosynthesis, phototropism, photoperiodism and stomata functioning are around 450 and 680nm. The theory was put forward in the address that it is not just by accident that these two wavelengths happen to be those of skylight and leaf transmission maxima respectively.

A major colour explosion on earth came with the co-evolution of flowering plants and winged flight and a great deal of specialisation occurred in flowers to attract specific pollinators. Compatibility of the visual characteristics of the pollinator and the flower reflectance has led to such specialisations as bees tending to pollinate yellow, blue and ultra violet reflecting flowers and humming birds tending to pollinate red flowers. Many flowers produce 'nectar guides' to help would be pollinators, petal shape or reflectance variation being common.

The third driving force includes optimised biochemicals which are themselves coloured. Early on nature found porphyrin, a basic organic structure, and has varied it from time to time but has normally used it for respiration. These pigments vary from the red of vertebrate hemoglobin, through the green of chlorophyll to blue of mollusc hemocyanin.

There are only two main principles of animal coloration; to be seen, or not to be seen. However, the effect which one animal has upon another must be thought of in terms of the three 'dimensions' colour, pattern, and behavioural display. Animals which do not want to be seen have blending patterns which are detailed and delicate. Those which stay out in the open usually attract attention with conspicuous colours and simple patterns, they include animals which have no natural enemies or which are poisonous to predators. Smooth movement and group behaviour often accompanies non-conspicuous species; jerky movement and territorial behaviour sometimes occurs with the advertising animals.

The colour of homo sapiens was discussed in terms of adaptation to the physical, climatological environment, and to the reproductive sexual environment. The use of colour in the diagnosis of illness depends upon three "biological primaries:" blue (cyanosis), red, and yellow; together with a "lightness dimension" (pallor).

The study of anthropology has revealed that man has long regarded colour, pattern and behavioural display as a very important part of life. Painting, tattooing, scarifying and cicatrizing are used for physical protection and, sometimes with the dance because of a belief, for celebration, to increase acceptability (the foundation of the western world's cosmetic industry) or merely because it is an enjoyable pastime. A universally used basic colour triad of black, red and white has been identified with other colours being used as available. The anthropologist has obvious difficulties in discussions of the evolution of body decoration. However, perhaps they can be divided into two groups; firstly where the basis is fear – superstition, medical or religious ritual, secondly where the basis is enjoyment – cosmetic, for celebration.

This was a brave attempt at a wide reaching subject. Mr. Hutchings is to be congratulated on stepping out of his own subject of food science and taking a look at the wider world. His presentation provoked much discussion which did not finish at the end of the meeting but carried on informally afterwards.

Reprinted from the newsletter of The Colour Group (Great Britain).

GRAPHIC ARTS ODDITIES



MASS PRODUCTION was used by Cicero's publisher, Atticus. He had 100 scribes in Rome, including many well-educated Greeks.



The longest papyrus in the world records the exploits of Rameses III. It is written in the hieratic script developed by scribes from earliest hieroglyphic writing.



The problem of suitable printing ink in Gutenberg's time was solved by the addition of boiled linseed oil to the pigment. It was discovered by German and Dutch painters, and is still used.



Medieval monks copied the classical authors for the study of correct Greek and Latin. But since the books were by pagan writers, the monks were not required to read them more than once.

