D. B. Judd

INTER-SOCIETY COLOR COUNCIL

NEWS LETTER NO 113

JULY, 1954

News Letter Committee:

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NEW MEMBERS The Board of Directors of the Inter-Society Color Council met June 24-25, 1954 at the Hotel Statler, Washington, D. C. The following applications for individual membership were accepted:

Mr. William H. Aiken Gardner Board and Carton Company Middletown, Ohio	Particular interest: Instruments for measurement and control of color of printed cartons.
Mr. Edward J. P. Cunningham Packard Motor Car Company 1580 E. Grand Blvd. Box 117 Detroit 32, Michigan	Color, as related to the automobile; general national color trends, textile colors, new data on color standards, etc.
Dr. Robert P. Fischelis Secretary American Pharmaceutical Association 2215 Constitution Avenue, N. W. Washington 7, D. C.	Color problems that are related to drugs and medicine.
Mr. William N. Hale, Jr. Munsell Color Company 10 E. Franklin Street Baltimore 2, Maryland	The use of color standards in quality control.
Mr. H. John Jarrold 415 Unthank Road Norwich, Norfolk, England	Color reproduction, color printing, color standards.
Mr. Richard Kelly 148½ East 40th Street New York 16, New York	Empirical effect of color on human behavior for better planning in architectural design and execution.

Mr. Joseph Lewis Richard Landry, Jr.
Philadelphia Textile Institute
Schoolhouse Lane and Henry Avenue
Philadelphia 44, Pennsylvania

Color Problems in the dyeing industry.

Mr. Robert B. Rockwood
40 Rector Street
New York 6, New York

Colors which are most popular and why, and how they are used in particular applications.

Mr. Thorne Shipley
American Optical Company
Research Center
Southbridge, Massachusetts

Human color vision and color vision testing.

OCTOBER MEETINGS IN LOS ANGELES

Two of our Member-bodies meet in October in the Los Angeles area: the Optical Society of America will hold its first West Coast meeting October 14-16 at the Hotel Ambassador; the following week the Society of Motion Picture and Television Engineers will meet in Los Angeles. A number of our ISCC members from the East will attend these meetings, among them our president, Dorothy Nickerson, and our secretary, Ralph Evans. And of course Dr. Deane B. Judd, 1954-55 president of the Optical Society of America.

It was suggested at the June meeting of the ISCC Board of Directors that it might be a good idea to explore the possibility of having an informal reception or meeting in the Los Angeles area to meet the ISCC officers and other members travelling to these meetings in October. If ISCC members who plan on attending these Los Angeles meetings will let the secretary know, it will be possible to keep both them and the Los Angeles membership informed, provided it is found feasible to work out such a meeting as is suggested above. Any ideas regarding the form or desirability of such a meeting will be welcome.

THE COLORISTS OF WASHINGTON AND BALTIMORE

This earliest ISCC affiliated group of "colorists" met for a dinner meeting at the Y.W.C.A., 17th & K Street, N. W., Washington, on May 17. The speaker of the evening was Rutherford J. Gettens, noted authority on ancient pigments and painting techniques. His subject was "The Story of Early Blue Pigments." Mr. Gettens is a chemist engaged in research on art and archeological subjects. He was formerly associated with the Fogg Art Museum of Harvard University and is now an Associate in Technical Research at the Freer Gallery of Art in Washington.

CALIFORNIA COLOR SOCIETY

We had a very brief item about this group in our May issue and mentioned that a letter had been received from Secretary Louisa E. King. We now have in all two secretarial letters, two more personal letters, and a card from the Kings (Al' and Louisa) and an article about "The Kings of Porcelain." The article will be reviewed later in this issue. Here we will first report the 1954 officers of the group. They are: Chairman, Morris Marsh, Sales Manager for Koltun Bros., Lithographers; Vice Chairman, Norman C. Bilderback, Exhibit Supervisor, Museum of Science and Industry of California; Secretary, Louisa King, 5027 Long Beach Ave., Los Angeles 58, re-elected; Treasurer, Nancy Patterson, reelected.

We add a few words to our report on Mr. King's talk of April 28, "Contemporary Porcelain." It conceived the use of color as a temperature gauge and as an indication of atmospheric conditions during the firing such as the volatilization of sodium or copper. He described the gamut of colors obtainable from one simple oxide used as a colorant in a glaze - i.e. iron, from green, yellow, orange and red to blue and black; and copper, from blue and green to their complementaries, red and purple, depending on an oxidizing or reducing atmosphere in the kiln. Other methods of obtaining desired colors were also explained.

A meeting scheduled for May 19, to be addressed by Frank Holmes on the subject color film duplicating, was postponed. On June 2, ISCC Secretary, Ralph M. Evans presented his lecture, "The Expressiveness of Color", at the Art Center School Auditorium. Mr. Evans' beautiful color slides for illustrating his talks are well known to most of our readers. These slides and his ability as a speaker must also be well known in California, as his audience numbered 200 to 250 persons; and the Kings give a long list of the occupations represented in the California Color Society and the audience.

On June 16 the American Crayon Company were hosts to the Society for a program on "New Approaches and Experimental Design for Silk Screen," arranged by the company's art director, Dr. Emmy Zweybruck. Due to an auto accident, she was replaced by Miss Bernice Sharp as hostess; and Miss Mary Jane Rice gave an illustrated lecture involving the cutting of a stencil and printing a fabric.

New members of the group include Mr. Julio Villalobos, architect and co-worker with his father C. Villalobos, in developing the Villalobos Color Atlas (see ISCC News Letter No. 60, July, 1945).

In addition to the activities of the California Color Society, on June 3rd Al' King gave a talk to the La Jolla Camera Club at the La Jolla Art Center, and on the 4th Mr. Evans gave his lecture, "Creative Directions in Color Photography," for the Lens & Shutter Group of San Diego, who had as their guests the Southern California Council of Camera Clubs and the local Sigma Psi. The latter meeting was held at the Navy Electronics Laboratory at Point Loma. His well deserved popularity on the coast was indicated by the fact that the large auditorium was filled for the first time and by a very enthusiastic audience.

In a letter Mrs. King, CCS secretary, explained that last year she and Mr. King were so engrossed with trying to step up production of their art porcelains that they had little time to devote to CCS or other affairs, though they have been moving spirits in the Society since its formation. Also, the chairman was obliged to be out of town a great deal. There were difficulties, therefore, in arranging programs. This year things are different, and we have already seen some of the evidence above. But the Kings say that in order to be prepared for a July Gift Show, they are working almost nightly until one or two A.M.

COLOUR COUNCIL OF TORONTO — The regular dinner meeting of the Council, at which officers for the year were elected, was held on May 18 at Prince Arthur House, 145 St. George Street, Toronto. The meeting was addressed by E. Victor Grainger, Treasurer of the group, whose subject was "A New Canadian Flag." He presented his ideas with suggestions for color combinations. A proposal for further action on the flag was offered for consideration by the members.

In our last issue we inadvertently referred to Mr. Conquergood as President of the Colour Council of Canada. The Council in fact represents Toronto only; but we do not feel too badly about our slip, for we think, that if a Canadian color council is formed, Mr. Conquergood's name will be the first one thought of.

Incidentally, we learn from the Toronto Council's "Colour Comments" that Mr. Conquergood, its president, was honored on May 7th by the Canadian Advertisers Association, who awarded him a silver medal for advertising contributions to the Graphic Arts industry.

COLOUR COUNCIL OF MONTREAL

Mr. Conquergood of the Toronto Council in his "Colour Comments" reports that the following officers have been elected by the Montreal group.

President	-- Mr. Powell Trudeau, Montreal Lithographing Co. Ltd.
Vice-President	-- Mr. Douglas Hamly, Hawkesbury
Secretary	-- Mrs. Lisa Taylor
Treasurer	-- Mr. Arthur Adalia
Governors	-- Mr. G. F. Rogers (Arnott & Rogers)
	Mr. D. S. Ronald (Federated Press)
	Dr. E. J. Neugebauer (Adalia Ltd.)

A meeting of the new Council was addressed on May 25 in Hawkesbury by Douglas Hamly, who demonstrated some phases of color work at the International Cellulose Research Laboratory.

PHYSICAL SOCIETY COLOUR GROUP

The Eightieth Science Meeting of the Group was held on the afternoon of May 26 at the Institute of Ophthalmology, Judd Street, London W.C.1., with tea served at 4:30. The meeting was addressed by Mr. W. N. Sproson of the British Broadcasting Corporation, whose subject was Subjective White in Colour Television; and by Dr. M. Gilbert of the same company, whose subject was Colour Preferences in Television Pictures.

For the Group, a visit to Tintimeter Ltd., Salisbury has been arranged for July 21, with Salisbury Cathedral being visited in the morning. A Programme of Science Meetings of the Physical Society and Groups, January 1954 - September 1954, includes the above two lectures along with others of color interest. Lectures on February 17 by Dr. L. C. Thomson and Prof. W. D. Wright, on March 18 by Mr. L. C. Jesty and on March 24 by Dr. G. S. Brindley and Miss P. W. Trezona have already been reported in earlier News Letters.

NEWS LETTER JUBILEE ISSUE

As it was announced at the annual meeting of the ISCC, the News Letter will issue in November, 1954, its Jubilee Issue, the 100th number under the present editorship. It will consist of more than two-dozen two-page reviews of progress in various color fields during the period of the 100 issues, 1936-54. These will be written by ISCC members each known as top experts in their respective fields. The front page will be in full color. A former ISCC chairman informs us that he wants to purchase ten copies, and there have been indications that other delegates and members will want extra copies. These will be sold at cost price, which will depend on the number ordered, but in any case at not over one dollar, probably appreciably less. Will others who want to order extra copies please notify Secretary Evans or the Editor (see addresses on the front page of this issue) by August 15.

PASSING OF DR. JONES AND MRS. CONQUERGOOD

After this issue was made up for the printer we received notices of the recent deaths of Dr. Loyd A. Jones and the wife of Mr. C. R. Conquergood, so that we shall be able to pass on to our readers only the bare statement of their passing. Dr. Jones, who was chief physicist of Eastman Kodak Company since 1916, was one of the early and most active members in developing the form and direction of the Council, and its first vice-chairman, serving later as acting chairman. From 1933 on he was chairman of the O.S.A.'s Colorimetry Committee, which published in book form its authoritative report, "The Science of Color." His interest in the ISCC and color broadly was very active, in recent years in spite of ill health. In his passing this field has lost a distinguished member.

Mrs. Conquergood went with her husband, who was a former ISCC vice-chairman and counsellor, and President of the Canada Printing Ink, Ltd., to a Printing Ink Convention, where she became ill. After an emergency operation she was apparently doing very well, but later her heart failed. Mr. and Mrs. Conquergood were deeply devoted to each other. His family and great host of friends are doing all they can to help ease the difficult period of readjustment that faces him.

The Board of Directors took formal action to express to the respective families the sympathy of the Council and its members. We are sure the many friends of the two deceased and the survivors will want to join us in extending deepest sympathy.

ISCC PARTICIPATION IN CONFERENCE ON OCCUPATIONAL SAFETY

The ISCC was invited to send a representative to the President's Conference on Occupational Safety, held under the auspices of the U. S. Department of Labor in Washington the first week in May. Daily attendance exceeded 1000 persons, including Mr. Horace White of Vision Associates in Washington, appointed our representative by ISCC President Nickerson. Mr. White reports that not once in the Conference was specific mention made of color. However, he thought we could take some small comfort in the remarks of Mr. Gordon P. St. Clair, President of the Medical Supply Co., Rockville, Illinois. In the discussion of his employees' astonishing safety record of 9½ years without a lost-time accident, he did say that a clean, attractive working environment was very important to their good record. It is Mr. White's belief that future Conferences could benefit by ISCC representation on two permanent committees: Engineering and Research. The first would be concerned with color in machinery and equipment design, the second, in personal or human factors in accidents.

PAST-PRESIDENT STEARNS NEW POSITION

Edwin I. Stearns, ISCC immediate Past-President has been appointed assistant manager of the mid-western territory of American Cyanamid Company's Dyestuff Department, it was announced recently by James L. Naylor, Department manager. His appointment is effective July 1. Mr. Stearns joined American Cyanamid in 1933 with the Company's former Calco Chemical Division. After holding several positions in the Company's color departments he was named assistant to the manager of application research in 1951. The following year he was appointed manager of product improvement for the Dyestuff Department. In this capacity he worked on special sales problems.

A graduate of Lafayette College in 1932, Mr. Stearns received his M. S. degree from Rensselaer Polytechnic Institute and his Ph. D. degree from Rutgers University. He is a member of the American Association of Textile Chemists and Colorists, Technical Association of the Pulp and Paper Industry, Inter-Society Color Council,

American Chemical Society, and Phi Beta Kappa. Mr. Stearns in recent years has been much in demand as a popular lecturer on color and dyestuffs. He will have his headquarters at American Cyanamid's offices at 3505 N. Kimball Avenue, Chicago, where he will be associated with S. Klein, mid-western manager.

WANTED: A COPY OF RIDGWAY

Mrs. Florence Bergin of Hoffmann-Laroche Inc., Roche Park, Nutley 10, New Jersey, wrote on June 4 that she has been unable to obtain a copy of Ridgway's "Color Standards and Color Nomenclature." Mrs. Bergin will greatly appreciate information as to where a copy may be located. We wrote to her on June 10 that the former publishers of the book were A. Hoen & Company of Baltimore. Can any one furnish more recent information to Mrs. Bergin at the above address.

ALEXANDER STROBL

As a result of correspondence with ISCC member Alexander Strobl of the Stroblite Company, pioneers in the development of luminous paints, we learned that Mr. Strobl has a heart condition which prevents him from climbing the stairs to his present office at 35 West 52nd Street, New York 19. Mr. Strobl attended a recent meeting of the ISCC Committee in the Colorimetry of Fluorescent Materials, and agreed to furnish members of the committee "Blacklite" tubes, which are somewhat difficult to obtain at present. His friends and customers will wish to know that Mr. Strobl is now looking for quarters where he will not have to climb stairs.

Whenever the Editor sees Mr. Strobl, a pioneer as well as a master of his field, he recalls his first introduction to Strobl's wizardry. In 1930 the Editor was developing a Color Exhibition for the New York Museum of Science and Industry. Among three paintings produced under Strobl's direction was a large canvas showing a medieval castle in glowing colors (under one light). The light changed, and presto (!), the castle was gone and in its place was a dingy factory village.

MARIAN BLUE

On December 8, 1953, Pope Pius XII proclaimed this year to be Marian Year, in commemoration of the 100th anniversary of the proclamation of the Dogma of the Immaculate Conception of the Virgin Mary, Mother of Christ. In the Catholic Church for centuries blue and white have been considered the colors of the Blessed Virgin. This being Marian Year, the Mother Mary Mission High School of the Vincentian Sisters of Charity, Phenix City, Alabama, picked a blue to be called Marian Blue, and were pleased to find that that very color was labelled "unnamed" in Webster's New International Dictionary. Your editor, who was Special Color Editor of that amazing dictionary, was asked by Sister M. Celine of the Vincentian Sisters of Charity to call the previously unnamed color Marian Blue.

In accord with this suggestion, and in the hope that future Merriam-Webster editors will find that the new color name has received wide currency - since their policy has been to record current usage only, not to manufacture it - the Editor measured the specifications of a sample of Marian Blue received from Sister M. Celine. Its tristimulus values and chromaticity coordinates proved to be

X = .4221	Y = .4750	Z = .7438
x = .2572	y = .2895	z = .4533

The Munsell Renotation is 6.8 B 7.3/4.8. This color nearly matches the non-glossy sample 16ga of the Color Harmony Manual (Container Corporation of America). In the ISCC-NBS system it is a "light greenish blue." It is slightly redder and paler

than average robin's-egg blue, and slightly redder and stronger than beryl blue or average aqua blue. May we recommend the delectable color to our readers, and suggest that they learn to know it as Marian Blue.

ROUND-THE-WORLD TRIP

ISCC Treasurer, Norman Macbeth, who is president of Macbeth Corporation and an outstanding illumination engineer, in a letter of June 3 to the Editor, reported on a combined business and pleasure trip around the world from which he had just returned. "It was a really fast deal," he writes, "and we raced around the world in quick order. In only twenty-one days we travelled from New York to London, to Berlin, to Frankfort, to Zurich, to Cairo and Alexandria, to Bombay, Calcutta and Delhi in India, to Bangkok in Siam, to Hong Kong; and finally arrived in Tokyo. In order to do this and conduct business in practically all these cities, as well as to do some minimum sight-seeing, we had to spend very little time sleeping. All of our travelling was done by plane, much of it by night. We considered Berlin one of our interesting stops, particularly because of the political angles and the difficulties that the Berliners are faced with. I had the opportunity of seeing many new lamp developments at the laboratory of Osram in Berlin. In Egypt, we made a special visit to Alexandria, where I saw the actual operation of an Egyptian Cotton Classing Room and Compress. A room was just in process of being lighted by Macbeth Eaxamolites, this being the first such installation in Egypt. In Bombay, through the courtesy of Mr. F. N. Nanavati, who attended the International Cotton Standards Conference in Washington, and whose name was given to me by Dorothy Nickerson, I was shown the Bombay Cotton Exchange and the Cotton Research Institute, where they were doing much interesting work on textile fibers and colors. Of course, one of the highlights of our sight-seeing trip was to see the Taj Mahal, but almost more fascinating than this heavenly structure were the fantastically beautiful temples and palaces in Bangkok, Thailand. Hong Kong proved also to be extremely interesting, and very modern. It is a shopper's paradise.

'In Japan, where we spent ten days, I gave four lecture demonstrations to various technical groups, two in Osaka and two in Tokyo. Many technicians connected with industry and with Colleges attended these demonstrations and appeared to be most interested in the discussion of color matching and color control in industry as practised in the United States. The Japanese are striving to institute all types of quality control in their industry, so that they will have high quality merchandise. I had the pleasure of meeting Professor Omoto and Assistant Professor Dr. Yasuo Inamora, both with the Tokyo Institute of Technology. The latter presented me with the fashion guide of the Japan Fashion Color Association, which guide I have forwarded to our esteemed ISCC President. The Japan Color Society is planning to apply for membership in the ISCC. While in Japan, I visited many industrial plants and was amazed to see the excellent equipment with which they were working and their desire for more and better quality-control equipment.

'After twenty-one days of exhausting travel and ten days of hard work in Japan, we had ten days of relaxation in fabulously beautiful Hawaii. Unlike most visitors to Hawaii, we did not go "island hopping" but immediately transferred to the Hana Maui Hotel which, I understand, is one of the loveliest on the Islands, and just stayed put, as we were satiated with sight-seeing. On our return, we stopped for three days in Los Angeles, where we had the pleasure of seeing Karl Freund who, of course, took us to see the "I LOVE LUCY" show.

'I arrived back in Newburgh on the 25th of April and on the 26th I was on my way to Atlantic City for the American Textile Machinery Exhibition, not content with the

travelling that I had already experienced. Believe me, it will take eight horses to drag me away from Newburgh in the next several months. The one thing you can say about travelling is, that upon return, you can always say 'there is no place like home' and particularly there is no place like the United States."

(Signed) Norman Macbeth

COLOR VIGNETTE NO. 19

Through the courtesy of Dr. Robert W. Burnham, frequent contributor with Eastman Kodak, we have the following item which he says he found in News Time (for Junior American Citizens) April 14, 1951, p. 3. This is a school newspaper which his 11-year old daughter brought home from school. He (and we) found it "nice to know the children are getting some information on color." He headed the item "Pink Snow and Blue Rain"; it follows:

"Pink snow and blue rain fell from the sky at Renssalaer, N. Y. Near the city is a factory that makes dyes. First, a vat of red dye boiled over. Fumes from the dye rose into the air. Snow was falling. The fumes turned the snow pink.

'A month later, heavy fumes drifted into the air again. This time they were from a kettle of blue dye. They turned falling raindrops blue."

GRANVILLE EXPLAINS

The following note to the Editor, dated May 3, from Walter C. Granville, Assistant Director, Department of Design, Container Corporation of America, is self-explanatory. It is in answer to the letter of Mr. G. J. Chamberlin, quoted under the heading Compliments and Slams, on page 8 of our May 1954 issue.

I have your letter of April 27 together with copy of the letter you received from Mr. G. J. Chamberlin of The Tintometer Limited in which he questions my statement that "the color chips in the Color Harmony Manual represent to the best of our knowledge the most stable general collection of color standards now in existence."

As you indicate I had intended that the statement refer to reflecting color standards only. In fact I usually refer specifically to "surface color standards" when making this kind of statement, but in the above case I inadvertently failed to do so. Mr. Chamberlin is quite right in calling this to our attention since my statement was not intended to refer to glass color standards. I think anyone reading my complete letter of February 25 from which the statement in question was quoted could not infer that I was referring to anything other than surface color standards. I hope you will afford me this opportunity to correct the matter in the News Letter.

(Signed) Walter C. Granville

GRANVILLE ON COLOR AND JAIL BREAKS

Another letter from Walter C. Granville to the Editor, dated June 10, is quoted here in lieu of a review by the editors of the very comprehensive color plan enclosed with his letter; for Mr. Granville has evidently given the matter much thought, as he has similar material over the years. The enclosures are bulky documents totalling 111 detailed mimeographed pages. At least two architects and four contractors were involved. Color notations are given in terms of the chips of the Color Harmony Manual of Container Corporation of America and the corresponding Martin-Senour Paint Company Color Numbers. The three documents including revisions

range in date from July 1950 to May 1951. Detailed review of the plan would far exceed our available space. But there is one explicit question and at least two implied ones in Granville's letter which should provoke discussion by our readers. Anyone deeply interested in the questions raised may perhaps find out from Mr. Granville how to obtain a copy of the plan or perhaps borrow the copy loaned to the Editor. The letter to the Editor follows:

The item on color and jail breaks in News Letter No. 112 prompts me to tell you about the color plan for the new State Soledad Prison at Soledad, California which was completed about two years ago. A copy of the color schedule is enclosed from which you will see that somewhere between thirty and forty different colors were used.

Although I was unable to find any case where a cell contained more than one color on its walls, there is considerable evidence that the architects were striving for some degree of color contrast and variety for most viewing situations.

While I would like to have seen more variety in the cell banks, I think this plan, developed by Vernon Duckett, is excellent and represents a sharp departure from the orthodox treatment of painting everything in "prison" gray.

I would be interested to know whether it was the author's or the editor's opinion that the colors chosen were irritating rather than quieting. The reason for my question is that I have difficulty in accepting a definition of individual colors as being either irritating or quieting, for the same color can be made to produce either effect. Is it not the contrast with other colors and the design that are important?

(Signed) Walter C. Granville

CMDR. FARNSWORTH ON ANOMALOSCOPES

A letter from Commander Dean Farnsworth, Head, Human Engineering Branch, Medical Research Laboratory, U. S. Naval Research Submarine Base, New London, Conn., dated May 21, is self-explanatory. A subsequent letter transmitting a trivial correction tells that he and Mrs. Farnsworth had had a fine vacation trip in Canada (Quebec and Montreal), including the International Congress of Psychology. His earlier letter follows:

As usual, Dr. Murray has penetrated to the heart of this Anomaloscope matter. Her notes remind me that I have failed to call the attention of the readers of the News Letter to Miss Marion P. Willis' valuable and extensive paper on the "Comparative Evaluation of Anomaloscopes," Report No. 190, Medical Research Laboratory, New London Submarine Base, obtainable upon request from the Publication Unit.

The study examined six anomaloscopes, each chosen because it was either a classical instrument or because it exhibited special features in its optical design. A large number of color defectives were tested on all the anomaloscopes and some other color vision tests. Some striking contradictions to classical theory emerged and most readers will find important contradictions to some of their preconceived notions about the classification of color defectives. I think one of the most valuable contributions is a scoring method which Miss Willis devised so that scales on all types of anomaloscopes can be made comparable.

My conclusion would be that the anomaloscope is not dead as a Dodo, but that the

scores should be interpreted quite differently from the classical method and that entirely new interpretations should be placed upon the results.

(Signed) Dean Farnsworth

THE LIMITED OIL PIGMENT PALETTE

The following letter received from artist Henderson Wolf was dated June 13 at the Color Farm, New Preston, Connecticut. It carries further the discussion given under the heading "Trichromatic Pigments" in our May 1954 issue on pages 6 - 8. The letter follows:

In view of future discussions of the limited palette for oil painting, your introduction of dyes and dyers is a fortunate one. Dye-makers, like the manufacturers of artists's pigments, are called upon to match the most elusive colors, with economy and efficiency. The question of a limited palette, which is, of course, a very old one, seems especially pertinent now, with a wave of amateur painting sweeping the country. Beginning students, however, are often confused by the factors involved in the discussion. It might be of interest to clarify some of these factors. A striking factor is one that probably influenced Dr. Ives in his experiments with the limited palette: it is, of course, color printing by the four-plate process. Although by no means wholly so, this process is to a high degree automatic. Its speed, and, in recent years, its accuracy, could hardly fail to impress a large public, who are always intrigued by mechanical precision.

To what extent, we may ask ourselves, does the four-plate printing process parallel the methods used by the dyer and the painter, and in what ways can the printer's methods be profitably studied by the artist? The printer's "eye" is, of course, the camera. In one technique, at least, which the dyer or the artist can duplicate only with a high of skill and patience, the camera excels: it automatically records the transparency and/or the opacity of a color. The dyer achieves this effect by the strength of his solution, the period of immersion and in other ways of which the layman is ignorant. Granted that the goal is fixed beforehand, the difference between the camera's method and the dyer's, is CHIEFLY ONE OF TIME.

Granted, for the moment, the painter's skill and patience, and the quality of his pigments, how does the time factor affect his product? The answer is, the painter's goal is not fixed; it exists ONLY IN HIS MIND. If he gives too much time to mixing his pigments, his idea (or goal) may lose its lustre, or even vanish entirely. In practice, therefore, he uses the widest variety of colors that he conveniently can. The quality in artist's pigments which makes them difficult to mix is their varying degrees of transparency and opacity. It is not impossible to envision a chart which will take into account these qualities as well as the three dimensions of the Munsell system. In closing, let us hope that present and future members of the Color Council will have the opportunity to hear Mr. Evans lecture on opaque and transparent colors, illustrated with his unique slides.

(Signed) Henderson Wolfe

CORRECTIONS

Two trivial corrections should be made in previous News Letter issues. In No. 111 (March 1954), page 11, line 7, from the bottom, "Negriot" should read Negrito. In No. 112 (May 1954), Page 7, line 9 from bottom, replace "100-odd" by 1100-odd.

SUBJECTIVE COLOR STANDARDIZATION

The following review by Dr. Robert W. Burnham, Chairman of Delegates from the American Psychological Association, was prepared at the request of President Nickerson. It is a review of a work by Sven Hesselgren (ISCC Member) having the subject of our heading, published by Almquist & Wiksell, Stockholm (1954), 19 pp. Dr. Burnham's review follows:

A color atlas is described which contains 507 color samples prepared from commercial pigments. Had the atlas itself been available, a rigorous appraisal might have been possible. The impression is gained, nevertheless, that the atlas adds little, if anything, to what may already be found in a more precise form in the Munsell or Ostwald (Container Corporation) systems. The judgments on which tridimensional scales were based might have been more useful had they been directed toward refinements of these existing, highly developed systems. As it is, a new system has been developed around the Hering psychological primaries, which apparently needs considerable refinement before it will be of any real practical value.

The scales are tied to unspecified viewing conditions and the color samples, from one copy of the atlas to another, admittedly have low accuracy. The scales were constructed without benefit of classical psychophysical procedures, and the technique may specifically be criticized because it involved the "collective judgment" of a small group of (4 to 7) observers for most of the visual intervals determined. Finally, this "Excursus on a color atlas" is in places difficult to comprehend (at least for this reviewer) because a number of unfamiliar terms are used where established technical terms might have been more appropriate, and because familiar terms are used with unfamiliar connotations.

(Signed) Robert W. Burnham

RECENT DEVELOPMENTS IN COLOR

The following summary of a symposium on "Recent Developments in Color" at the 14th International Congress of Psychology was also prepared by Dr. Burnham. It was dated June 6. In a letter of June 18, he writes that "The symposium was an outstanding success, and was responded to by several discussants having wide reputations in the field of color; these were Professor Clarence Graham from Columbia University, Professor Ragnar Granit from Stockholm, and Dr. Henry Imus of the U. S. Office of Naval Research." Dr. Burnham expects that the symposium will be published and available during the next year. His summary follows:

The symposium on "Recent Developments in Color" held at 2:00 p.m. on Friday, June 11, 1954 as part of the 14th International Congress of Psychology in Montreal was sponsored and organized by the delegates from the American Psychological Association to the Inter-Society Color Council. Professor Walter R. Miles of Yale University served as chairman of the symposium and arranged a series of five papers which covered the field of color and color vision very broadly.

Professor Henri Piéron of the Sorbonne reviewed the functions of various levels of the mechanism of color vision and clearly pointed out the gaps in our knowledge which make it impossible at present to develop a comprehensive theory of color vision. Professor Austin H. Riessen of the University of Chicago discussed the role of light and color in psychobiology and reviewed a wide variety of infra-human studies which illustrate the fact that light is a fundamental source of energy in biological functions and hence significant in the adaptive behavior of the organism.

Commander Dean Farnsworth of the U. S. Naval Medical Research Laboratory at New London outlined the methodological requirements in the study of normal and abnormal color vision. He reviewed research during the past half century and pointed out serious methodological defects which must be corrected before the results of future research can be expected to provide a substantial basis for a definitive theory of color vision. Professor Lorrin A. Riggs of Brown University discussed the relation of color vision to the structures and physiological activity in the retina and its immediate neural attachments. His discussion covered recent research which has involved the development of ingenious new research techniques. Results show promise for uncovering the physiological substrates of color vision.

Mr. Ralph M. Evans, Director of the Color Technology Division, Eastman Kodak Co., presented a paper on the "Expressiveness of Color" in which he made elaborate use of color photography to illustrate the emotional, associative, and expressive elements of color as they affect people. The rules of color harmony were reexamined from the standpoint of a principle of "deliberate expression." It was shown that, in addition to the three basic attributes of color, the expressive elements of color include all other attributes and modes of appearance. In these terms it was possible to generalize the concept of color schemes, and to point the way toward a true understanding of the ways in which the "power" of color may successfully be applied.

Thus the gamut was run from descriptions of stimulus specification, to the receptor and integrative processes, to the simple motor and perceptual responses to color stimuli, and on to the more complex affective responses. The principal conclusion to be drawn is that, with recent improved techniques, plus an enlightened awareness of the complex multidimensional nature of color responses, methodological errors of the past will be rectified and large gaps in current knowledge will soon be eliminated.

(Signed) Robert W. Burnham

WHAT TIME IS GREEN

This is the title of an advertisement by Bell Telephone Laboratories in the April 1954 issue of Physics Today. It refers, of course, to the Bell System's television network for color transmission. Colors on the screen are determined in a special way. The color signals are matched against a reference signal. When the second signal is out of step by 50-billionths of a second, the transmitted color is green; if 130-billionths of a second, it is blue. The precision of timing must be extraordinarily exact. An "unbelievably small" error can cause a yellow dress to appear green, while a pale complexion may look red. The Bell Telephone Laboratories have developed apparatus to measure wave retardation to one billionth of a second. Errors are corrected by equalizers placed at key points on the circuit.

TCCA NEW COLORS

The Confidential Advance Hosiery Card for Fall and Winter 1954 was released to its members by The Textile Color Card Association of the U. S. on May 14, just too late for review in our May issue. The card includes six new colors picked because of their compatability with other colors in the ensemble. Roselaque, a "blush-tinged beige," is styled for wear with mahogany and bois de rose and with the shoe and leather color Spanish Tile. Sky-taupe is in perfect accord with charcoal, medium grays and the shoe color chromite. Keyed to Browngloze, a light brown, is the beige to brown gamut. For accenting blues, including navy and sapphire, also rich garnet reds, Tropic Honey is suggested. Bronze Sun blends well with olive, pine and bluer greens. For evening wear, with soft pastel and "ceramic" tones, Bisque Beige is favored.

"Tender Tints" with a soft and delicate air express the new lighter note in the Advance 1955 Spring and Summer Collection for Woolens and Worsteds, according to Estelle M. Tennis, Executive Secretary of the TCCA. These pale colors feature Pearl Azure, a "hazy muted blue"; Mist Mauve, an attractive orchid; Nacré White, a creamy off-white; Dreamy Green, with an undertone of yellow; Gray Shadow, a cool gray; and the "sky tints," Yellow Dawn, Aqua Cloud and Pink Horizon. This attenuated pastel range is especially interesting for knitwear and sports fashions. Keyed to the livelier fun and play tempo are the brilliant Gaytime Colors, which highlight Spirited Rose, Radiant Peacock, Festive Yellow, Sun Orange, Glowing Blue, Romantic Purple, Tempo Red and Lucky Green.

Ranking high in the new style appeal among the groups of harmonizing shades called Duo-Tones are the rich Rose Petunia and Plum Pink in the violine range. Italian Violet is an amethyst, while Carib Mauve is also in the light purplish range. In the "neutral" register are Pastel Sand and Pecan Shell and the warmer versions Capri Beige and Paris Brown. "Golden burnished" colors include Honeysweet and Toasted Wheat. Brighter colors embrace Hot Sparkle, a flaming scarlet, and the blending Coral Lily; also the pair Desert Sunset with Dogwood Pink. Blues are represented by Milanese Blue, a medium blue, and Schooner Blue, a spring navy. More spirited are Riviera Turquoise and Blue Duck. Grays are newly expressed in Antique Silver and the deeper Gray Pepper, while the green range is represented by the softer bluish tonalities, Roman Green and Sea Crystal, and a sprightly yellowish version, Spanish Moss, grouped with Wild Lime. There are 40 colors in all.

The 1955 Spring and Summer Collection for Man-Made Fibers and Silk, issued in June, also includes 40 new colors. For evening and sports fashions this group features rich Oriental Jewels, which reflect the influence of the Near and Far East. These gem tones are shown in silk pongee and comprise Persian Rubellite, an "intense mauvish pink"; India Peridot in the chartreuse scale; Siam Sapphire, an Oriental blue; Formosa Coral with an orangy undertone; Kashmir Emerald, a greenish blue; Arabian Ruby, a bluish red; Java Jade, and Egyptian Topaz. Expressing a charming lighter theme are the Bonbon Pastels, which feature "pretty dulcet tones" named Nougat Cream, Frosting Blue, Pink Almond, Candied Lime, Lemon Drop, Ice Gray, Glacé Aqua and Raspberry Frappé. These candy tints are portrayed in silk twill. Among the harmonizing pairs called Duo-Tones, shown in an acetate fabric, are the lavender-like Wood Hyacinth and Violeteen. Mauvebloom and Sicilian Violet are rosier violines. Also suggesting the smart mauvish influence are Rose Iris and Cloverblush, a pink. Blues are represented by Pompeian Blue, a "royal" type, and the lighter Blue Lotus; also Ciel Blue, a "clear sky tone", and the soft medium Lacquer Blue. Grecian Turquoise and Blue Parrot are greenish blues. In the "neutral" beige to brown register, the pale Ocean Sand and Maple Bisque are cited along with the warmer Casino Beige and Monaco Brown, a medium golden brown. French Haze and Gray Quartz are "taupe-tinted" grays. Gypsy Rose, Sunset Sky and Grotto Rose (an "animated coral") are vivid colors to enliven the spring color picture. Completing the collection are the soft Mallorca Green and the lighter blending shade, Sea Crystal, a "greenish water tint."

THE "KINGS OF PORCELAIN" — An article of this title in the May 1954 issue of Pacific Coast Ceramic News has a sub-title "A Saga of Western Pioneers." This pioneering note is sounded throughout that feature article of the issue. In a personal note about Albert H. King and his wife Louisa found under his picture we read: "Recognized universally by ceramists as a leader for his technical skill in the field of high-fired porcelains and equally recognized by artist-designers for his mastery in shapes and glazes is Albert H.

King, who, together with his equally talented wife, Louisa, have made the name 'King' synonymous with porcelain and a legend on the West Coast, if not throughout the nation." But the main article begins: "That Al and Louisa King are contributors in the field of porcelains on the West Coast is to put it mildly. They are the native pioneers of that field . . . ." When you get into the range of Cone 12-14 then you come upon the home field for the Kings."

We lack space to detail, as the original article does, the high lights in the career of the Kings, including the awards and the honors that have come to them. In a retrospective exhibition in 1951 were included examples of such difficult glazes as oxblood, celadon and peach bloom of such excellence as to cause critics to compare the King porcelains to those of the ancient Chinese dynasties. They work in the high-firing upper stratum, all single fired full porcelains, glaze decorated with reduced iron and copper in monochromes to produce a variegated polychromatic effect. In 1940, Al King published a book, "Mosaics and Allied Techniques," illustrating his versatility. Ceramic News reports that he is at work on a series of technical papers for presentation in that journal. Louisa King is secretary of the California Color Society; and she and her husband have from its inception been leading spirits in that active organization. The Kings have many friends in the Inter-Society Color Council, as they have in the west and in the art world generally.

I.H.G.

COLOR OF COTTON GRADE STANDARDS, 1909-54

This is the title of a 15-page article by ISCC President Dorothy Nickerson, writing as Color Technologist of the Cotton Division, Agricultural Marketing Service, U.S.D.A. The report was dated March 1954. The purpose of the report might be described as pedagogical, for it is intended to make the essential subject matter of a series of earlier reports clearer to cotton classers by exhibiting actual results of measurements showing color changes with time. This change is of course an important factor in preparing grade standards. Miss Nickerson had made six reports in the general field in the period 1933-1953. But these, she says no doubt seem rather technical and somewhat remote from the immediate problem of cotton classification. Their results and methods were brought closer home by showing measurements made in 1954 on standards set up in earlier conferences beginning in 1909. The opportunity of doing this arose when it was necessary to discard some old standards because of crowding of the storage vault. Measurements were made with the Nickerson-Hunter Cotton Colorimeter and plotted on the usual "color diagram" used with this instrument, giving a very graphic picture of the results. To exemplify, the samples illustrated in the first diagram of Figure 1 are from boxes of two grades put up in 1909. After 45 years the 1909 Good Middling samples are still up at the level of the Good Middling, and the Middling is well up in the present level of Middling, although both have yellowed until their color now has shifted from White until it averages in the present Tinges. Other diagrams are for samples of 1914, 1915 and 1925 shown against a background diagram of the present standards. Besides early sets of U. S. standards, measurements of two sets of so-called Liverpool Standards for American cottons, 1916 and 1920, are shown. Altogether the numerous diagrams and text give a good long-term picture of color changes in cotton grade standards.

I.H.G.

ART IN THE ICE AGE

Art in the Ice Age; Spanish Levant Art; Arctic Art; J. Maringer and H. G. Bandi, in execution of a plan by Hugo Obermaier; translated by R. Allen; 1953; F. A. Praeger,

105 West 40th Street, New York 18, N. Y.; 168 pp (9" x 12"); 216 fig. (21 in color); $12.50. This book was written by two disciples of Professor Obermaier, who died in 1946, when he had just begun to write a long-planned work on the cave and rock-shelter art. Obermaier's name is one of the two greatest in this field, the other and perhaps foremost being that of the Abbé Henri Breuil. Incidentally, the latter's "Four Hundred Centuries of Cave Art" has recently been translated by Mary E. Boyle and "realized" by F. Windels. It is a larger and more expensive work which the present reviewer has not seen. The two works have been integrated and reviewed together by Professor S. S. Weinberg in Archaeology 6, 174-80 (Autumn 1953). In the first-named book, the 126 pages on the art of the Ice Age were written by Maringer; the other (shorter) sections by Bandi. Spanish Levant art, a term coined by Obermaier, refers to the rock-shelter art of Eastern Spain, which was later and done in a very different style from the older (Franco-Cantabrian") art. Its best known sites are Alpera, Cantos de la Visera, Minateda and Las Batuecas; Parpalló, though in Easter Spain, is a "station" of the Ice-Age art. By Arctic Art is meant the arctic art of Northern Eurasia.

The three main sections of the Maringer-Bandi work are preceded by a short introduction and by a well-conceived table which shows the time relations of prehistoric men and their classification, their cultures and their art in reference to the double and triple cold maxima of the four glaciations of the Ice Age. The record of man - more exactly the remains of his tools and implements, sometimes of man himself - began some time between 600,000 and 500,000 years ago in the First Interglacial period. The record of his art began some time in the "Upper Paleolithic" period, which began (about 30,000 years ago) some time between the first and the second cold phases of the fourth glaciation. But the time span of the Ice-Age art is given by Maringer and Bandi as 30,000 to 10,000 B. C. while Breuil puts the dates at 50,000 to 15,000 B. C. The Upper Paleolithic cultures or tool industries are characterized by the use of "blades" (flint or obsidian knives, chisels, drills, daggers, scrapers, etc.) in distinction to flake or core-biface tools and implements. For an unusually lucid "popular" treatment of the blade industries as well as the older ones, the lay reader can do no better than to consult Professor R. J. Braidwood's "Prehistoric Men" (Chicago Natural History Museum; 1951; 50¢). Braidwood and other recent authors distinguish three cultures (Chatelperronian, Middle Aurignacian and Gravettian) all formerly called Aurignacian, and still so-called by Maringer and Bandi in their table and text generally. Other cultures of interest to the art period are the Solutrean, following the Aurignacian cultures, and the Magdalenian, when the Ice-Age art flowered; also the Perigordian, a modified Aurignacian supposed to be the ancestor of the Spanish Levant art, and in time about as early as the Chatelperronian period. Braidwood has the blade cultures beginning at 50,000 B. C., thus agreeing with Breuil; and this date was lowered from that of the first (1948) edition.

For the Ice-Age art, chiefly Franco-Cantabrian - Cantabria is northwestern Spain - the Obermaier plan, executed by M & B (as we call Maringer and Bandi hereafter), begins with an historical introduction, then describes the sites and then discusses successively the minor arts, the mural paintings and engravings, then the reliefs and sculptures in the round. It then doubles back and develops Obermaier's theory of the beginnings and evolution of the Ice-Age art. Maringer's final sections are the "Art Schools" and "Motivation of the Ice-Age Art." We shall pass over the historical section without comment, for its story is an oft-told tale. Understanding of the special relations of the sites is aided by a fine 12" x 18" map on both front and back inside covers. Of the sites, Alpera in southwest Spain has been called the "Sistine Chapel of the Ice Age," while the more recently discovered

Lascaux cavern near Montignac has been called the "Sistine Chapel of Aurignacian Art" as well as the "Louvre of the Ice Age." Most of the known mural art of Europe was found in France or Spain. Southern Italy has produced wall engravings and a painting in red. Belgium has produced a crude male figurine in ivory, Luxembourg an ivory sculpture of a beetle, England simple engravings on bones and Wales a few red marks. The latter and some red dots in a cavern in Czecho-Slovakia may be the remains of murals. But in this country were discovered (in mammoth-hunter stations in the central province Moravia) many female figurines, both realistic and highly stylized, and engravings on stone and bone. Poland and Hungary have produced only geometrical decoration on implements. From Russian mammoth-hunter stations and from Malta on Lake Baikal in Central Siberia came numerous female figurines. These "Venuses" began in Middle Aurignacian times. The most famous one, from Willendorf in Austria, is dated by M & B in the "late Aurignacian" (Gravettian) period. She wears a headdress and a bracelet and shows traces of having been painted red. In her corpulence she outdoes even the modern figures of Rubens. These corpulent or steatopygous statuettes were the rule; but a slimmer variant occurred both in Moravia and in two stations of the Ukraine.

We shall skip the small sculptured and engraved movable objects, such as a beautifully sculptured head of a neighing horse and other objects of animal art, mentioning also only animal pictures from Parpalló (Spain) painted on stone slabs in red, black and yellow, in order to get to our main objective, which comprises the cave paintings. These paintings were not the first indication of cave-man's interest in color. For in Mousterian times (100,000 B.C.) the lumbering brutish-looking Neanderthals had already discovered their vanity. In Mousterian levels were found faceted bits of cosmetic composed either of manganese dioxide or of red ocher. The Neanderthal male dandies dusted their countenances with this blue-black or red powder. As is the case among birds and beasts, only the males so adorned themselves. In Moravia, Professor Absolon found an "entire cosmetic laboratory," a profusion of pieces of red chalk along with yellow and white "dyes"; also, pestles and a sandstone plate to act as a mortar. The manganese ore or red ocher may have been used as body paints. In these pages, in early issues, we have often referred to burials in red ocher and even to painting the bones red.

It was Obermaier's theory that the oldest pictures, ribbon-like spirals or "macaroni" painted in red, yellow brown or black with the fingers, were imitations of the claw marks of the gigantic cave-bears, who liked to sharpen their claws on the hard rock. From simple furrows the "Aurignacian" men went to intersecting, interlacing and interweaving spirals, meanders and circles. Next came simple contour drawings of animals, also done with the fingers on clay, for the men of the period were essentially hunters who had ample opportunity of observing the animals who were their prey. The earliest colored representations appeared simultaneously with the engravings in the Chatelperronian period. They were pictures or silhouettes of hands, made by resting the fanned-out hand on the wall and blowing paint over it. These "negative" hands were at first framed in red, later in black. The ribbon-like paintings, at first multilinear (from several fingers) were done in light yellow or reddish yellow; later they became more complex but monolinear and executed in yellow, red or (more rarely) black. Next in the place of fingers came multi-pronged tools of wood or horn, and then gravers capable of cutting harder surfaces. Animal contours were drawn with multiple lines. The single-line engravings and the yellow or red paintings were stiff and clumsy. Only two legs were shown and the horns were shown in front view (the so-called "twisted perspective").

I.H.G.

(This article will be completed in the September issue).

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