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WE BEG PARDON
FOR OUR TARDINESS

We regret that this issue of the News letter has been delayed. The reason was an illness of the chief editor which kept him away from his desk for two weeks and made him able to work only a few hours a day for an additional fortnight.

NEW DELEGATES AND INDIVIDUAL MEMBERS


WASHINGTON COLORISTS

The Colorists of Washington and Baltimore met on May 12 at the Arts Club, Washington, at a dinner meeting. Following the dinner Dr. Deane B. Judd gave a demonstration and talk with the subject "Object Color: Does it belong to the Object or to the Scene." Many Council members have heard Dr. Judd discuss portions of this subject on other occasions, and know the subject to be an interesting one; they will also agree with the statement, quoted in the advance notice of the meeting, that he is "a most interesting and entertaining speaker." Mr. Frederic Rahr, was an unexpected and very welcome guest. Commander Bittinger, recently returned to Washington, presided.

BOSTON COLOR GROUP

This group met in the Emma Rogers Room at Massachusetts Institute of Technology on May 28, where the series of lectures on color mixture was concluded by a most interesting discussion of theater lighting effects by Mrs. Alexander Samoiloff.

PHYSICAL SOCIETY

Minutes of the first and second meetings, and the constitution of the newly formed Color Group in Great Britain whose formation was reported in News Letters No. 33 and 34, have been received by our secretary from their Honorable Secretary, Mr. H. D. Murray. The objects of the Group are very similar to those of our Color Council: (1) to provide an opportunity for various groups concerned with colour-physicists, chemists, industrialists, and so on - to meet and become familiar
with each other's problems; (2) to enable a representative opinion to be formed on various questions of standardization, specification, nomenclature, etc.; (3) generally to encourage colorimetric investigations and to ensure that this country shall keep abreast of developments abroad.

The Group was formed under the sponsorship of the Physical Society, any Physical Society member being eligible to become a Group member. Members of certain societies are eligible to become members of the Group by payment to the Physical Society of a small fee, other persons being eligible upon nomination by two members of any of the societies named, and upon a fee which is double that for members of member societies. A company or firm may apply for sustaining membership and, for a larger fee, may nominate not more than three members of their staff as ordinary members of the Group. At present members of the following seven societies are associated with Physical Society members in the Colour Group:

1. The British Kinematograph Society
2. The Illuminating Engineering Society
3. The Institute of Physics
4. The Royal Photographic Society
5. The Society of Dyers & Colourists
6. The Society of Glass Technology
7. The Oil & Colour Chemists’ Association

Four papers on Colour Tolerance were read at the first scientific session of the Group: Introductory, by W. D. Wright; The Technical Aspect, by H. W. Ellis; the Commercial Aspect, by R. S. Wilson; and The Physical Aspect, by J. W. Perry. The subject of the second meeting was Color Terminology, Mr. Murray being the principal speaker. Following his talk, a sub-committee was appointed to study the subject of a standard color terminology.

The offer of our secretary to distribute color reports in this country on behalf of the Colour Group members was accepted. The offer was made because it is difficult for individuals in Great Britain to send separate reprints to persons in this country, although a group of such reports can be sent by the Physical Society to one person for distribution here. Mr. Murray has been kind enough to offer to act in the same capacity for our Council. He suggests that although their membership is now about 75, it is probable that 5 copies of specialized reports, increasing to 15 for more general matters, would be sufficient. Copies of the ISCC-NBS color names report, copies of the color tolerance symposium and of the I. E. S. color symposium have been sent to Mr. Murray for distribution.

Another successful program of papers on color has been added to the list of symposia which the ISCC has jointly sponsored with its various member bodies. The cooperating member body was the American Ceramic Society and the occasion was the Forty-Third Annual Meeting of the Society held in Baltimore, March 30 to April 3. At the opening of the afternoon program on color, March 31, the science of color was probably strange to most of the attending ceramists. However, the response of the audience increased noticeably as the program progressed. One had the feeling at the end of the afternoon, it was reported, that many ceramists had realized for the first time that perhaps color was something they could understand and use scientifically. Color is an important property of many ceramic materials: glassware, porcelain enamel, china, wall and other architectural tile, brick, and even cement and stone.

All papers but one were presented by men who are actively connected with some phase of color work in the ceramic industry. These papers will be published as a
group in one of the issues of the Journal of the American Ceramic Society. The titles of papers and their authors were:

2. Spectrophotometry of Ceramic Materials, by F. H. Emery, Harshaw Chemical Co., Cleveland, Ohio;
3. Reflectometry and Filter Photometry of Ceramic Materials, by Ben Sweo, Ferro Enamel Corporation, Cleveland, Ohio;

CONFERENCE ON COLOR A number of Council delegates and individual members had the pleasure of attending the Conference on Color sponsored by the Departments of Art, Chemistry, Drama and Physics of Wheaton College, Norton, Massachusetts. The meetings were all held in the Plimpton Hall in the Student-Alumnae Building on May 9 - 10, except for the Saturday evening production, in the College Gymnasium, of a translation of Antigone of Sophocles, and an exhibition of Non-objective paintings from the Solomon R. Guggenheim Foundation in the Library Art Gallery. Several Council members, and individuals well known to the Council personnel were among the speakers. A note from Carl E. Foss, Vice-chairman of the ISCC, who incidentally has recently gone into business as a color consultant, states that "It all went very nicely; and Wheaton College should be congratulated. The program of the color sessions follows.

May 9, afternoon: Formal Opening of Conference: J. Edgar Park, President of Wheaton College, "Welcome to Guests"; Faber Birren, Author and Consultant on Color, "History of Color."

May 9, evening: The Specification of Color: Selig Hecht, Professor of Bio-Physics, Columbia University, "The Perception of Color"; Royal B. Farnum, Executive Vice-President, Rhode Island School of Design, "The Artist Defines Color"; Arthur C. Hardy, Professor of Physics, Massachusetts Institute of Technology, "The Physicist Defines and Explains Color."


May 10, afternoon: Color in the Mobile Arts: Glenn Shook, Professor of Physics, Wheaton College, "The Color Organ"; Mary Ellen Bute, Motion Picture Designer, "Composition in Color and Sound"; color films in connection with this paper included: "Parabola", Mary Bute, designer, Ted Nemeth, photographer, after music by Milhaud; "Spook Sport," Mary Bute after music by Saint Saens; "Escape," Mary Bute, designer,
Ted Nemeth, photographer, after music by Bach; "Optical Poem," design by Fischinger; "Tarantella" (premiere), Mary Bute with the collaboration of Edwin Gerschifski; Abe Feder, Theatre Lighting Consultant, "Light with Color in Action."

SYMPOSIUM ON COLOR IN ART

Following discussion by the Executive Committee that began last fall, a symposium of papers on color in art education is being planned. The following committee has been appointed: Carl E. Foss, Chairman; Frank L. Allen, Milton E. Bond, James C. Boudreau, E. Blanchard Brown, Elizabeth Burris-Meyer, Byron G. Culver, Dorothy Nickerson and Harold C. Parks. This committee will plan a Technical Session of papers connected with problems of color in art education. Of nine committee members, six are connected with well-known schools in five different cities.

COLOR IN ART EDUCATION

The following is in substance the report of the Problems Committee of the ISCC to the Executive Committee on January 10, 1941, on the Color Aptitude Test and other subjects. The report is signed by Dr. Forrest L. Dimmick, Chairman. A statistical analysis of data is in progress. Results from 42 subjects who were given the full test of 80 matches are being tabulated. We have on hand 34 additional sets of results upon which we are working. When we have accumulated at least 100 cases, we shall present tentative norms and percentile distributions. With a view to brevity in use, we are fractionating the data in groups of ten matches to show (1) whether one portion of the series is more or less difficult than another and (2) whether the errors decrease with practice during the series of 80 matches. With respect to the first point we find that more errors occur in the regions of the two series farthest from gray. This means that chips nos. 1-20 and 61-80 give a somewhat better diagnosis than the other parts of the series. Chips 61-80 show the highest number of errors, which agrees with the size of the physical steps. The second fractionation for practice effect shows no decrease in errors as the test proceeds. This means that the first 20 or 40 matches are as significant as the last 20 or 40. In addition to the 76 complete tests that have been sent, we have received a number of partial tests of 40 matches. These cannot be evaluated until we have completed the calculations from the full test series. The delegates who have contributed the data being used are as follows: Balinkin, Foss, Glenn, Helson, Macbeth, Newhall, Taylor, Zigler, "Set 16" and an unnamed person (the report tabulates the number of complete sets, half sets and quarter sets for each).

Gray Paint Standard. Within the last week Dr. Le Grand Hardy has answered a letter from the committee chairman; restating the problem of standard gray paints and indicating what has been done by Mr. Deutch relative to one particular paint which Dr. Hardy prescribed.

Assistance to Mr. Glenn's Project. No comment has been received from Mr. Glenn, but he is cooperating with the standardization of the Aptitude Test.

MUNSELL PAPERS

At the Discussion Session of the recent ISCC annual meeting, Mrs. Blanche R. Bellamy, Manager of the Munsell Color Company, reported that in addition to the twenty hues available in the regular Munsell Book of Color, another set of twenty hues ("third intermediates") are being completed. More than ten of these hues were already completed early in May, including chroma /2. There are now also available half steps on the neutral scale, giving 19 intervals between black
and white. Chroma scales are available on the 9/ and 9.25/ levels for three yellow series. Samples of all of these papers are being regularly supplied Mr. Granville and Miss Nickerson, who have set themselves the task of completing measurements of all the "extra" Munsell colors, of which there are already more than are in the series regularly available in the Book of Color.

OSTWALD FARBNORMEN—Mrs. Bellamy also stated at the annual meeting that since Miss Nickerson, Mr. Granville and Mr. Foss had expressed the wish to measure the Ostwald colors, full sets of Ostwald samples, procured by the Munsell company early in the 1920's, would be made available to them for this purpose. It is probable, therefore, that before too long there will be available both the measured and calculated values for the Ostwald system, as we have so recently had them for the Munsell system (J. Opt. Soc. Amer., December 1940).

CHILDREN TOYS, AND COLOR

We are reproducing here an excellent letter on an interesting subject written by Miss Florence Eaton in response to a letter of July 12, 1940, from her brother Major Doane Eaton, ISCC individual member, resulting from a conversation of his with the Editor. She has been head teacher for about a decade in the Payne Whitney Nursery School, the New York Hospital, and has contacts in the hospital, which is one of the world's largest institutions of its kind, so that her analysis and conclusions regarding the place of color in toys should be authoritative. (Mr. Eaton's letter mentions the observation that the Educational Equipment Co., New York, displayed unpainted blocks and gave as the reason that "children up to five or six do not react to color." He notes that Macy's better-quality blocks are also of plain wood; and he asks his sister about the bases in fact. I am asking that (the first-named) firm to report to me, she writes, exactly what they mean (by "because color means nothing to a little child") and will forward it to you. She continues: "I have made no scientific study of color importance, or even of color choices." (Hereafter we omit quotation marks.) But with fifteen years work with children two to five years of age I have gained some clear and fairly objective impressions which I am glad to pass on to you. Each year I have had a class of 15 - 20 children, with some returning for a second or third year (roughly 250 in all).

With the younger children, 2 - 2 1/2 years, play is still largely manipulative. They are still handling anything they can get, to discover its physical properties. It is my experience that with this group color adds a great deal of interest and information (italics the editor's, but note the contrasting group later). Before they can return the information verbally to you they learn that an apple may be red, that an orange may be yellow, as may also an apple; but that an orange never is red. I shall avoid any general statement regarding color choice. I hope to refer you to some good studies on color choices in children much sounder than any impression that "boys like yellow while all children prefer red as their first choice." Because color adds interest and knowledge, I always have provided the earliest toys in pure primary colors. Having toys in different colors is an aid to learning to identify color names correctly. This, by the way, comes much later than the visual ability to match colors. A very young child, two years perhaps, may never make a mistake in bringing you a block to match one you hold. But he may be four years old before he can tell you with unbroken accuracy its color name. Color names are abstract for children, except orange.

In speaking as they did about the lack of color in toys I have a feeling that the toy maker may have referred mainly to blocks. I do know, however, that much of
their larger apparatus is not colored, though it is varnished for outdoor use. But it is with blocks that I find that color ceases to be of so much interest as the children grow older and each toy assumes a functional rather than a merely manipulative role (italics the editor's). Blocks probably are the one most stable indoor toy. As construction material, interest in blocks carries on to the 10 - 12th year. In building, the design more or less evolves as the child works, though a general plan such as "... house, barn or fire station..." may have been fairly clear at the start. The plan and result are a simple total idea. Design is quite secondary; because of this, color here may introduce a contradictory note. I agree that if all of the blocks were of one color, color would then seem not to be a disturbing element. But in actual life I have yet to encounter either a home or a school where all blocks were of one color.

Therefore the child likes the unpainted blocks because they have no color to interfere with his design. He is designing for shape only, not for color; and the occasional colored block disturbs. The unpainted blocks have the value that with them you can construct in any direction. You can have a dozen changes in design as you go along, yet the final result has that same uniformity one would get with all red bricks, or of bricks all of any one color. Perhaps that is as good an analogy as I can offer in support of my idea as to why, sometimes, varied colors are not of interest to the child. He is doing something with shapes, rather than with colors; and he is aided by having his varied shapes all in one color, or all uncolored. An adult builder is not unimpressed by the various colors in which bricks are available. But he simply prefers not to mix too many colors in any one building. The child, more immature, may not express himself as well as the adult, but he has a similar feeling about simplicity of materials for his design. The adult contractor would have a fair supply of profanity if someone sent him a load of yellow bricks with which to finish a red brick house.

All of this does not preclude the use of colored blocks as design. A clever child may take the colored cubes and make a decorative frame for a window in his house. But I am convinced that I have seen more inventiveness in the use of blocks of various shapes than I have in the use of blocks of various colors. I think that the handling of color consciously is more intellectual, and further up the scale, than most of the children in our age group of 2 - 5 have yet reached. I have seen babies not yet two years old arrange a room filled with toys in definite patterns as regards the shape and size of those toys. But not with regard to color. Another point that I am sure is important deals with the children's imagination. This is more true again of blocks than of other apparatus whose use is clearly defined by its structure, such as a wheelbarrow, a swing, or a climbing apparatus. To a four year old's fertile brain a block can be a whole train filled with people. It can be one car or a long train. It can be one brick in a building. Or it can be a soldier in a long parade, to topple over in a row when you will. In such situations the very absence of color, or of varieties of color, gives freer rein to their imagination. The same principle holds true when I buy Plasticine, the modelling material. I buy only one color a year, though it may be terra cotta one year, blue the next, etc. For it is a constructive material on the very sensory level, and here again the introduction of several colors is disturbing. Did you ever hear "You cannot be creative and critical at the same time." (My own remark.)

With finger painting the children use a colored paste-like substance. They use it directly with their hands on the surface to be painted, and here I feel matters are different. For here they are experiencing color in the most intimate way possible. They get their hands into it, and I give them as much of it and as many
colors as the school can afford. It is first of all an emotional expression. Usually it also is creative, but that seems to be secondary.

As you know from seeing our school I believe in having a colorful atmosphere in which to live. The books are colorful; so are the closets, and their clothes. I provide large colored scarves to play with at music time. There are very colorful clothes to dress up in and pretend one is most anything. But when it comes to building blocks I think the children have proved that varied color is a hindrance, just as it is to an adult contractor. To children four and five years old blocks are tools, each one pointed a different color. He might say at least, "H L, what's this," and some of my children can be pretty expressive, too. Come see our finger paint work, if you want to be reassured that color does mean something to little children.

Signed: Florence (Eaton).

THE STORY Dr. Judd, Editor for Science, reviews for us The Story of Color, by Faber Birren. Pp. 339, Figs. 230, 22 x 30 cm. The Crimson Press, Westport, Conn. 1941. Price $7.50. The ambitious purpose of this interesting work is to provide an adequate historical and traditional background for students and writers on one or another of the various aspects of color. It is stated in the preface, "The chapters have been assembled from notes which I have gathered over the years. Slowly they have crowded my desk to a point of bursting. Their confusion and wild disorder have never ceased to trouble me. How to write about a subject that covers a thousand bypaths of history, a thousand aspects of human thought, desire, hope and feeling?" The diversity of topics treated certainly bears out this claim to protracted search of literature. The topics range from after-images, alchemy, amulets, art and aura, to Yoga, Young-Helmholtz theory, Ziggurats and the Zoroastrian Scriptures. The bibliography lists more than 200 books. The problem of arranging the material for presentation must have been even greater than that of collecting it, and we are pleased to report that this problem has been brilliantly solved. The story of color is told in relation to man, his world, his religion, his culture, his art, his health, his science, and his mastery. Thus the book is divided into seven parts, each consisting of a series of related 4 or 5-page essays, each essay complete and fascinating by itself, yet the whole well-knit and revealing surprisingly little repetition. In this way Birren has created an account of color that is at once encyclopedic and easy to read, and the essays comprising the last four parts particularly are in the terse, dramatic style for which the author is justly famous.

It is fairly likely that a reader of the early parts of the book will ask himself whether it is worthwhile to rake up myriads of half-forgotten color meanings out of the past. Ideas which have failed to survive are likely to be false. The reader might say, "This book tells me more misconceptions of color than I want to know; give me the proven facts." Such people will find The Story of Color valuable chiefly as a handbook of color history; they will wish to read only Part VII, His Mastery, the two appendices on symbolism and psychology, and the last 11 essays in Part VI, His Science. Others will study the whole book eagerly. In the main the misconceptions are clearly exposed by the manner of their treatment, and most of the controversial questions are wisely resolved.

The first three parts (The World of Man, His Religion, His Culture) are devoted to the thesis that in the old days "color was a language whose every hue had definite meaning. What man chose for his garments or his temples had little to do with an affected idea about the tint of his hair or skin or the locale of his
monuments. The very mysteries of life prescribed his palettes, and he expected hues to perform certain duties." Hundreds of examples are given. "Man respected color... because it defined the supernatural and presaged its actions."

Although the "majority of modern color symbolism is motley" because of the large number of sources from which it is drawn, there are general meanings which have been summarized in an appendix for ready reference. The special meanings are further summarized by charts and tables in the book itself under the topics: ancient symbolism, modern symbolism, colors of the four quarters of the earth, of the elements, of the planets, of the signs of the zodiac, Chinese color symbolism, Chinese color schemes, color symbolism of the Catholic rite, of the Scottish Rite of Freemasonry, and color in heraldry including the heraldic method of identifying colors in black and white drawings - a system that is useful for other purposes.

The main thesis brought out in Part IV, His Art, is "that art has been one of the tragic failures of modern civilization, that it lacks the essential and practical qualities that it had in ancient times, and has become mere vanity that is difficult to justify in terms of life." (This view impresses the reviewer as rather extreme, but he refers it to our Editor for Art). Color in painting is nevertheless given considerable space under the headings: The Masters of the Renaissance, Old Palettes and Techniques; Impressionism - And Then What? There is also an essay, Theories Born of Practice, dealing chiefly with color harmony according to Da Vinci and Chevreul. "Artists seldom have the patience or the humility to synthesize the efforts of others and to work progressively." Included in this part is an excellent treatment of "color-music." (Scriabin, Newton, Field, Wilfred, Klein).

Part V, His Health, traces the devious path by means of which modern psychiatry is beginning to make successful use of color therapy. Out of nostrums, talismans, the Philosopher's Stone, the Elixir of Life, Babbitt's thermolune, and Hessey's chromopathy, has come the color therapy accepted by modern medical practices. Babbitt's thermolune though it may have had no other merit, at least "encouraged Victorian prudes to expose their bodies to the sun." The valid use of color in the diagnosis of disease, and the questionable use by Hessey and Sander of chromatic light in its treatment are alike detailed at length. Maybe Hessey and Sander were not all wrong after all, hints Birren in his section on the Mysterious Growth of Plants.

Part VI, His Science, is developed chiefly to show the diversity of explanations given for color, and to indicate their conflicts in broad outline. Thus, according to Aristotle, "The color black occurs when air and water are thoroughly burnt by fire." Brief accounts are also given of the contributions of Pliny, Da Vinci, Boyle, Newton, Goethe, Schopenhauer, Field, Gladstone, Ellis, Young, Helmholtz, Maxwell, Munseil, Brewster, Rod, Ostwald, Katz. The general theme is that physics "does not rule over the senses--it merely deals with the things that prod them." These summaries are in the main correct, but unreliable in a number of details. For example, it is stated on p. 239 "Yet without intending to do so Helmholtz confused the physical aspects of color with the psychological. He assumed, for example, that simple, monochromatic colors were the real elements of color vision." It is the reviewer's opinion that Helmholtz has been notably successful in separating the physical aspects of color from the psychological. Furthermore Helmholtz held with Young that there are only three elements of color vision, as indeed Birren correctly reports on p. 240.
It is true that Helmholtz's work led to the specification of color by reference to the spectrum; this method of specification has not been found particularly useful as a guide to color harmony, not nearly as useful as description in accord with the Hering theory, for example, which deals with elements more closely related to perception. It is possible that Birren's somewhat unfair criticism of Helmholtz was used deliberately to get his point across to the general reader with as few words as possible.

Similarly we find that the Munsell color system is correctly described, but a number of the criticisms appended to the description are unfounded. For example, it is stated (p. 249) that "Munsell's five primaries do not comply with the laws of physics, chemistry, or vision. His conception of chroma is fallacious, because he implies that the purity of a color may be extended indefinitely." The fact is, of course, that there is nothing in the Munsell system which requires the purity of a color to be limitless. The early writings of A. H. Munsell are rather obscure and might easily have led to this misconception. Other criticisms of the Munsell color system made by Birren as well as some of his praises for the Ostwald system, being given with no amplifying statements, seem to be unjustified; but a discussion of them with the author indicated that it would be worth while for him to phrase these arguments more carefully and more at length. He has accordingly agreed to write up for the News Letter a comparison of the Munsell and Ostwald color systems with regard to utility.

The closing essay, David Katz - The prodigal Son, summarizes the more detailed application of Katz' work to color in pictorial representation given in one of the author's earlier books, Monument to Color. The six photographs illustrating the new principles by which the mode of appearance may be controlled are in some respects superior to those accompanying the original account.

Part VII, His Mastery, deals with the great body of color knowledge which has been bequeathed to us out of the welter of conflicting views summarized in the earlier parts of the book. Coloration of animals for self defense, their color vision, anatomy of man's visual mechanism, after-images, eidetic images, memory images, synaesthesia, color preferences, color and design, and color in use are some of the subjects touched on. There is little to criticize except that some of Part VII seems to have been written more hastily than the earlier parts. Thus the Karwoski-Odberq monograph on color-music is fairly well summarized, but the name, Karwoski, correctly given in the bibliography, is rendered consistently in the text as Korowski. Nelson's work on the effects of chromatic illumination is summarized but no reference to the published work is given. Similarly, quotations from Klüver's work on the eidetic image are given but no mention of the place where it is to be found. These omissions will trouble the general reader only slightly if he notices them at all.

It will probably amuse the prospective purchaser of this book to learn that the chief criticism of it, in spite of its 150,000 words, is that so little space has been devoted to most of the topics that the treatment is superficial; yet this is literally true. The book is more carefully prepared than earlier books by the same author and contains fewer misstatements, though some of them are repeated here (such as the erroneous explanation of the setting sun's reddish color, p. 221.) Birren has sought to evaluate each contribution to color knowledge in accord with its usefulness to the colorist of the future, and to this reviewer it seems that he has made a fairly shrewd evaluation. It is characteristic, however, for these evaluations to be supported by a degree of overstatement. Birren is very sure of his
decisions, but finds it hard to be fair in his brief supporting argument. Treatment of controversial questions resembles, therefore, the speeches of a prosecuting attorney, more than a summary of the case by a judge. This method will delight the general reader, and no doubt arouse the ire of the specialist. But it is a good book for the specialist to read just the same, particularly one who deals, like the reviewer, chiefly with numerical specifications of color. He will find how very little attention need by paid to mathematics by a practical colorist, even as studious a colorist as Birren, and he will derive from The Story of Color at least a hint of Birren's vision of the coming renaissance of color in which beauty, utility, and man's emotional needs will be served by color as never before.

BALINKIN

A colorful announcement tells us of a dinner meeting in the Student Union and Physics Buildings of the University of Cincinnati on April 25, which was sponsored by the American Institute of Architects, the Architectural Society of Ohio, the Cincinnati Architectural Society and the Illuminating Engineering Society. Dr. Isay Balinkin, Assistant Professor of Physics and a color authority well known to Council members gave the lecture with demonstrations entitled "Color: Its measurement and specification." The lecture was attended by 200 members of the participating societies. The May 1941 issue of "Craftsmen's Impressions," organ of the Cincinnati Club of Printing House Craftsmen, announced a lecture, "Color Matching and Specification" by Dr. Balinkin at the Alma Hotel, Cincinnati, Ohio, including "practical demonstrations with various equipment."

COLOR WORK

During recent months we have heard from Dr. Manfred Richter of Berlin acknowledging reprints of ISCC material that have been sent to him.

IN GERMANY

More recently your secretary has received copies of several reprints and an announcement of a new book: "Grundriss der Farbenlehre der Gegenwart" (Principles of Present-day Color Knowledge), published December, 1940, by Theodor Steinkoff, Dresden and Leipzig, which Dr. Richter has said he would forward. The reprints, and the book when it comes, are received by way of the German Imperial Exchange. Through the USSR Society for Cultural Relations with Foreign Countries, Moscow, we have received recently copies of reprints and a book by Prof. N. T. Fedorov, "General Color Knowledge," published in Moscow, 1939. The book is based on the course given by Prof. Fedorov at the Moscow Textile Institute and includes references to "the selected ordinant method of Hardy and Pineo," the "new color triangles of Judd and MacAdam with equal chromatic scales." The book is in Russian; but the following reprints from Comptes Rendus de L'Academie des Sciences de L'URSS, 1939, are in English, by Fedorov and Fedorova, the work all being dated from the Laboratory of Physiological Optics, All-Union M. Gorki Institute of Experimental Medicine:

On the number of light sensitive substances in the retina (pp. 75-80)
Theory of the eye's photometric sensitivity (pp. 696-9)
Instantaneous visual threshold after light adaptation (pp. 692-6)
Photometric sensitivity of the eye (pp. 700-3)

Your secretary also has copies of two papers by Prof. S. V. Kravkov and one by L. J. Strozecka:

Some new findings on color vision, Kravkov, Acta Medica URSS, II, 3 (1939)
The influence of the loudness of the indirect sound stimulus on the color sensitivity of the eye, Kravkov, Acta Ophthalmologica 17, 3 (1939)
Influence de l'excitation auditive sur le contraste achromatique, Strozecka, Bull. Biologie et Medicine Exp. VIII, 3-4 (1939)
A new determination of the relative luminosity curve, Fedorov et al, J. of Physics III, 1 (1940)
On the laws of binocular color mixture, N. N. Livshitz, Comptes rendus de l'Academie des Sciences de l'URSS XXVIII, No. 5 (1940)

PSYCHOMETER
As reported in the minutes of the annual meeting (p. 28) the highlight of the dinner entertainment was provided through the generous cooperation of Julius Garfinckel & Company, Washington, who provided models and costumes, and of Mr. M. E. Muniz, who demonstrated the psychometer which his company, the Psychological Testing Bureau, 55 West 42nd Street, New York City, are developing. It may be of interest to some of our members to know in what way this instrument is claimed to be different from other psychometers of the same type. All psychometers measure changes of skin resistance; but it is claimed for this instrument that a new circuit eliminates all effects of polarization and all changes in apparent resistance level due to changes in amount of perspiration on the skin. An electronic voltage-regulating circuit takes the place of manual operation in keeping the psychometer in adjustment, which frees the operator's attention for concentration on his subject.

DEMONSTRATION
Mrs. Burris-Meyer, with the generous cooperation of Julius Garfinckel & Company, Washington, who provided models and costumes, and of Mr. M. E. Muniz, who demonstrated the psychometer which his company, the Psychological Testing Bureau, 55 West 42nd Street, New York City, are developing. It may be of interest to some of our members to know in what way this instrument is claimed to be different from other psychometers of the same type. All psychometers measure changes of skin resistance; but it is claimed for this instrument that a new circuit eliminates all effects of polarization and all changes in apparent resistance level due to changes in amount of perspiration on the skin. An electronic voltage-regulating circuit takes the place of manual operation in keeping the psychometer in adjustment, which frees the operator's attention for concentration on his subject.

COLOR IN FASHIONS FOR MEN
The 1941 issue of "Correct Fashions for Men," compiled by Raymond G. Twyeffort, chairman of the Fashion Committee of America, is filled with colorful ideas. "Wear your Red Flannels Again" is suggested as a keynote for 1941. "More color in all requisites of men's attire will toughen up America, for Color is just as essential to vigorous mentality as a well balanced diet." The booklet, which includes 63 pages, gives a great deal of useful and interesting fashion information. If you are interested in seeing a copy, why not write to Mr. Twyeffort about it? He is one of our individual members, you know. Many of you will recall the note in the January 1940 issue of the News Letter which calls attention to the "Reader's Digest" and "New Yorker" articles about Mr. Twyeffort's interesting ideas and work.

COLOR IN PAINTING THROUGH THE AGES VIII.
Style in the shaping, decoration and coloring of pottery is one of the archaelogist's most reliable criteria for the identity and contacts of ancient cultures. The early cultures of the Near East may be broadly arranged in two groups, those marked (1) by Painted-ware, and (2) by Plain-ware. Painted designs on pale backgrounds developed from the weave patterns of basketry prototypes. Basketry is as old as the Mesolithic barbarians; and it seems to have inspired the criss-cross motives of Maglemose art (6500 B.C.) Baskets lined with clay hold water; and if then fired produce a material resembling stone, the beginnings of pottery. The artists' imagination slowly leads to the inclusion of animal, plant or abstract motives. The Plain-ware cultures are so-called from the fact that plain surfaces are the rule for the pots, the colors being gray, black, brown or red. Here the shapes are derived especially from leather-bag and gourd prototypes. When the carrying-sling, binding or girth-band (or a basket) is recalled, decoration is most often incised, and may be emphasized by a white filling.

The varying colors come from the different clays and fuels for firing. In hot, dry regions the color is frequently pink or buff; the smoky fire of damper woods
burns clay gray or black, unless the pot can stand free of the charcoal for the iron content to oxidize red. A rich red surface may be obtained by applying a "slip" coating rich in iron. With this a black top will make an effective contrast if the mouth of the vessel is buried in charcoal while firing; or black can be obtained by applying matter which will char of itself. A refinement of the slip is the painting on the unfired pot of a pattern which will burn red or black, while the ground fires pale pink or buff; but control of such a light ground requires the intense, smoke-free heat of a built oven or kiln.

The pottery styles of the Tell Halaf culture of North Syria and Assyria (see article VII of this series), and of the Susa and El Obeid cultures of Elem and Sumer, are in the painted-ware tradition. The wares of the earliest Egyptian and Anatolian communities were plain; and the same is true of isolated elements within the painted-ware province. Perhaps basically the distribution was in time rather than spatially, and the plain wares were earlier offshoots from an original center in southwest Asia; for the beautiful pottery of Tell Halaf or Susa must have had a long history behind it, and may have developed from a plainer ware. Early Anatolian pottery is typically dark (black or brownish); and the red-ware technique which predominated in the subsequent Copper Age is thought to have come from the east or southeast (Cilicia), while Crete represents an extension of the province.

Most of these regions with pottery had advanced to the high state of culture, which we described in article VII, while Europe remained of Mesolithic barbarians: hunters, fishers and food-gatherers. The revolution which led to food production took place in the Middle East. There were some Mesolithic survivals: the Natufians in Palestine and the folk of at least three other cultures in Egypt and coastal North Africa, populations forced by drought to remain near water. But by 6000 - 5000 B.C., groups of farmers grew up in the more favored regions, especially in the regions of the Nile and the "Fertile Crescent" extending along the Two Rivers to the Persian Gulf. In the sites of this region, which have been described, in general there was found no underlying Mesolithic. The settlers brought their civilization with them, possibly from the Iranian plateau, developed apparently directly from a late Paleolithic stage of culture. They were masters of cereal, dairy and stock farming, even possessed of some copper implements and ornaments.

We shall now review the pottery colors and styles, some of which were given in the last article. If we go back before the start of the Christian era by an amount three times the length of that era, we come to the earliest of the cultures following the Mesolithic in Egypt, namely to the Tasian, whose pottery was a dark brown tulip-shaped one with geometric decoration. At Mersin, on the Cilician coast of Asia Minor, was found a thin black or brown highly-finished ware. At ancient sites north of modern Aleppo in Syria were found villages with painted pottery, a highly polished black ware ornamented with incised markings filled in with white paint. Similar pottery was found in low levels at Tell Chagar Bazar and Tepe Gawra, sites without metal in Iraq. Somewhat later (5000 B.C.) arose the Badarian culture of Egypt, with many advances which we shall not detail. This had not only thin polished black bowls and beaker-shaped black pots, but also a globular buff vase and frequently pots red on the lower outside but black on the rim and inside, the result of the process already described, and with a ripple finish. In Persia, where bread wheat arose by crossing of inferior types, there was a "Highland ware", with black decoration on a buff or greenish ground. In the copper-using Tell Halaf culture, found at the North Syrian and Assyrian sites already mentioned, above levels with black ware were polychrome wares, delicately and beautifully painted. Broad horizontal bands of red were used to separate the registers, in which a common decorative motive was
a chevron pattern in alternate red and black. The Jhukar ware of India, too similar in colors, arrangements and motives (not in shapes) to be an independent invention, dated nearly 3000 years later, shows that this period was required for the idea to travel across Asia. In the Tell Halaf cities were found sophisticated monumental circular buildings, cobbled streets, wheeled vehicles and stamp-seals used for marking property, indications of a highly organized if early society.

In the Amratian culture of Upper Egypt, of slightly later date, was found finely burnt red ware with black top, followed by a ware with chalky white lines on a reddish wash and a black ware with incised designs; while at a site near the Nile Delta was a simple dark plain ware based on leather and open basket forms, often with lugs for hand or string hold. At Tepe Musyan, in the hills of Elam near Mesopotamia, in the lowest levels occurred reddish pots sometimes decorated with incised or relief ornament, in other cases with geometric designs in red paint. At Eridu in Mesopotamia was a similar ware with dark designs on a buff or greenish ground; this ware, previously mentioned, was also found on the east coast of the Persian Gulf. Somewhat related wares were found at Susa, the ancient capital of Elam. These include thin, delicate graceful tumblers ornamented with matt black designs painted on a bright pale-buff ground. There is a beautiful combination of purely geometric motives with highly stylized natural representations; there is excellent subordination of specific motives to the design of the decorative scheme and masterly adaptation to the given shape. A black-on-buff ware was also found in the ancient city of Tepe Gawra, at Ras Shamra in Northern Syria, where evidence of one of the earliest alphabets was found, and at Tell el Obeid (4500 B.C.), near "Ur of the Chaldees," from whence Abraham came over 2000 years later. El Obeid type excavation levels were also found at Ur, at Kish farther north, and at other sites still farther north. In Mesopotamia, these levels occurred before the Great Flood. At Gawra, traces of a purple-red paint were found; also of the first landscape painting. About 4300 B.C. began the Gerzean pre-dynastic culture of Egypt, introduced by invaders from Palestine and Syria, who cultivated grain, domesticated cattle, and introduced the 365-day calendar, a more advanced copper metallurgy, and the worship of Isis and Osiris. Their pottery is without color interest; but another invading folk had a painted ware with designs in brownish red on a light buff ground. In Egypt from the very beginning we find a feeling for balance and rhythm in design, and a greater feeling for adapting designs to surfaces than was the case with the Cave Man, though in other respects they were behind.

At about the time of the Flood, there was a Copper Age city at Mersin, with fortified buildings and polychrome Tell Halaf ware. A polychrome ware also appeared at Persepolis in Persia; and there were also some magnificent mural paintings. The polychrome ware here and at other Near East sites is linked to that of Baluchistan and India through a painted pottery of the country between, with similar designs in monochrome on a yellowish gray. To this general period belongs also the walled city of the first settlement at Anau in Turkestan, which had a painted pottery, never incised nor glazed. The pigments varied from a black to brown and violet. The third pre-dynastic culture of Egypt, the Semenian, includes at Hierakonpolis a tomb with walls painted with yellow ocher as a ground for a mural painting of scenes of the chase, combats and dances, all in the style of the decorated pots, the colors being red, black and white.

At a date roughly about 3900 B.C., began the great Sumerian civilization which founded the first dynasty at Erech. Its culture, which left such a great impress on the later civilization of the Near East and the world, had only a dab unpainted pottery. But it was wheel-made, indicating that industrialization which befits a
commercial people. The first dynasty at Erech was preceded by the first of Kish (Kish I) and was followed by Ur I. At a site near Kish, called Jemdet Nasr, was found a pottery painted in many colors, the most prominent of which is a rich reddish purple, while another is black. This polychrome "Lowland ware" was also found at Susa II, Tepe Gawra, Farah, Ras Shamra and other sites of the Second Copper Age of the Near East. It is due to the pigtail-wearing Hurrians, who came into the land of the Two Rivers from the north about the time the Sumerians arrived from the south. At Tepe Gawra, between the polychrome Hurrian layer and the Sumerian level, was a "Semitic" level with unpainted pottery. These three folk and the Elamites of Susa, round-headed like the Hurrians, all fought for centuries for the control of the rich and fertile area, and their wars are marked by the rise and fall of numerous dynasties in the city-states of the region.

COLOR At the Discussion Session of the recent annual meeting Miss Rose A. Baird raised an interesting point. She asked if it would not be a valuable and legitimate piece of work to prepare a glossary of color terms for use in Buying and Selling, for manufacturers, retailers, and consumers. If this does not come within the province of the Council, she asks who could do it; for it has often been tried, perhaps at least once in every university with a home-economics course. But no university or other agency has yet been able to make it universal; it seems to need just the impact of the Color Council. Miss Baird submitted that color terms, as used by consumers, fall into three categories, and she illustrates them as follows.

(1) Terms commonly understood correctly: light colors, rather light, very light, lightest possible; dark colors, rather dark, very dark, darkest possible; bright, brilliance; vivid, strong, rich, and such; soft, greyed, full, dusty, foggy, neutralized and such; matching color;

(2) Terms consumers are not sure of or use incorrectly: hue, shade, tint, tone; mixture; intensity, saturated, neutral; warm, cool, contrasting;

(3) Terms not commonly used except by color specialists; and "even they seem to be mystified": primary, hue, value, chroma, achromatic, complementary, analogous, and others. The editors would be interested in comments regarding the above suggestions. In this connection should be recalled "A Comparative List of Color Terms" compiled in 1939 from reports of delegates of ISCC Member Bodies by its Problems Committee under the chairmanship of Deane B. Judd and assembled at Hobart College through the courtesy of Forrest L. Dimnick. To help along the cause the editors recall a few more terms quite commonly used, as clear, muddy, dull, thin, weak, dingy, drab, hungry, masstone, undertone, overhand, downhand, full shade or full color, "fluorescent" hose, bloom, barre, "pure" color; "red shade of blue", and the difference between the nuances of "shade" in the phrases: (a) "what shade is it, red or orange?" (b) "We submit three dyed shades for your inspection", (c) "This one (of two) is the yellower shade." (d) "It is a dark shade of blue"; (e) "Its (a full color's) tints are more preferred than its shades." We suggest also that while "brilliance" is well understood by many persons in the particular sense in which each uses it, the word is used in more than one way.

GREEN We note with interest that as reported in "Drug and Cosmetic Industry", vol. 47, page 40 (July 1940), V. Vivados' new lipstick "Viva-caprice" LIPSTICK! is green. Perhaps the idea was suggested by the observation that many a person, green in experience, viewing some prospective action through rose-tinted glasses, has not found it to be the pink (choice) of perfection, and has had the face turn red. We add that the new lipstick goes on green, but turns red and stays red very permanently.