

INTER-SOCIETY COLOR COUNCIL

NEWS LETTER No. 105

MARCH, 1953

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CALIFORNIA COLOR SOCIETY

This active affiliate of the ISCC was scheduled to meet on the evening of January 28th at the Art Center School Auditorium, 5353 West 3rd St., Los Angeles. The speaker of the evening was announced as Tomoo Ogita, formerly Japanese language instructor at the University of Michigan, who has devoted the past seven years to research in oriental esthetics and archaeology in Japan. He has written a number of brochures and lectured widely on oriental crafts, especially on ceramics. His subject, illustrated with 200 color slides, was Color in Oriental Ceramics.

COLOUR COUNCIL OF TORONTO

On March 9th, this most recent affiliate of the ISCC held its first public meeting. The meeting was originally planned for an audience of 150 persons; later, realizing the need of providing for an audience of 500, the auditorium of the Lord Dufferin Public School, at 325 Berkeley Street, Toronto, was rented. The need of this increased space arose of course from the reputation of the speaker, Mr. Ralph M. Evans, and reports about his lecture, "The Expressiveness of Color," which had been given previously before other groups. Mr. Evans is Secretary of the ISCC, head of the Color Control Department of Eastman Kodak Company, and author of the authoritative book, "An Introduction to Color." As usual Mr. Evans' talk was profusely and beautifully illustrated with color photographs.

A recent notice states that the April meeting of the Council will be held on April 13th, at Prince Arthur House, the topic being Interior Decoration. For the May meeting, scheduled for May 11th, the subject has not yet been announced.

PHYSICAL SOCIETY COLOUR GROUP

The seventieth Science meeting of this group was scheduled to be held at 3:30 on January 7th at Imperial College, South Kensington, London S.W.7. After tea at about 4:45, the following papers were read: A New Visual Colorimeter, Prof. H. Cotton, University of Nottingham; A Visual Tricolorimeter Using the C.I.E. Primaries X, Y and Z, Mr. R. W. G. Hunt, Kodak Limited; The Spectrophotometry of Fluorescent Pigments, Mr. R. Donaldson, National Physical Laboratory.

The next meeting of the Colour Group was scheduled for February 18th at the Institute of Ophthalmology, Judd Street, London W.C.1, with the following papers listed: The Convergence of the Tritanopic Confusion Loci and the Derivation of the Fundamental Response Curves, Dr. L. C. Thomson, Group for Research on the Physiology of Vision, Medical Research Council, and Professor W. D. Wright, Imperial College; Some Aspects of Cone Monochromatism, Mr. R. A. Weale, Group for Research on the Physiology of Vision, Medical Research Council; and Defective Colour Vision and Human Genetics, Dr. H. Kalmus, The Galton Laboratory, University College, London.

The Chairman of the Colour Group is Dr. T. Vicerstaff of Imperial Chemical Industries; the Secretary is Mr. R. W. G. Hunt, one of the speakers listed above. Election of officers for the year 1953-54 was to take place at the Annual General Meeting in March 1953. The offices of the Physical Society are located at 1 Lowther Gardens, Prince Consort Road, London S.W. 7.

FIRST LADY PINK Through the courtesy of Mrs. Margaret Hayden Rorke, Managing Director of the Textile Color Card Association of the U.S. Inc., we received a sample of First Lady Pink, so-named after Mrs. Dwight D. Eisenhower, who wore a gown of that color at the Inaugural Ball on January 20th. The First Lady, in a telegram from her secretary on January 26th, graciously accorded this non-profit association, an ISCC member-body, the privilege of promoting the color, stating that she would be pleased to have the color called First Lady Pink.

The sample has a Munsell renotation approximately 9RP 7.6/4. This color would be described in the ISCC-NBS system as a "pale purplish pink." It appears to be nearly a match for the glossy side of sample 9 ca of the Container Corporation of America's "Color Harmony Manual." This sample is called Light Orchid Pink or Mauve Pink in the Taylor-Knoche-Granville Descriptive Color Names Dictionary." The First Lady Pink sample appears to be slightly different from 9 ca in the direction of the 8 ca (Baby Pink).

CORONATION COLORS Canada Ink, the interesting little house organ of Canada Printing Ink Co., Ltd., whose guiding genius is ISCC Vice-chairman, C. R. Conquergood, in its January, 1953, issue reproduces the five colors for Coronation Year sponsored by Her Royal Highness, Princess Margaret, Patron of the British Colour Council. The Council's samples were carefully matched and reproduced. The approximate Munsell notations, Color Harmony Manual notations and ISCC-NBS descriptive names follow in that order.

Elizabethan Red; 2R 4/8.5; 8 nc; moderate red
Marguerite Green; 2 BG 4.7/2.5; 21 lg; grayish green
Beau Blue; 10B 7.4/4; 15 ga(?); pale blue
Princess Grey; 10P 6.0/0.5; 10 fe (?); medium gray to purplish gray
Spun Gold; 3Y 8.8/5; 2 ea; pale to light yellow

In connection with this subject, see also our article, "Coronation Shades," in the preceding News Letter (January, 1953).

HAROLD LLOYD IN A NEW MEDIUM We are interested, and believe all of our News Letter readers will be, in an item sent to one of your editors by a California friend. It was a clipping from a local newspaper about an exhibition of paintings by the movie star, Harold Loyd. When Lloyd joined the Council a good many years ago, we asked him about his interest in color.

Certainly it was a matter of long standing, for at that time he said that his first color chart had been bought from Harriet Taylor of the Favor Ruhl Company in Chicago. Since Miss Taylor was active with that company in the 1920's, we knew then that Mr. Lloyd's interest was one of long standing. In fact, he could not at the time have had a better introduction to the writer!

Later, at the time of the ISCC Symposium at the Santa Monica meeting of the SMPTE in 1949, we found from his secretary that for a long time he had been having a lot of fun in working out color schemes - that he would paint all kinds of combinations just for fun, and to see the effect. It was such a personal hobby that he would not at that time let anyone see the paintings. We are glad that this interest has developed to the point where his friends now have persuaded him to exhibit these paintings so that others may enjoy them too. It sounds like a lot of fun.

The clipping (we do not know the name of the newspaper in which it appeared) reads as follows: "Harold Lloyd, comic film star, will have his first one-man show of paintings at the Frank Perls Gallery, 350 N. Camden Drive, Beverly Hills. The exhibit will open with a preview 8 to 11 p.m. Friday to which the public is invited. Lloyd has long been an ardent student of color relations. His paintings are an outgrowth of this interest. He has been painting for many years, but has not previously exhibited."

PURPLE COURAGE

According to Faber Birren, red is the color of courage and zeal. Purple is the badge of nobility. But in the case of the Empress Theodora, purple must be associated with courage. In A.D. 532 the populace of Constantinople rose against the Emperor Justinian. It seemed as if the capital of the Eastern Empire would share the fate of Rome, which it had supplanted as the center of Western civilization. The mob was out of control, the Emperor's guards driven back, and he was preparing for ignominious flight. But Theodora stood before the mob, and shouted: "We all must die sometime; and the purple is a noble winding sheet. I, the wife of Justinian, will not flee. I shall die empress rather than live a coward." Justinian, "born to the purple," took heart from the courage of his consort, a former dancer and actress, and daughter of a bear-keeper. The tide was turned, and the dynasty and empire saved. For once, violence failed during the ten centuries which saw 73 out of 107 Byzantine rulers undone by force or compelled to abdicate. In those centuries Byzantium kept alight the lamp of civilization during Europe's Dark Ages. The courage and faith of Theodora in the husband born to the purple was the turning point.

I.H.G.

HOUSE AND GARDEN COLORS

Mr. H. Creston Doner, Libbey-Owens-Ford Glass Company, an individual member of the ISCC, recently asked about the possibility of including in this News Letter mailing, a one-page publicity piece about the House and Garden Colors that his company is putting out as 6-inch Plaskon discs. Your officers have agreed to this enclosure although in the past the policy has been essentially not to send publicity material with the News Letter. The present instance is something of an experiment to show the membership what is being done in one phase of color, and also to see if they would like to have selected material sent out from time to time. Your comments are requested.

COLOR IN THE FOOD PROCESSING INDUSTRY

Recently we received the following interesting letter from Mr. T. J. Smith, of Magnuson Engineers, 509 Emory Street, San Jose 10, California, makers of the Agtron

spectrophotometer, whose use for grading tomatoes is official in California. Mr. Smith takes us mildly to task for neglecting an important field (and we plead guilty); but unlike most critics, he offers constructive help in doing something about it. We sent for the paper by Dr. Gould referred to by Mr. Smith, and saw from the references that the field is quite active, as he says. Besides references to the Evans and Judd books, and papers by ISCC members Balinkin, Hunter and Nickerson, there were several recent items dealing specifically with food color, by Gould, Peterson, Healy, Kramer, Robinson, T. J. Smith and Younkin.

According to Gould, the instruments being considered for grading fruits and vegetables, especially tomatoes are: (1) The Hunter Color and Color Difference Meter; (2) the Magnuson Engineers' Agtron; (3) the Purdue Color Ratio Meter; and (4) the Beckman Spectrophotometer. Matching with Munsell paper standards and other methods used by the U. S. Department of Agriculture are also mentioned. The first, second and fourth of the instruments just mentioned are shown in photographs, as is the use of Munsell papers with Macbeth daylighting (of color temperature 7500°K). The letter follows:

Dear Editor:

"Over the past three or four years, the food processing industry has become intensely interested in color measurement because color is such an important factor in determining the value of both raw and processed foods. Cannery and growers have always argued over minimum raw product color, so the U. S. Department of Agriculture and various state agencies have established minimum color standards for most food products. Control and enforcement of such minimum color standards is one of the principal industry problems and is getting major attention by processors and growers in the United States and Canada, and many other countries too.

"I notice that the Inter-Society Color Council gives little attention to the color problems of the food industry, yet these problems are very important to our national economy and affect everyone who eats processed foods -- and doesn't that include everybody nowadays? The recent rapid development of objective color measurement devices has been followed with great interest. The industry is rapidly applying color measurement principles, and a number of special instruments and machines have been developed to grade and sort food products. There is much recent literature on the subject which I think is worthy of inclusion in your News Letter bibliographies, and furthermore I think that attention to this subject would create greater interest in the Society and possibly increase its membership.

"As a start I would like to call your attention to a summary of the present situation by Dr. Wilbur A. Gould, Assistant Professor of Horticulture at Ohio State University. His article (Here's Where We Stand on Color Grading of Fruits and Vegetables) appears in the February, 1953, issue of Food Packer, Volume 34, No. 2, pages 42, 44, 96 and 99. If there is interest in expanding the Society's activities in this direction, I would be glad to offer my assistance."

Magnuson Engineers
T. J. Smith

Perhaps Mr. Smith may know of an organization of national scope in this field which may care to associate itself with the Inter-Society Color Council as a member-body.

FRED SIMON IN
NEW POSITION

In a letter dated January 30, we learned that Frederick T. Simon, formerly Head of the Color Department, Peerless Woolen Mills, Rossville, Ga., was to become, on February 2, Director

on the Textile Laboratory, Good Housekeeping Institute, Hearst Magazines, Inc., at 959 8th Avenue, New York 19, N. Y. He succeeds W. E. Coughlin, who has gone with Celanese Corporation of America.

Mr. Simon began his color career with Calco Chemical Division of American Cyanamid Co., and later went to the Philadelphia Quartermaster Depot Research Laboratories. His next work was as head of the Spectrophotometric Laboratory at Sidney Blumenthal & Co., from whence he joined Peerless Woolen. Simon has been active on AATCC's Sulfur Aging and Color Committees, serving as the 1951-52 Chairman of the latter. His place as chairman is taken by I. H. Godlove, who was chairman in 1943-45 and secretary in 1946-52.

The Editors wish Mr. Simon every success in his new position.

THE SCIENCE OF COLOR

The Committee on Colorimetry, appointed by the Optical Society of America twenty years ago to revise the 1922 Report on Colorimetry, has completed its monumental task.

The result of its lengthy (and spirited) deliberations and an enormous amount of writing, reviewing, revising, and editing has appeared as a book entitled THE SCIENCE OF COLOR. It is unique among authoritative works in that it commences with a popular account of the beginnings of man's use of color, and the beginnings of the science of color. Succeeding chapters dip into the philosophy of color and color measurement, the anatomy of the visual organs, and the psychology of color. Technical chapters on the physics and psychophysics of color prepare the ground for handbook-type chapters on "Quantitative Data and Methods for Colorimetry" and "Colorimeters and Color Standards."

THE SCIENCE OF COLOR was prepared under the intimate supervision of twenty-three world-famous experts on color and its applications. Leaders in the field, they hold positions of importance with the National Bureau of Standards, the Johns Hopkins University, General Electric Company, Corning Glass Works, Eastman Kodak Company, Bausch and Lomb Optical Company, General Aniline and Film Corporation, and many others.

The book is being published by Thomas Y. Crowell Company, 432 Fourth Avenue, New York 16, N. Y., who have devoted great care and skill to making it outstanding as an example of the bookmaking art -- unusual in a scientific work but highly appropriate for a definitive book on color. With 385 pages of generous size, 6 7/8 x 9 3/4 (only slightly smaller than the Journal of the Optical Society of America), 25 pages in full color, 102 graphs and diagrams, and 40 numerical tables, THE SCIENCE OF COLOR will be both an ornament and an essential tool for everyone interested in and concerned with color. The price of this great work is \$7.00.

A.C.H.

Ed. Note: A.C.H. modestly refrained from mentioning his own organization in the list of those from which the "world-famous experts" came. So we add to the list the Massachusetts Institute of Technology.

COLOR STANDARDS AND COLOR RESEARCH

We have received a small but surprisingly complete little booklet of this title prepared by American Color Trends, Research Division of Faber Birren & Co., 500 Fifth Avenue, New York 36, N. Y. This is a comprehensive, alphabetically arranged, 20 page, 3 1/4" x 6" booklet describing very briefly the color standards on the American and British markets and telling where they may be obtained (usually with price).

MORE ON A COLOR INDEX. We are in receipt of a letter, dated March 9, from Mr. George F. Conery, Research Department, Plastics Division, Monsanto Chemical Company, Springfield 2, Mass., to M. Bertin of the French Ceramic Society, with reference to the Color Index referred to in our January 1953 issue. M. Bertin's address is chief of Documentation, C.N.E.R.C., French Ceramic Society, 23 rue de Cromstadt, Paris XV^e France. Mr. Conery attaches to his letter a typical data sheet and sample calculation to illustrate his method, which determines, as indicated in the letter, a "Three Point Yellowness" (abbreviated here "TPY"). The first three figures in each case refer to reflectances at wavelengths 420, 500 and 700 mu, respectively. For a Vitrolite Glass Tile from NBS Certificate: 89.7, 91.9, 89.5, TPY, -2.6; Vitrolite Tile measured here against magnesium-carbonate block: 91.8, 93.3, 89.8, TPY, -5.5; White Plastic (TiO₂) measured here against the same magnesium carbonate block 73.3; 78.8; 74.2, TPY, -4.1. The first two values of TPY show that all white samples measured in Mr. Conery's laboratory against the particular carbonate block will be "too blue" by 2.9 units. Therefore subtract this correction-factor algebraically; that is, TPY (NBS) = -4.1 (-2.9) = -1.2. The letter follows.

Dear Sir:

Your letter of December 8, 1952 to Mrs. Mary Gibb of the American Ceramic Society was recently reprinted in the January, 1953 Inter-Society Color Council Newsletter. Your reference therein to a "color index" which defines the yellowish or bluish tint of enameled pieces containing TiO₂ has aroused our curiosity. It closely resembles an index used in this laboratory to describe white opaque plastic samples pigmented with TiO₂.

"Reflectance readings made on the General Electric Recording Spectrophotometer are used to calculate an index called the "Three Point Yellowness (N.B.S.)". A value of zero indicates a neutral white whose Reflectance curve (Reflectance vs. Wavelength) is parallel to that of Magnesium Oxide, the universal standard. A negative value indicates a bluish white with greater reflective absorption in the long wavelengths of the visible spectrum. In a similar manner, a positive value of the yellowness index indicates a yellowish white with greater relative absorption at the shorter wavelengths.

Calculations are made with the formula

$2(R_{700}) - R_{500} - R_{420} = \text{Three Point Yellowness (N.B.S.)}$

in which R = Reflectance relative to Magnesium Oxide at the wavelengths indicated in millimicrons.

Since it is inconvenient to make reflectance measurements against freshly prepared magnesium oxide, a technique has been developed whereby these measurements can be made against a secondary standard such as freshly cut magnesium carbonate blocks. These readings can then be translated mathematically to the universal magnesium oxide scale by means of a white Vitrolite glass tile (Corning Glass Co.) certified by the National Bureau of Standards at Washington. The tile and unknown samples are measured against a magnesium carbonate block at 420, 500, and 700 millimicrons. Three Point Yellowness (observed) is calculated from these data for both tile and unknown samples. Then the three point yellowness (N.B.S.) of the Vitrolite tile is calculated from the certified Reflectance measurements made against the magnesium oxide primary standard at the National Bureau of Standards. (This information is supplied with each standard tile purchased from the Bureau). A comparison of these two Three Point Yellowness values for the Vitrolite tile provides a

correction factor by which all yellowness values observed against that particular block of magnesium carbonate block can be transformed into N.B.S. (MgO) data. This is illustrated in the sample calculation attached to this letter.

"If the Three Point Yellowness Index described here corresponds to the Color Index that you inquired about, we would be pleased to hear of any modifications that you might develop for use with other types of photometric equipment. In any event, we are curious to know how you learned of this measure of "yellowness" and would appreciate hearing from you."

Sincerely,

George F. Conery
Research Department

COLOR VIG- The following came from Dr. R. W. Burnham, who culled it
NETTE No. 14 from the January, 1953 issue of INDUSTRIAL LABORATORIES:

Skywriting, long considered by the public a color occupation for pilots, has been brought by research to the threshold of greater effectiveness as an advertising medium - aerial messages in fluorescent colors. Colored smoke in skywriting was introduced commercially Columbus Day, when a pair of Army training planes at 10-12 thousand feet traced out a mile-high letters in white and yellow; next day, one plane came back and wrote the advertiser's name, all yellow letters.

"3D" Our frequent contributor, E. Taylor Duncan, was so impressed
MOVIES by the new "three-dimensional" movies on first viewing that he sent us a letter about them including a number of clippings from Louisville papers. He states that the chromatically colored films were more effective than the black-and-white ones in producing the illusion of depth, as might be expected from the greater number of "clues" which may be present. The best ones, Duncan thought, were the animated cartoons, from which the animals appeared to "hop out into the audience." At one point it seemed that one of these images was suspended in mid-air about nine feet in front of him. A second viewing appeared the same way.

The "Natural Vision" process, by the technique known as "Stereo-Techniques," is in many respects an old familiar one. The images, say of animals in a scene, are photographed from somewhat different points of view, just as they are seen in nature. Each lens, focusing and converging on an object almost as do the human eyes, provides a separate and complete 2-dimensional picture. In a theater, the normal two projectors in a booth project the two separate pictures onto the screen in superposition, much as in the nature they are projected into the "brain eye." The right and left images pass through Polaroid light filters placed in the port-holes of the projection booth. The two images are superimposed in register almost as one on a reflective-type screen. The images are reflected back to the viewer who is equipped with Polaroid spectacles, which serve to accept the correct image intended for each eye, while rejecting the image not intended for that eye.

COLOR VIG- E. Taylor Duncan tells us that Comdr. Dean Farnsworth has a
NETTE No. 15 hobby of breeding black kittens with white eyebrows. He suggests that the navy expert might, for variety's sake, turn some of them inside out and make them white kittens with black eyebrows.

COLOR AND From Mrs. Mary J. Gibb of Ceramic Abstracts, published by
INSTRUMENTATION the American Ceramic Society, we received the February, 1953

issue of the Society's Journal. On page 36e of the Ceramic Abstracts is a brief review of Edward W. Rhael's "Color and Instrumentation," recently sent to ISCC delegates. A copy of the review follows.

"COLOR AND INSTRUMENTATION. Edward W. Rhael. Sandoz Chemical Works, Inc., New York, 1952. 59 pp., illus.-The specification of color is a complicated process that is covered well by R. in as concise and abbreviated a form as possible. The fundamentals of color, i.e. the light stimulus and properties independent of the observer, are discussed in the section on physics. The use of the I.C.I. "normal observer" method and observer response to the physical stimulus are included in the chapter on psychophysics. The psychology section covers a short description of the physiology of the eye and some of the variations resulting from the individual differing from the so-called standard observer. A short discussion on color comparators and spectrophotometers is presented. An appendix gives some curves of transmittance characteristics of typical dyestuffs obtained with a spectrophotometer. 20 figures." D.B.J.

COLOR IN VISION PUBLICATIONS We have just received the 1953 Catalogue of publications of the National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N.Y., which incidentally is holding its annual meeting at the Hotel Statler, New York, at the same time, March 18-20, as the Optical Society of America. Among the very inexpensive publications on the eye and vision we note: Illumination and Color in Industry, by Faber Birren, 12 pages, 10 cents; and Color Vision and Color Vision Testing, by R. R. Chace, M. D., 12 pages, 10 cents.

CARL FOSS AND DECORATING E. Taylor Duncan noted and sent to us the following item by Women's National News Service concerning Carl E. Foss, well known ISCC member and color consultant. It appeared in the March 9 Louisville Times. "You can make color in your home 'sing' by the way you combine one with another in decorating, an expert advises.

"Women might do better using their own ideas of what colors go together by what they like to see, Carl Foss, color expert for industry, told a convention here of the newly organized New York City Council of the Painting and Decorating Contractors of America. Don't go by the rules laid down by colorists - they don't always produce the best results, he added."

HOW DETERMINE HUE? A major question discussed in the recent ASTM Symposium was whether plotting on the CIE (or x,y) chromaticity diagram is sufficient to determine the nature and magnitude of color differences, or whether resort must be had to some form of "equal-chromaticity" diagram. That is, to go farther toward a psychophysical representation which bears more resemblance to direct visual experience. A similar question arose in connection with a paper, soon to be published by a chemist and colorist of international reputation, which was sent to the Editor for criticism. The author had used dominant wave-length as a criterion of dyer's "shade" (hue), comparing the so-determined hue of "shaded standards" with the hue of the unshaded standards, as determined visually by the average of six highly experienced colorists. The samples were paint panels. Four consisted of a blue standard and this blue shaded with red, yellow and white pigment. The red standard was shaded with blue and with black, the green standard with red, blue and black, and the gray standard with black. This made 13 colors in all, or 9 differences from standard. The measurements used for interpretation were the average of agreeing determinations in the author's laboratory, in

the national standardizing laboratory of his country, and in the Editor's laboratory.

In the case of strength and dyer's brightness, there was no definite disagreement between the average visual judgments and the interpretations of the measurements. In the case of the blue standard shaded with white pigment, however, three of the colorists called the shaded sample greener than standard (the other three calling them "equal"), whereas a shorter dominant wave-length would imply that the shaded sample was redder. If instead, the Munsell hues of the sample and standard were taken, they would be seen to indicate that the shaded sample was greener than standard, as judged by half of the colorists. In another of the nine cases, there is also some possible improvement of the interpretation by the use of Munsell hue instead of dominant wave-length; but here, and perhaps even in the first case, the changes, while qualitatively in the right direction, may be below threshold.

When we seek the reason for this improvement on using Munsell notations, we need not go far to find the answer. It lies in the bowing of the lines of constant hue, with respect to the straight dominant wave-length lines, on the CIE chromaticity diagram, or in the shift of the constant-hue lines with Munsell "value" (or luminous reflectance). As stated by the author of the paper being pre-reviewed, "In most cases an unambiguous decision as to the hue difference can be derived" by noting the dominant wave-lengths. But there are some cases, especially when the differences are quite small, where the other method will yield a truer answer. One should not be surprised at this, for the Munsell system was designed to yield close resemblance to introspective visual judgments, and the x,y-chromaticity diagram was not. And in point of actual experience, the Editor, and no doubt many of our readers also, has often met cases of the phenomenon here discussed. Noting the failure of the author to use the Munsell method should not be regarded in any sense as an adverse criticism. For he was deliberately seeking to find out how far a very simple interpretation of the measurements would go in reaching agreement with the visual facts; and determination of the differences between two closely similar munsell notations requires enough care as to make the process somewhat time-consuming.

I.H.G.

COLOR VIG- According to J. D. Ratcliff, writing in the March 14 COLLIER'S,
NETTE No. 16 "Pills are Getting Smarter," and as a rule their dress is in bright colors. "For some reason people object less to taking a shiny red pill than to taking a dull white one." The placebo, a harmless pill, usually containing only milk sugar, is especially made more elegant with color. "If a doctor is convinced nothing is wrong with Widow Jones, he may prescribe a red placebo to be taken after breakfast, a white one after lunch, a blue one after dinner" (pages 72-3).

GARDNER LAB- We recently received the 1953 Catalog of Testing Instruments
ORATORY ITEMS for the Paint and Other Industries. Items of special interest to color workers are found on pages 20-23. On pages 26-29 are descriptions of the Multipurpose Reflectometer, Photometric Unit and Exposure Heads, Color and Color-Difference Meter, Automatic Photometric Unit, Pivotal Sphere Hazemeter, Goniophotometer, Automatic Colorimeter for Cotton, and Chromatic Porcelain Enamel Standards. On Page 28 is the Night Visibility Meter, Automatic Gloss Recorder, Large Area Colorimeter and Hellige Chromatron. On page 29 are listed the Gardner Color Standards. Various other sorts of testing apparatus are also included. Separate leaflets received describe the New 1953 Gardner Glossmeter and various other instruments for the paint and color industries.

BLUE AMULET AND LADY NOT TRUE BLUE

In this day of Queen Elizabeth II it may not be inappropriate to recall a story connected with color, with the great Elizabeth I and with a lesser woman. In 1599 Elizabeth gave proof of her faith in the Earl of Essex during hostilities between England and Ireland. After an English defeat she sent him to save Ireland from the intrigues of the King of Spain. Essex was also defeated; but he was unperturbed, because he counted on the queen's fondness for him to maintain his position at court. But the queen ordered him into confinement, and a year later released him but forbade him the court. In disgrace, Essex attempted a military coup to force the queen to change her ministers. But he was arrested; and in the subsequent inquiry, it came out that he had been in treasonable negotiations in Ireland with James VI. The fallen favorite was sentenced to death.

In prison, Essex entrusted to the Lady Nottingham the Tragic Amulet, a ring given him earlier by the queen as a pledge that whatever accusation be made against him, she would admit him to her presence to hear his defense. The amulet was a profile portrait of Elizabeth cut in sardonyx in a circlet of arabesque design having a bezel of blue enamel. Blue has often been a symbol of fidelity, as in the phrase "true blue." But the queen's lady-in-waiting, false to Essex' trust, withheld the ring. Essex went to the block believing his queen had forsworn her promise. She, on her part, awaited in vain the return of the amulet, and died two years later. She had ordered cut from her finger the ring that had wed her to the throne, and died wearing there instead a little gold band given her by Essex when they were lovers. Some twenty-odd years ago the ring was given a permanent place on the great queen's tomb in Westminster Abbey.

I.H.G.

COLOR FUNDAMENTALS

This is the title of a new book by Maitland Graves (also author of "The Art of Color and Design," which we reviewed in News Letter No. 98 Jan., 1952). The former is published by McGraw-Hill Book Co.; 206 pp, 95 illustrations, many in full color; \$10.00. Part 1 deals with the color stimulus, or light; part 2 with light modifiers, or colorants; part 3 with the physiology and psychology of color sensation; part 4 with color blindness, the effects of juxtaposition of colorants and after-images; and part 5 with color organization, the Munsell system, color scales and 100 four color schemes.

GLOSS EVALUATION

We have received an interesting summary paper, Gloss Evaluation of Materials, by Richard S. Hunter, ISCC delegate and color consultant, whose name is one of the first we think of in connection with gloss measurement. After first pointing out the different attitudes toward gloss of the physicist, the psychologist and the materials engineer, Hunter defines gloss as the degree to which a surface simulates a perfect mirror in its capacity to reflect incident light. As thus defined, "gloss" is the capacity of a surface to reflect light which is responsible for glossy appearance, not the shininess or appearance itself. The term "glossiness" is sometimes used to identify the appearance. In spite of the complication of industrial gloss ratings, technologists often express the hope that a single method of gloss measurement applicable to all materials may eventually be developed. The author points out what factors lend some encouragement to this view. He gives a table contrasting three aspects of specular or mirror reflection with diffuse reflection, connecting the former with the surface or skin of the specimen and the latter with pigment granules and cavities within the specimen. He gives a rating scale of five non-metallic and two metallic glossiness types, illustrating each

with an object in a photograph. He then gives the "actual complex picture of gloss goniophotometric curves," and eight curves. He then discusses the different types of gloss-rating scales, and tabulates various aspects of these types (specular gloss, sheen, contrast gloss, etc.). Several photographs are given to illustrate the types. Another section and table summarizes six established methods of gloss measurement, and a figure graphs numerical gloss values against qualitative differences in gloss range for several of these methods. Six of the methods are discussed in detail. The article begins with a synopsis and ends with a summary; these and the keeping of mathematical expression at a minimum make for easy reading. The article appeared in ASTM Bulletin No. 186 (Dec., 1952).

DISTRIBUTION OF NEWS LETTER MATERIAL During 1952 six News Letters were issued as usual on regular bimonthly schedule. They totaled 81 single-spaced pages, an average of 13.5 pages per issue. The distribution of material was approximately as follows:

Strictly news items	36.3 %
Reviews of current color articles	22.0
Bibliography	19.2
Feature articles on special topics	9.9
Index	3.7
Activities of the TOCA (new colors, etc.)	3.5
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