

INTER-SOCIETY COLOR COUNCIL

NEWS LETTER No. 96

SEPTEMBER, 1951

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1952 ANNUAL MEETING

The Inter-Society Color Council is preparing a well rounded program for its 1952 annual meeting to be held in the Georgian Room of the Hotel Statler in New York City, on February 7-9, 1952. The theme for this meeting is, "Color in Science, Art and Industry". The subject matter for the two days is divided between the techniques in the study of color itself, and the various uses color is put to in our time. Some of the topics to be discussed the first morning are, "The Color of Oils"; "Functional Color"; "Printing" and "Color Television". In the afternoon, Dr. Deane B. Judd will report on the ICI meeting at Stockholm; Dr. W. D. Wright and Mr. Ralph Evans respectively, will discuss Color in Relation to Vision and to Photography.

The following day such subjects will be discussed as the "Appearances of Color"; "Merchandising of Color"; "Color in the Movies"; "Colors for Interiors"; "Textiles"; "Artists Colors". In the evening, Dr. I. A. Balinkin will present a special demonstration. The conference will end February 9th with a business session in the morning. No one who recognizes the influence color has on our personal and economic life can afford to miss this conference.

Don't forget the dates: February 7 to 9, 1952.

Don't forget the place: Hotel Statler, New York City.

CALIFORNIA COLOR SOCIETY

This active group held its July meeting on Wednesday, July 25, at 7 P.M. at its usual meeting place at Art Center School, 5353 West 3rd Street, Los Angeles. The meeting was a Patio Dinner-Discussion one, this type of meeting having been requested by those who attended the Spring meeting. The discussion was a lively, informal one starting with the question: "Is there a conflict between color theory and practice?"

On August 29, the Society was scheduled to hear Mr. Rudy Haehlen speak at the same place on "Photo-Sensitive Glass." He is an authority on this subject and was expected to describe this process of reproducing color in depth and to show examples of his work.

NOMINATING
COMMITTEE
REPORT

The following slate of nominations for Officers and Counsellors of the Inter-Society Color Council for the 1952-53 term has been submitted to the Executive Committee by the Nominating Committee, M. Rea Paul, Deane

B. Judd, and Ralph M. Evans, Chairman:

For Chairman	- E. I. Stearns (AATCC and IMG)
Vice Chairman	- C. R. Conquergood (NAPIM and IMG)
Secretary	- Dorothy Nickerson (OSA and IMG)
Treasurer	- Norman Macbeth (IES)
Counsellors	- I. A. Balinkin, outgoing Chairman (ACers)
	Waldron Faulkner (AIA)
	Gladys Miller (AID)
	Proctor Thomson (AOCS)
	Frank O'Neil (AATCC and IMG)

In accord with Section 4, Article V of the Articles of Organization and Procedure, the election of officers by the voting delegates shall be by letter ballot during November, the elected officers to assume their duties on January 1 following their election. This notice in the News Letter shall serve as the notice required to be sent to all voting delegates at least thirty days before the ballots are forwarded.

Additional nominations may be made at the request of ten accredited delegates, individual members, and/or sustaining members, provided they are forwarded to the Secretary within twenty days after this notice is sent out. To be eligible for election, Officers and Counsellors shall be selected by the voting delegates from among the accredited delegates. Ballots will be mailed to voting delegates before the end of October, in order to allow thirty days before they are counted by the Executive Committee, at a date to be set in late November.

MORE ABOUT THE
NETHERLANDS
COLOR GROUP

From Mr. E. Rijgersberg, secretary of the Dutch Society for Color Study (see News Letter No. 95), we have received a 49-page bound copy of a report of the Second Color Day organized by their group. The First Color Day was devoted to the fine arts. The Second Color Day covered the three main aspects of the color problem. Dr. A. A. Kruithof discussed the physical basis of color, Prof. M. C. Colenbrander discussed color theories, color contrast, and color blindness; and Dr. B. J. Kouwer, psychologist, discussed color symbolism. Seventeen figures, many of them illustrating color demonstrations, with a full page I.C.I. (x,y)-diagram in chromatic color, are included in the report. It looks as if it had been an interesting session, but since the report is in the Dutch language, and our secretary is unable to translate it, we cannot bring you the details. If any ISCC member who reads Dutch is willing to review this report for the News Letter, please get in touch with the secretary who will be glad to forward the report for this purpose.

D.N.

COLOR VISION EXHIBIT
BY BRITISH COLOUR
GROUP

As a part of the British Physical Society's 35th exhibit of lighting and optical instruments held in the spring, the Colour Group contributed a very fine exhibit covering the history of color vision theory.

Dr. W. D. Wright was kind enough to send us the May issue of Light and Lighting which reviewed this exhibit. Because it seems such an unusually fine exhibit we quote as follows that portion of the report which concerns the color exhibit:

From the point of view of anyone interested in lighting, quite the "high spot" of the exhibition was the series of exhibits arranged by the Physical Society Colour Group to show the development of our knowledge of colour and of colour vision. It was a surprise to most visitors to find that the first item in the exhibit referred to the work of Robert Boyle, once described as "father of chemistry and uncle of the Earl of Cork," and associated forever with the gas law that bears his name. Before his time it was generally believed that the colour of a body was inherent in the body itself, but Boyle, on the basis of careful experimental work, concluded that colour was a stimulation of the eye and brain, and so he distinguished between subjective colour sensation and the objective conditions that produced it.

Next came a very attractive model of the room at Trinity College, Cambridge, where Newton carried out his famous experiments on the prismatic dispersion of white light; and close to this model his "colour circle" was shown. Goethe's theoretical speculations were noticed as an interesting digression from the main line of advance, and then came the founding of the trichromatic theory by Thomas Young and his explanation of the observations of John Dalton (the founder of the atomic theory in chemistry), who was a pronounced protanope (red-blind).

The work of J. E. Purkinje on the relative apparent brightnesses of coloured objects seen under a very weak illumination was published in 1823 and 1825, but its significance could not be fully appreciated until the development of the "duplicity theory" of vision some 40 years later as a result of the discovery of two types of receptors, the rods and cones, in the human retina. Meanwhile, a great deal of work had been carried out by a number of experimentalists on the phenomena of colour blindness and of colour mixture. The chief names associated with this work were, on the theoretical side, Grassmann, and on the experimental side, Maxwell and Helmholtz. This work culminated in the publication of the monumental "Handbook of Physiological Optics," by Helmholtz in 1869. An interesting exhibit in this section was Maxwell's original apparatus, which had been lent by the Cavendish Laboratory, Cambridge.

The discovery of visual purple by Boll was another milestone in our progress towards a fuller knowledge of the visual process; and an interesting colour photograph showed, side by side, two flasks containing solutions of visual purple, one in the unbleached condition and the other after bleaching by exposure to light. After a mention of Hering's "opponent colours" theory, the next exhibit referred to the discovery of a new type of colour defect by the third Lord Rayleigh (John Wm. Strutt) who found that certain colour defectives, although they had three-colour vision, nevertheless differed greatly from the normal observer as regards their matching of certain colours by mixtures of specified spectral components.

The work of Arthur König, much of it very careful measurement of just noticeable increments, was the next to be noted, in particular his determination of the least change of wavelength just perceptible to the normal observer at different parts of the spectrum. Then followed the long series of researches which formed the basis of colour measurement. Although the Lovibond tintometer had been invented in 1885, primarily with the object of controlling the colour of beer, trichromatic colorimetry had to await Abney's work on the additivity of luminosities, the principle which underlies all modern colorimeters and, in fact, the whole C.I.E. system of colorimetry.

Before this was fully developed, however, other so-called colour systems had been evolved, notably the Munsell system, which consisted of a number of coloured samples, or "chips" arranged and labelled on a systematic plan. Then, in chronological order came the development of convenient and rapid tests for defective colour vision, particularly the Ishihara confusion charts, in which patterns of dots of many different colours were so arranged that, while a person with normal colour vision was able to distinguish quite clearly numbers or other distinctive shapes, the colour defective was unable to do this in the case of one or more of the charts, depending on the nature of his colour defect. After an exhibit of an early form of the Ishihara charts came a description of Nettleship's work on the inheritance of defective colour vision.

The long series of determinations of the colour-mixing characteristics of the average observer with normal colour vision formed the subject of the next exhibit, with particular reference to the work of W. D. Wright at the Imperial College, and of J. Guild at the National Physical Laboratory. This work provided the necessary data for the "standard observer" adopted by the I.C.I. in 1931 as part of the international system of colorimetry. A very interesting and informative piece of demonstration apparatus shown at this stage was a C.I.E. colour triangle in which the colour at each point was simulated by means of the appropriate Lovibond tintometer glass.

The final section of the exhibit was devoted to a description of the work of Ragnar Granit on the retinal receptors and their properties and his theory of "dominators" and "modulators."

The colour group is certainly to be most warmly congratulated on the success of this attempt, apparently the first ever made, to demonstrate the various stages by which our knowledge of the most complicated subject of colour vision has been advanced. The exhibits, interesting in themselves, were given even greater appeal to the average visitor by the inclusion of photographic reproductions of portraits of those whose work was being described.

COLOR
VIGNETTE
No. 3

On movie sets in Hollywood white surfaces are frequently painted light gray when pictures in Technicolor are photographed. When these pictures later on are projected on the screen with the gray being the brightest color in the field of view, it will be perceived as white. And to that extent the same relative amount of gray will be taken out visually from every color on the screen. As a result, the saturation of all chromatic colors is markedly increased.

I.A.B.

HONORS TO C. R.
CONQUERGOOD

Mr. C. R. Conquergood, member of the ISCC since its inception, and now nominated for vice-chairman, modestly replied to our request for details about honors recently received, by sending three extremely brief paragraphs. From Mr. Herbert Livesey, secretary of the National Association of Printing Ink Makers (NAPIM), of which Mr. Conquergood has been president, replied at greater length about one of the honors. He sent our secretary a picture out of "Printing News" of July 14, with caption "'51 Award for Service to Education." On June 27th, Mr. Conquergood, president of the Canada Printing Ink Company Ltd. of Toronto, where he has for twelve years been a member of the Board of Education, was presented in New York, with the Harry J. Friedman Memorial Gold Medal for distinguished service to education in and for the Graphic Arts. The presentation was by William H. Friedman, president, Carey Press, and

chairman of the Graphic Arts Education Commission of New York. This award is the first of the fifteen annual awards to go to a Canadian.

Earlier in the year, Mr. Conquergood was awarded the "Lamp of Learning" by the Ontario Secondary School Teachers' Association. This is awarded to one not in the teaching profession but whose contribution to secondary education in the Province was ranked first for the year. The recipient of these honors has long been known to the editors for his active interest in color. Besides his two presidencies and long-time ISCC membership, he is now chairman of NAPIM's delegation to the Council. He is also editor of his company's interesting leaflet-organ, Canadaink, which has been mentioned in the News Letter. Elsewhere in this issue is an item, contributed by him.

The editors congratulate both their old friend, C. R. Conquergood and the organizations who have recognized his worth by bestowing fitting honors upon him.

DUTIES AND PRIVILEGES OF I.S.C.C. MEMBERSHIP

MEMBER BODIES: The ultimate general authority and responsibility for the policies and affairs of the Council shall be vested in the Member-Bodies, each of which shall appoint at least three but not more than ten accredited delegates who shall represent the Member-Body in all of the activities of the Inter-Society Color Council. Three of these delegates shall be designated as voting delegates. All accredited delegates shall be entitled to the privilege of holding office, of receiving all publications, of attending all meetings of the Council, and to the privilege of the floor for the purpose of engaging in the discussion of any matters, either administrative or technical, which may come before the Council, but only the three accredited delegates designated as voting delegates shall have the privilege of the ballot.

One of the delegates shall be designated by the Member-Body as the chairman of the delegation. It is the duty of this chairman to report to the Member-Body appointing him all the proceedings of the I.S.C.C. which in his opinion are of interest to the Member-Body in question, including any reports which in his opinion should appear in the publications of the Member-Body. One of the particular duties of the delegates is to bring to the Council any problems of particular interest to his Member-Body in the field of color. While all delegates should function in this manner, it is the particular duty of the chairman to see that each delegation functions efficiently to keep the closest possible relations between the I.S.C.C. and his Member-Body.

INDIVIDUAL MEMBERS: Individual members are entitled to all of the privileges of the accredited delegates except that they may not hold office. Provided individual members number more than twenty-five they may be organized into a group and designate three of their number to act in exactly the same capacity as the voting delegates of a Member-Body. Such voting delegates shall be entitled to hold office. (At present these voting delegates are Elizabeth Burris-Meyer, LeGrand H. Hardy, and Dorothy Nickerson.)

COLOR HELM

From ISCC member, Jos. P. Gaugler, of Color Helm, Inc., we have received information on this Company's new Color Helm for Interior Decorators, Model No. 43, otherwise known as the "Color Compass." A neatly designed leaflet explains that the nine new features of the model are: (1) prismatic color compass border showing scale of 80 classics of color; (2) colors shown in traditional and modern home and

office interiors; (3) commercial and institutional panels showing colors for floors, walls, draperies, blinds, ceilings, furniture and trim; (4) color coordination value scale for low, medium and high values; (5) keyed control for 12 progressive stages of harmonies and contrasts; (6) colors oriented for rooms facing north, south, east or west; (7) four sets of openings show how colors for adjoining rooms may be coordinated; (8) glossary of most generally used names for each of the 80 color classics, including nearest Ostwald and Munsell color notations; (9) individual packaged in reinforced service kit; size 20" x 20"; ready in 90 days. Item 8 is especially interesting to the News Letter editors.

This model of the well known Color Helm is presented as a single unit, all four scales being joined together for ease of manipulation. Windows reveal eighty "classics of color" within actual room interiors. Twelve sets of keys give increasing and decreasing color contrasts and blends of from two to seven variations. For minimum variations or analogous colors, the keys are set at zero. For maximum variations or pronounced contrasts, the keys are set at twelve. Between these two extremes there are ten additional positions, all at regular color intervals. There are no color chips "to be lost or misplaced." Other features are provided which may be noted in the leaflet which may be obtained from Color Helm, Inc., Ridgewood, N. J. The price in the U. S. is \$15.00 plus \$1.50 to cover shipping costs.

COLOR
VIGNETTE
No. 4

In an electrical manufacturing plant a draftsman was using a red pencil to make alterations on blue-prints. After a few hours the draftsman began to complain of eye strain. Because human eyes cannot accommodate the blue and the red light at the same time, either one or the other will be in focus. Frequent changes in accommodations for either blue or red were fatiguing physiologically, while the uncertainty of clear perception was psychologically perplexing and irritating. After the red pencil was replaced with a lemon yellow no ill effects were noticed. Using this lighter color resulted also in a better contrast.

I.A.B.

SEMINAR ON OFFICE AND
FACTORY COLOR PLANNING

A few days after our July issue had gone to press and thus too late to give our readers advance notice, we received information about this seminar, held from August 5 to August 10 at The Clearing, Ellison Bay, Wisconsin. The seminar was planned by Egbert Jacobson and Walter C. Granville, Container Corporation of America. Carl E. Foss was guest lecturer on color systems and their relation to paint.

The Clearing is a unique place for a seminar; the buildings are located on a 130 acre tract of upper Wisconsin woodland along the waters of Green Bay. Free of interrupting influences, such as the telephone, and surrounded by growing things, this setting provided an ideal environment for a freer exchange of ideas and encouraged participants to talk as well as to listen. Facilities for housing at The Clearing consisted of two dormitories; all had their meals together.

The seminar was conducted in the form of work sessions in which small groups were assigned office or factory plans for which they developed color schemes. All major factors, such as lighting, seeing task, architectural features, exposure, etc., which have a bearing on color planning, were considered. Work charts and color chips from the Color Harmony Manual were used. The plans were then compared and criticized in a discussion before the entire group. During each day there was some

formal instruction on the various bases for developing color plans and on techniques for using the Manual.

WE BEG PARDON
AND MANY THANKS
CONTRIBUTORS

Though so far no members other than our national Chairman have answered our request for Color Vignettes, we have had other contributions from several sources; and our main problem is to find room for them all. Another serious problem for the Editor is finding time even to acknowledge receipt of these. At latest count he was "serving" (not working) on 17 committees or sub-committees of scientific societies; and two years ago he went to the hospital with a "nervous breakdown" when serving on twelve, counting the editorship and the ISCC chairmanship as two. To be sure he was then also working on a book under a contract calling for completion in 1949 (still unfinished), and a condensation of it for the O.S.A.'s shortly forthcoming "Color Science." The latter, at least, has been completed as are a dozen technical papers (with four more in press). Also, being no longer Chairman, the Editor no longer has the pleasant but time-consuming duty of reading copies of the Secretary's interesting but voluminous correspondence, domestic and foreign.

But we are sure from our contacts with ISCC members that they are charitable and forgiving persons. Perhaps after the turn of the year all or most letters-to-the-editor may actually be answered, with thanks. For the present, may we have the temerity to tender our overall blanket thanks again. We have a feeling that a standard form-letter or postal "Thank you" may seem no more gracious. We are very hopeful, for in six weeks of constant tests, three doctors found nothing worse than an ambition for work outstripping ability to execute it. Your pardon, and our many thanks, contributors.

I.H.G.

NEW GARDNER
DEVELOPMENTS

With a letter received too late for our May issue, and unfortunately, neglected by the Editor in the July issue we received description of three new developments by the Henry A. Gardner Laboratory, 4723 Elm Street, Bethesda 14, Maryland. A leaflet describes the now well known Ceramic Standards for Color, Reflectance and Gloss. They are porcelain-enamel color standards for the Color-Difference Meter, Multi-purpose Reflectometer, and other tristimulus reflectometers. All are $4\frac{1}{4}" \times 4\frac{1}{4}"$ by about $5/16"$ thick, except the $3" \times 9"$ 85° sheen standards and certain special ones. The leaflet gives ICI, tristimulus, Color-Difference-Meter, and Munsell specifications of the standard set of 15, along with a few more.

A second leaflet describes the Improved Portable Glossmeters and 45°-0° Reflectometer, 1951 models. Along with photographs and diagrams is a table of applications; references to ASTM, TAPPI and other test methods, and other data when the measurement unit is that for 60° Gloss (paints, plastics, etc.), 45°-0° Reflectance (paints, etc.), 75° Gloss (paper), 85° Sheen (mat paints), 45° Gloss (ceramics) or 20° Gloss (high-gloss paints and plastics). The third leaflet deals with a nomograph for rapidly determining the gallons-content of 55-gallon drums. This was developed by M. R. Euverard of the Finishes Division of Interchemical Corporation.

THE ACTIVE
TCCA OF THE U.S.

Since we last reported on the prolific activities of our member-body, The Textile Color Card Association of the U. S., Inc., its versatile Managing Director, Margaret Hayden Rorke, has generously supplied us with 22 closely-packed pages of material dealing with the cooperative work of her association, which is in turn supported by

a large and powerful group of national organizations. Because of this volume of material and our decreasing availability of space, we shall depart from our usual custom and not detail the new colors on which advance information is furnished in each of the several textile fields. Only three pages deal with the 1951 Fall Hosiery colors, now almost old history, the remaining 19 with the official Spring 1952 colors. The June releases on the former introduced six new nylon colors.

Turning to the Spring colors, we learn that the Woolen Colors include 40 shades, including featured Water Tints (a group of pastels) and Fun-Loving Colors, shown in a new format. There are seven new "basic tone-on-tone" colors. Several violines and greens, and four neutrals. Among the Colors for Man-Made Fibers and Silk, there are featured eight new Orientiques, redolent with the romance of the Orient. In a more subtle and muted note are the Sachet Scents for Color Fragrance, eight soft flower shades. On acetate fabric are new versions of pink, mauves and violines. There are three lively greens, and four bluer ones and greenish blues. Of the grays, which are in strong favor, two new ones are Hazecloud and Promenade Gray. The Spring 1952 Color Card for Women's Gloves portrays 18 colors in glove fabric, harmoniously arranged in groups of four or five on each page. The corresponding card for Men's Felt Hat Bodies exhibits six colors, in a new format, almost miniature hats strung on a leather card. Cards have also been formulated for Shoe and Leather Colors for both men and women's shoes. The former shows 23 colors, including four "Wanderlust Colors," for smooth, grained and brushed leathers; the latter includes 33 colors, many deeper shades than those of former seasons (for smooth leathers) and also twelve colors for suede leathers. Also issued recently were five pages of detailed notes useful as a merchandising guide for the Men's, and four pages of a fashion-correlation guide for Women's Shoe and Leather Colors for Spring 1952.

This brief review fails to give an adequate picture of the manifold activities of the still-growing TCCA, under the leadership of its dynamic managing director, activities which have become world-wide in scope.

COLOR HARMONY MANUAL
COORDINATED WITH
MARTIN-SENOUR PAINTS

On July 20, 1951, the Color Standards Department of the Container Corporation notified all owners of the third edition (1948) of their Color Harmony Manual that matching interior paints for the colors of the Color Harmony Manual are now available from dealers and distributors of the Martin-Senour paint company.

These are available on flat finish paints, with approximate matches in both satin-gloss and gloss-enamel finish. They enclose a geographical list of all dealers and distributors prepared to supply paint matches to the Manual chips, also a retail price list (#501) for custom colored paints matching the chips of the Color Harmony Manual, 1948 edition.

Architects and decorators will be particularly interested in this series of custom colored paints since it provides a choice of over 1,000 color samples. The paints may be ordered by the Ostwald notations on the chips in the Manual.

Usually lines of paints are determined by a paint company, and a color card is then established to illustrate what is available. In some cases such chips are provided with a color notation that relates them to some standard system or method of color identification. For example, the Murphy Paint Company of the Interchemical Corporation provides Munsell notations for their paint chips; Devoe and Reynolds recent

sample book - - - contains both I.C.I. and Munsell notations for the color of each sample they supply in paint.^{1/} In the Martin-Senour case the process has been reversed and master formulas are developed so that any branch store with proper equipment (as in the Nu-Hue Paint Bars) is expected to supply paint to match a specified color chip in the 1943 edition of the Color Harmony Manual.

While this is not the first attempt to supply paints to match the samples of an entire color system (for the Flocheres of Los Angeles have been doing this for the more than 1000 samples that illustrate the Flochere system, which also is based on the Ostwald system) this is the first time that the coverage is nation-wide, with many local distributors. The announcement is therefore one of very unusual interest to a great many ISCC members.

In fact, this means that the Martin-Senour company has extended its major standardization program of their basic Nu-Hue Custom Color paints, since the ability to supply good matches to the customer depends not only on the careful standardization of the matching formulas but to a very considerable extent upon the degree of standardization and control at the factory of the paints to be used in mixing these formulas. (It also depends on the accurate and intelligent application of the formulas at each paint mixing station). It is exactly the sort of thing the consumer expects of a paint company, little realizing how very much he is asking for. The extra standardization involved in factory production and control in order to maintain close matches to small color differences is something the consumer should - but seldom does - expect to pay for.

No doubt all paint companies will watch with great interest this new development, for if it proves successful it will mean that it can be extended to cover matches for any series of standards for which control standards are worked out.

For those who are interested in further details, where to obtain these paints, etc., we suggest that he either write to Walter C. Granville, Color Standards Departments, Container Corporation of America, 38 South Dearborn Street, Chicago 3, Ill. or to Spencer R. Stuart, Martin-Senour Company, 2520 S. Quarry Street, Chicago 8, Ill.

D.N.

^{1/} It would be interesting if our many paint-company representatives in the ISCC would supply us, for future publication in the News Letter, brief descriptions of how their own companies solve the problem of making color information available to the consuming public, with special emphasis on the type of information available to architects, interior designers and decorators. We believe that up-to-date information of this sort would be very useful to many ISCC members who may now be familiar with only one or two such methods. This could be in the form of a letter-to-the-editor, or prepared in an item ready for publication, each such item to be signed by the contributing member.

COLOR FORETELLS THE WEATHER

From Mr. C. R. Conquergood we learned that: A new step in making Torontonians color wise was set up recently on the head office building of The Canada Life Assurance Company on University Avenue in Toronto. A steel tower is fitted with beacon lights with small signal lights to proclaim the weather for the coming day. A Green Light will indicate clear weather the next day. A steady Amber Light will tell of cloudy weather, and an intermittent Amber will promise rain. An intermittent White Light will mean a promise of light snow.

Temperature changes are designated by smaller lights below the main beacon which will light upwards for rising temperature; downwards for lower temperature and hold steady for no change. The forecasts are supplied by the meteorological service. There is no red signal, for red says "stop". Even with a red light, you couldn't stop the weather. If the weather man gets his forecasts or his signals mixed most of us are so weather conscious that we invariably read the "probs" in our papers or listen to them on the radio. Now, we will look for the signal light as well. Tossing straws into the air to see which way the wind blows or watching the sunset to forecast the weather for yourself will no longer be necessary. The color signals on the tower will tell Torontonians what to expect. The beacon will be lighted at sunset each day and be turned out at 2 a.m.

WHAT'S NEW IN SPECTROPHOTOMETRY

Last winter Dr. E. I. Stearns prepared a very useful report for presentation to a joint meeting of the Philadelphia Section of the AATCC and the Philadelphia-Wilmington Color Group: What's New in Spectrophotometry. This report has since appeared in the American Dyestuff Reporter and has been reprinted as Calco Technical Bulletin No. 820. It is such a very fine summary of current knowledge and practice in the general field of spectrophotometry, with specific reference to problems in the textile industry, that the Secretary asked if copies could be made available for ISCC distribution. Calco has been generous enough to supply the reports which you receive with this issue of the News Letter. We wish to thank them for their generosity.

D.N.

ROYAL PURPLE AND WHITE

In the September, 1948, issue of the News Letter (No. 78), pp. 7-8, we stated the connection of Phoenicia, Canaan and Palestine with purple. Canaan was a Hurrian name meaning "belonging to the land of the purple." After the 12th century B.C., when occurred the great raids of the Peoples of the Sea from further north, the Canaanites were gradually called the Phoenicians. The best known of the Sea Peoples was the Palestines (Pelestes), from whom Palestine derives its name. These countries were once regarded as parts of Syria, whose metropolis Ugarit (Ras Shamra) was an early center of the manufacture of the purple dye from the Murex shellfish found on the coast. Later the Phoenician city Tyre became a center of production of the dye, which became known as Tyrian Purple. In the earlier article, we gave the romantic legend of the discovery of the Purple. We added some notes from Marcus Aurelius of Hierapolis (200 A.D.) on guilds of "purple dippers" (purple dyers); also Plutarch's estimate of the social condition and character of dyers, and the Persian legend that Jesus was a dyer. In News Letter No. 83 (July 1949), we added some notes on "Ancient Dyeing." There red was mentioned more often than purple. But according to the interesting but now defunct magazine "Mentor," of November 1926, the Tyrian Purple was almost a blood red, that is, nearer to what we would call crimson. In fact, the Tyrians used two kinds of shells to produce the dye; and a recent authoritative small book states that wool was dyed with the Murex dye either blue or red. In N.L. No. 83, we stated that the "purple cloth," mentioned in Acts 16:40, which was sold in Lydia and prepared by guild workers at Thyatira, was probably made with "Turkey Red" from the madder root. Madder contains some compounds chemically similar to Tyrian Purple. These were also produced in the 19th century A.D. by Sir William Perkin. It is said that he prepared Tyrian purple, but paid little attention to it, since he produced a better dye by putting the bromine atoms of the purple at other points in the dye molecule.

The Mentor article states that the red robes of cardinals are reminiscent of the traditions surrounding the previous color. The Tyrian dye was extracted at such great expense that only royalty or the church could afford to use it. Each mollusk contained a drop of the precious fluid, which was secreted in a gland near the head that was opened with a needle. The nearly colorless juices produced the crimson-purple dye when exposed to the sun.

In the Song of Deborah (1125 B.C.), in which Barak put the Canaanite champion Sisera to flight (Judg. V, 30), we read: "A spoil of dyed stuffs for Sisera, a spoil of dyed stuffs embroidered, dyed and embroidered from the necks of the spoiled!" (with the usual repetitive formula). The Canaanite dyeing industry was developed long before this. But Eastern emperors restricted the practice of the purple art to a few individuals or to guilds. In Rome, the wearing of purple was a prerogative of the emperor only, with death the penalty for other wearers. Moses had been divinely instructed to use purple stuffs in the tabernacle, and for the robes of the high priest. The color was also used to bedeck pagan gods. Peculiar powers of appeasing their wrath were attributed to the color, and some vestiges of this superstition carried on through ensuing centuries.

Besides the Murex species, there was a similar sea-snail, the species *Purpura*, whose name was the Latin equivalent of purple. It was found not only in the eastern Mediterranean area but also on the coast of Ireland, where it was used in the 15th century A.D. for the decoration of women's gowns. It was said that an Englishman in the 17th century found a man on the Irish coast marking the fine linen of gentlefolk with a crimson dye extracted from a shellfish. After repeated trials, the Englishman succeeded in reproducing the royal purple, whose production had become a lost art during the late wars of the Roman empire.

It is said that in England the tradition of wearing the royal purple was flouted by King Charles I, who became known as the White King. The Druid priests prepared their victims of human sacrifice by robing them in white. This color thus came to have a sinister and unlucky significance in English tradition. From the days of King Arthur there had also been a legend that some day England would have a "White King" who would come to a tragic end. Charles, unlike all his predecessors, was adorned for his coronation in robes of white. Either he was advised to wear these by his evil genius, the Archbishop of Canterbury, or there was not enough of the royal purple cloth available. The noblemen present were so dumfounded by the white robes that they failed to join in the traditional acclamation, "God save the King." The text of the coronation sermon, by the Bishop of Carlisle, was: "I will give thee a crown of life." It was a text previously used for funeral sermons. Even the date had been selected against the advice of the royal astrologers. A few years later, the headless body of the ill-fated White King was carried to the grave; and it was said that white snow fell from what had been a clear blue sky when the funeral procession started. Thus white became confirmed as an omen of evil in England.

I.H.G.

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