

central tape exchange and this method might be worth consideration.

The Subsection expenses are a very minor consideration, for, aside from the cost of mailing program announcements, no other expense has been incurred. The parent Section advanced a sum sufficient to cover this and other incidental expense. Meeting places, projection or reproduction equipment and preparation of meeting notices have been provided by various members through the courtesy of their business connections.

We are firmly of the opinion that the

Society as a whole and its individual members have much to gain by establishment of other subsections. The time has long since passed when New York and Hollywood represented a concentration of motion picture and television activity to the exclusion of all other areas. The Society should provide some service to its members in other areas beyond the publication and distribution of its *Journal* and we are of the opinion that the organization plan we have followed provides a means toward that end. — *Paul A. Williams*, 341 Hazelwood Ave., San Francisco 12, Calif.

## Book Review

---

### Color in Business, Science and Industry

By Deane B. Judd. Published (1952) by John Wiley, 440 Fourth Ave., New York 16. 401 pp. 106 illus. 6 × 9¼ in. Price \$6.50.

Here is a most useful and valuable book by Dr. Deane B. Judd, Chief of the Colorimetry Unit of the National Bureau of Standards. During his twenty years with the Bureau he has come in contact with hundreds of industrial colorimetric problems. This book reflects his great experience along these lines as well as the many contributions which Dr. Judd has made to the science of color. It is an ambitious undertaking to attempt a book on color that would appeal to business, to science, and to industry; but through Dr. Judd's long association with all three groups he has succeeded remarkably well.

The businessman may enjoy the very readable Part I with its emphasis on the eye, the customer, and what the customer sees. He may then profit by scrutinizing the excellent introductions and summaries in each of the other sections in the remainder of the book, leaving the study of the technical details in these sections to others. However, industrial engineers and research workers in the field of color will find the entire work valuable because of the fusion of the practical problems with their theoretical aspects and the engineer-

ing or technical solutions to them. In fact, the book is mainly directed at this group, and excels any other work in telling the story of the tools and techniques available to workers in the field.

The book is divided into three parts. Basic facts pertaining to the science of color are given in Part I. Here the author explains the functioning of the eye, the characteristics and effects of abnormal vision, the methods of color matching, and the aspects of color. It is clearly shown that perception of color bridges many sciences. This is, however, treated in practical fashion as shown by the section titles: "Chemical — Pigments and Dyes," "Physical — Radiant Energy in the Spectrum," "Psychological — The Customer's Angle," and "Psychophysical — How to Predict What the Average Customer Will See."

Part II, entitled "Tools and Techniques," comprises by far the largest portion of the book. Here are set down the principles and practices for spectrophotometry, colorimetry and colorimeters, reproduction of pictures in color, color standards, uniform color scales, and color languages. Some 130 pages are devoted to these last three. He gives an unusually fine presentation with clear explanations and evaluations of available sets of color standards for specifying or matching color, such as the Munsell Book of Color, the Villalobos Colour Atlas, the Color Harmony Manual, and other systems. Color

cards or standards provided by various segments of industry such as the textile, printing ink, or paint industries, are also described. The glossary of color terms at the end of Part II will be most useful in that it collects in one place the terms and definitions for the most important color concepts used in American industry.

Part III, "The Physics and Psychophysics of Colorant Layers," thoroughly explores techniques for determining or forecasting the gloss and opacity or hiding power of colored layers. The major portion of this part is given over to the Kubelka-Munk analysis as applied to dyed textiles, paints, papers or pigmented plastics. Several mathematical tables necessary for such analytical solutions are included in the appendix which should prove useful to those interested in these materials.

There is an excellent selection of references which includes the important work in the field for those who will wish to pursue the subject further, and also a fine index.

Members of the SMPTE may be particularly interested in the section entitled "Reproductions of Pictures in Color," in which Dr. Judd outlines the general problem and also demonstrates by a practical example the use of the CIE tristimulus values and the color triangle to select practical working primaries, and thence to the determination of camera sensitivities for a typical color television system. This reviewer was particularly impressed by Dr. Judd's reasonable approach to the old question of the importance of art versus science in color reproduction. To quote:

"An important question in reproduction of pictures in color is color fidelity — how faithfully the colors of the original scene are reproduced. This is not the whole of the problem of producing pictures that the public will like. We know too little about what makes us see objects and people from the mosaic of colored patches presented to the eye from real scenes to state with confidence that a completely faithful reproduction (not yet achieved, by the way) would always look good. In fact, there are some who take the position that perfect color fidelity usually leads to poor pictures and should be avoided on purpose. They say that intentional systematic deviations from fidelity can make the picture better than the original itself. This is adding art to science. But even if you intend to try to improve on the original scene, it is a great help to have a faithful reproduction to start with. You could not get very far with intentional improvements if the basic color fidelity of the picture was so poor that it would not yield any reds, for example, in the picture, or so poor that greens in the original scene were rendered as reds in the picture. So, reasonably faithful reproduction of colors must be built into any reproduction system, even if the final aim is to improve artistically upon the original scene by intentional deviations from color fidelity."

With the increasing emphasis on color in motion pictures and television, an understanding of this concept is important.

This book is highly recommended to all interested in color and its industrial applications.—*L. M. Dearing*, Technicolor Motion Picture Corp., 6311 Romaine St., Hollywood 38, Calif.

## Journal on Microfilm

---

**Microfilm editions** of the *Journal* of the SMPTE are now available to members and subscribers from University Microfilms, Ann Arbor, Mich., which records more than 700 periodicals. *Journal* Volumes 54 and 55 (1950) are priced at \$4.15 and Volumes 56 and 57 (1951) cost \$4.00 (this is the year that the *Journal* switched to the two-column format, with a saving in pages). If there were enough demand for it, University Microfilms would make positives for the years 1941–49. The present price for such positives is about a half cent per page, but this would be reduced with a larger number of customers to share the cost of the negatives. Readers may address inquiries to University Microfilms, 313 North First St., Ann Arbor, Mich.