BOOK REVIEWS

N. G. GAYLORD, Editor

Paint Flow and Pigment Dispersion. T. C. PATTON. Interscience, New York, 1964. xii + 479. $16.50.

The paint industry is blessed by a number of people who are dedicated to the task of changing its technology from an art to a science. Temple Patton must be counted in this group.

His new book hinges on rheology as the science, but his discussion goes deeply into formulation, manufacture, and control of coatings. It will inevitably be a best seller among paint chemists. It should also be required reading for all rheologists, no matter how theoretical or specialized their interests, for its pragmatic approach is bound to broaden their interests and increase their appreciation for their specialty.

While the book was not designed as a text, its format reveals the pedagogical background of its author, and it could serve as the mainstay of an advanced course in paint technology. The objective was "to avoid either a highly theoretical or a 'cook-book' type of treatment," and the course between the Scylla and Charybdis has been carefully steered. The fundamental rheology equations are all there and the ideas behind them are clearly explained. They are embellished by numerous derivatives having special application to the coatings industry. A plethora of nomographs and over one hundred worked out problems attest to the practicality of the book.

Chapter 1 opens with a discussion of the elementary concept of viscosity and expands into the theoretical aspects of rheology. One of the most useful charts correlates the vernacular ("tacky, buttery, long, short, etc.") of the paint trade with rheological phenomena. The next two chapters develop the theory of rheological measurement. Twelve types of viscometers are discussed, and while the multiplicity is deplored, it is pointed out that paint problems existed long before rheology became a science, inevitably resulting in empirical attacks. Chapters 5, 16, and 17 consider specific problems such as brushing, leveling, flooding, orange peel, etc.

Chapters 4, 5, 7, 8, and 13 constitute a nucleus of paint formulating information. Control of viscosity, brushing, leveling, sagging, settling, etc. are discussed in detail. Dispersion theory and practice as well as solubility and solvent selection are treated with stimulating erudition.

A third group of chapters (6, 8–12, and 14) covers the aspects of rheology concerned with manufacturing. The theoretical background and proper operation of pebble mills, sand grinders, high speed mixers, and other dispersing equipment are considered in detail. Dispersion theory and problems involved in "let-down" (mixing highly pigmented dispersions with additional vehicle) are elucidated.

Not often can a book be recommended without equivocation. This one can.

Harry Burrell

Interchemical Corporation
Finishes Division
Clifton, New Jersey