odology and usually a summary. An index of all authors cited is included with each chapter in addition to the alphabetical list of all authors at the end of the volume.

In summary, it may be said that this book, and hopefully the forthcoming volumes in the series, is a valuable contribution to the literature armamentarium of lipid methodology. In its present form it is perhaps of more value to specific industrial research laboratories than to research groups working on the role of fats in health or in the training of graduate students. It is my present impression that only three or four of the chapters would be recommended to graduate students for general reading. This is not intended to detract in any way from the value of certain of the chapters to highly specific research groups. As a matter of fact, it would perhaps have been better not to include so many spectra of interest in fat research in one volume. Thus, it would be difficult to secure a reviewer competent to critically evaluate all of these chapters, a task that I certainly am not attempting to do.

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Weyl Colloquium

Solutions Métal-Ammoniac. Propriétés physicochimiques. G. Lepoutre and M. J. Sienko, Eds. Université Catholique, Lille, France, 1964 (order from Benjamin, New York). 320 pp. Illus. $10.50.

This volume contains the papers presented at a colloquium held in June 1963, at Lille, France, to commemorate the 100th anniversary of Weyl's discovery of the solubility of alkali metals in liquid ammonia. Charles A. Kraus, who probably contributed more to the subject than any other single individual, provided a forward and M. C. R. Symons, an orienting introduction. The topics covered and the contributors are as follows.

"On the coexistence of liquid phases in metal-ammonia systems; and some surface tension studies on these solutions above their consolute points" (M. J. Sienko); "The mechanical properties of metal-ammonia solutions" (R. Catterall); "On the volume expansion accompanying the formation of dilute solutions of sodium and potassium in liquid ammonia at −45°C" (C. W. Orgeel, A. M. Filbert, and E. C. Evers); "Heat of solution and volume studies of metal-ammonia solutions" (S. R. Gunn); "Propriétés thermodynamiques des solutions métal-ammoniac" (C. Moreau); "Activités du sodium en solution dans l'ammoniac liquide" (J. L. Dye, G. Lepoutre, P. R. Marshall, and P. Pajot); "Activities and equilibria in alkali metal-ammonia solutions" (P. R. Marshall); "Electrical conductivities of sodium-ammonia solutions" (S. Naiditch); "Electrochemical properties of metal-ammonia solutions: e.m.f. and transference numbers" (J. L. Dye); "Electrochemical properties of metal-ammonia solutions: conductance and thermoelectric properties" (D. S. Berns); "Calculation of conductivity in sodium-liquid ammonia solutions" (E. Arnold and A. Patterson); "The reaction of adsorbed water with a dilute solution of sodium in liquid ammonia at −78°C." (I. Warshawsky); "The absorption spectra of metal-ammonia solutions (with an addendum on the calcium-ammonia phase diagram)" (W. L. Jolly, C. J. Hallada, and M. Gold); "Spectres d'adsorption et cinétique de décomposition des solutions potassium-ammoniac à température ambiante" (J. Corset and G. Lepoutre); "Nuclear and electron resonance spectra and optical reflection spectra of metal-ammonia solutions" (K. S. Pitzer); "Cellule de conductance sans électrodes; cinétique de décomposition des solutions métal-ammoniac" (P. Pajot, A. Demortier, and G. Lepoutre); "Proton and nitrogen Knight shifts in sodium-ammonia solutions" (T. R. Hughes, Jr.); "Nuclear magnetic resonance of Li^7, Na^{23}, Rb^{87}, Cs^{133}, and N^{14} in alkali metal ammonia solutions" (D. E. O'Reilly); "Theories and models of electron binding in solution" (J. Jortner, S. A. Rice, and E. G. Wilson); "The effect of added elecyrolytes on the electron spin resonance absorption of solutions of the alkali metals in liquid ammonia" (R. Catterall and M. C. R. Symons); "Electron trapping centers in metal-ammonia solutions" (E. Arnold and A. Patterson, Jr.); "Theory of a solvation model for the alkali metal-ammonia solutions" (L. Paoloni); "On the electron spin density distribution in the Na-NH_3 system" (J. V. Acrivos); and "Transport processes in concentrated metal-ammonia solutions" (J. C. Thompson).

In general, these reviews are authoritative, comprehensive, and adequately documented. Accordingly, this volume is and will continue to be a valuable source of information for both the specialist and the uninitiated. Either directly or by inference, all of the various models that have been proposed to account for the unusual properties of metal-ammonia solutions are examined critically.

The Weyl Colloquium was deliberately restricted to consideration of physical properties of metal-ammonia solutions; perhaps this was a wise decision. It seems noteworthy that the vast amount of effort devoted to the study of the physical properties of these systems has resulted in little that is useful in interpreting the chemical reactions in which these solutions participate.

The many typographical errors in this volume are unlikely to be a source of satisfaction to either the editors or the publisher.

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Chemical Technology

The Cyanine Dyes and Related Compounds. Frances M. Hamer. Interscience (Wiley), New York, 1964. xxxiv + 790 pp. Illus. $45.

Frances M. Hamer, the author of this specialized treatise, has long been recognized as an authority in the field of cyanine dyes, and much of the work that he describes here is his own work or is work based on his developments. Hamer's work provides a bridge between the early work of Pope and Mills (1917) and the work today in the photographic industries.

The principal use of cyanine dyes has been in the selective color sensitization of photosensitive materials. One is, of course, concerned with the wavelength limits of sensitization and the selective absorption of the dye itself. Booker and others have published extensive data on the absorption spectra of these dyes, and it therefore seems strange to find only two figures with a total of six spectra in the book. Not only are absorption spectra omit-