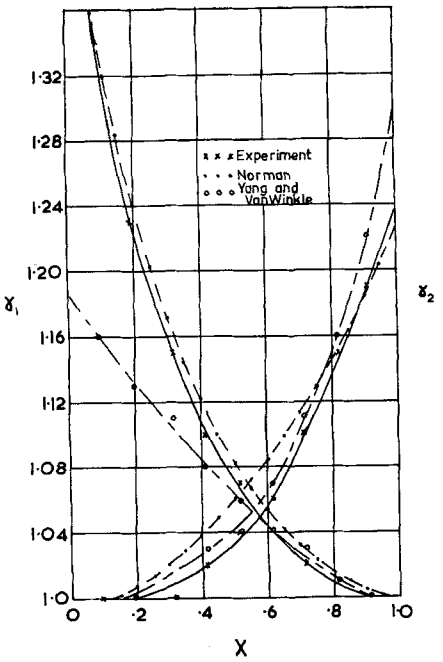

Fig. 5. Activity coefficient vs. composition for n-octane-ethylbenzene at 200 mm. mercury.

mate the change in activity coefficient with composition according to Equations (4) and (5). Yang and Van Winkle reported that their data could not be fitted satisfactorily with the Redlich and Kister equation but could be fitted with the Van Laar equation. Figures 3 to 6 show that the agreement of their smoothed values, using the Van Laar equation, with the experimental values is only valid for the high concentration region, while the discrepancy at low concentrations becomes greater with decreasing pressure. On the other hand, the same figures show how a better representation of the data may be obtained with the procedure outlined in this paper.

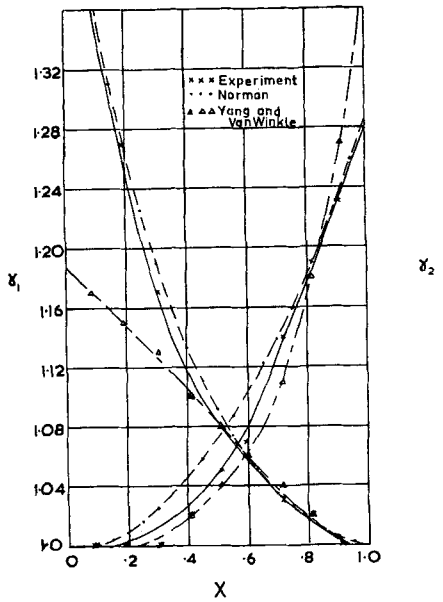

Fig. 6. Activity coefficient vs. composition for n-octane-ethylbenzene at 50 mm. mercury.

Atmospheric Pollution—Its Origin and Prevention, Third Revised Edition, A. R. Meetham, in collaboration with D. W. Bottom and S. Clayton, McMillan, New York, (1964). 301 pages. $10.00.

Like the previous editions, the third edition of Meetham's book deals solely with air pollution in Great Britain. Inasmuch as the serious problem there is pollution from the burning of fuel, attention is directed almost entirely to smoke, SO_2, and ash.

The first half of the book is devoted to descriptive matter on fuels, boilers, industrial furnaces, and domestic services. Treatment is similar to that in elementary texts in heat and power, fuels and combustion, and industrial technology. Most of the chapters have been largely rewritten for the third edition. Emphasis is still on solid fuels, but some material on liquid fuels has been added.

The last half of the book deals with atmospheric pollution in England, its nature, extent, measurement, distribution, effects, and prevention. To me the most interesting chapter was one called "Changes in Pollution," perhaps because of the opening sentence: "The study of atmospheric pollution is admittedly an untidy science." At any rate, the chapter tells of changes in pollution levels as affected by weather variables. The treatment is thorough, easily understandable, and fits air pollution problems everywhere. On the other hand, the chapter on "Prevention" deals only with British practice and is of little value to American engineers.

A completely new chapter on air pollution laws has been added, and contains an excellent discussion on Britain's Clean Air Act, the Alkali Acts, and the Road Traffic Act, together with suggestions for further action. One which intrigued me is: "In particular action is needed regarding low exhaust pipes on vehicles which discharge into houses and shops in narrow streets and into the perambulators of young children."

There is some discussion of legislation in other major countries. There are a few errors such as crediting the Model Smoke Ordinance to the American Society of Chemical Engineers, but in general the discussion is succinct and factual.

The book as a whole is well written and marred only by a few misconceptions such as the statement that the most probable cause of death in the Donora incident was sulfur dioxide. Printing and binding are professionally done, and the price is reasonable.

Those interested in British practice in air pollution matters will find the third revised edition a useful reference.

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Review of Thermodynamics of Irreversible Processes, Pierre Van Rysselberghe, Blaisdell Publishing Company, New York, Toronto and London (1964). 165 pages. $6.50.

In his introduction the author presents this book as a set of lecture notes intended for intermediate-level students in different disciplines where the techniques of irreversible thermodynamics are useful. It is a short book of only 165 pages and is organized in a manner that will be helpful to a student using it as a textbook. The first chapter reviews some basic concepts and definitions in thermodynamics. Succeeding chapters, by specific examples or applications, build and apply the techniques of irreversible thermodynamics. Physical mixing, chemical reactions, electrochemical reactions, and transport processes are treated in the building process. Later chapters deal with thermoelectricity, steady state, viscous flow, and thermodynamic time.

The book is written in a lucid but terse style. As an introductory textbook its style and organization recommend it. However, the treatment is such that both the generality and limitations on defining fluxes and forces and applying the reciprocal relations are obscured. Since these topics are of primary importance to the subject, the reviewer believes that even an introductory text should give some discussion of them per se.

Properly, the author has not duplicated material that is available in reference books on the subject. This book is clearly not intended as a reference on the subject, but even readers well versed in the field may find Van Rysselberghe's treatment interesting. Certainly, anyone teaching the subject will want to consider this book as a possible class text.

The book is notably free of misprints or errors. The type is relatively poor and the printing only fair.

David Hansen
Rensselaer Polytechnic Institute

ERRATUM

In the September issue one of the authors, C. A. Eckert, of the paper "Statistical Surface Thermodynamics of Simple Liquid Mixtures" (page 677) was incorrectly listed as being affiliated with the Cryogenic Engineering Laboratory, Boulder, Colorado. At the time that the work reported in the paper was performed, Dr. Eckert was affiliated with the University of California, where the work was done. The project was supported in part by the Cryogenic Engineering Laboratory of the National Bureau of Standards.