

BOOK REVIEW

RADIOACTIVE TRACERS IN CHEMISTRY AND INDUSTRY. By Pascaline Daudel. Translated into English by U. Eisner. Pp. x + 210 (including index). Charles Griffin and Company Ltd., London, 1960. 36s.

There is a wealth of information to be found in Mme. Daubel's book and it should be read by all who are interested in radiochemical techniques.

There are five chapters, the first of which deals with General Principles. It describes in detail the preparation of radioelements by the Szilard-Chalmers effect. It goes on to describe methods by which a labelled molecule can be prepared by total synthesis, irradiation, or by exchange reactions. The chapter closes with a brief account of the methods used to detect and measure radiation. In the opinion of the reviewer this should be augmented or left out altogether, in future editions.

The application of tracer techniques to the study of reaction mechanisms is given in chapter two. Numerous examples are described and these will be of value to the organic and inorganic chemist alike. Typical of these is the use of ^{128}I to study the reaction between potassium periodate and labelled potassium iodide. The potassium iodate formed in this reaction was found to be completely inactive and must have been derived from the periodate. Only by the use of tracers could this mechanism be shown. Many organic examples are described and typical of these is the work of Dauben and others on a study of the mechanism of the Willgerodt reaction. The chapter is concluded by nine pages of references to original work.

A typical exchange reaction—the Walden inversion is described in the next chapter. This is concerned with the application of tracers to a study of exchange reactions; but it is marred by an excessive number of references, there are 23 pages of them compared with 22 pages of text.

The description of the use of tracer techniques in chemical analysis is extremely valuable. But as with all chapters in this book the maximum benefit will be derived if the reader has an elementary knowledge of radiochemistry since in one or two places terms are used without explanation, for example the reference to the Compton compensating device, on page 113.

Chapter 5, the last chapter, has been written by Dr. N. Robinson. This describes the application of tracers to industrial problems.

There are very few misprints; the type and diagrams are clear but the book is rather expensive for its size (36s.).

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