graphs on Analytical Chemistry. The material is organized into two short introductory chapters, a long one on "Radiometric Titrations Based on Precipitate Formation" (87 pages), and two on titrations based on complex formation and on redox reactions. As pointed out by Prof. Alimarin in the Preface, the 91 illustrations are informative and of good quality, and the listing of applications in tables at the ends of two chapters is very convenient. An appendix consists of a periodic table showing the 41 elements which have been titrated radiometrically. The 170-plus references cover the pre-1965 literature thoroughly, and, though they contain some errors, these are not such as to cause serious inconvenience.

Radiometric titrations may be classified as follows, according to which component is radioactive: (1) titrand, (2) titrant, (3) both, or (4) indicator. The authors emphasize that a phase separation is necessary, and this is accomplished by precipitate formation or dissolution, solvent extraction, or ion exchange. Methods used for separation of precipitates are filtration, centrifugation, and flotation. Coulometric generation of the titrant has sometimes been used, for example in the titration of iodide with Ag^+ from a tagged-silver anode. In addition to the usual direct measurement of beta and gamma activity, the radiometric techniques include backscatter and absorption of beta radiation. Examples of techniques involving complexes include titration of a labelled metal with a complexing agent, with the complex being extracted into an organic solvent, and use of an indicator which extracts or dissolves when the titrand has been consumed. A novel example of a dissolving indicator is a "kryptonate," a solid containing ^{85}Kr, released by excess titrant. Redox titrations are exemplified by some in which the oxidized titrand or titrant is extracted, and others in which a dissolving indicator is used.

Little information on precision and accuracy is given. A statement is made in introductory chapter 2 to the effect that in precipitation titrations of about 1 mg, the "error is generally ±3 to 4%," while in dithizone titrations, "errors are less than ±1% when μg amounts of substances are determined." Lack of information on accuracy is no doubt related to the limited application of the method in routine analysis, which, in turn, is caused in part by the manipulations required and by chemists' reluctance to use radioisotopes unless strongly motivated. Importance of both these factors might be lessened by automation, but progress in this area is slow.

The authors of the present work have taken a conservative attitude about the importance of the field, unlike most authors. Thus, in the Introduction they say, "It was apparent . . . that the statements emphasizing the importance of radiometric titrations (*11*) were, at that time, not completely justified . . . we are correct in stating that the results attained so far . . . are promising." The reference is a review article on tracers in analysis [S. A. Reynolds, G. W. Leddicotte, *Nucleonics* **21**(8), 128–142 (1963)], which contained 100-odd words on radiometric titrations. Obviously, the authors are making an indirect reference to one or more of the papers cited in the review. One must agree with the conservative appraisal, especially in consideration of the advances in other types of titration reported at the recent Summer Symposium. This does not mean that the monograph is without value. Radiometric techniques will be used where they are clearly superior to others, or when an investigator or an establishment favors them, and this book will be found valuable for such uses.