

## BOOK REVIEW

Radio-chromatography. The Chromatography and Electrophoresis of Radiolabelled Compounds. T.R. Roberts.

\$39.95

184 pages

1978

This volume is aimed to describe and discuss the various radio-chromatographic and radio-electrophoretic methods.

Following a short introduction and a preliminary illustration of the radioactivity detectors, individual chapters are devoted to radio-paper chromatography, radio-thin-layer chromatography, radio-electrophoresis, radio-column chromatography and radio-gas-liquid chromatography. A short survey of miscellaneous applications, a list of major manufacturers of instruments, and a useful, if rather concise, subject index are included.

The volume is well produced, richly illustrated and remarkably free from errors. Obviously, in a volume of this size (174 + X pages), the coverage of the literature, which extends to 1977, cannot be comprehensive, in view of the rapidly increasing number of specialized techniques and applications. It appears that special attention has been devoted to the metabolism of pesticides in plants and soils, perhaps reflecting the personal background of the author, and, to a minor extent, to biochemical studies and pesticide residues analysis. Significant applications of radio-chromatography to organic chemistry, e.g. to kinetic and mechanistic studies, to hot-atom chemistry, radiopharmaceuticals production and nuclear medicine appear to be largely outside the scope of the volume.

The chapters dealing with specific radio-chromatographic techniques are variable in quality and coverage. As an example, the sections dealing with radio-column chromatography and radio

electrophoresis are fairly complete and well balanced. On the other hand, the curious disregard of ionization chambers, barely mentioned in the introductory survey of detectors, is regrettably reflected in the chapter dealing with radio-gas-liquid chromatography, where use of ionization chambers is conspicuously ignored, despite its considerable historical and practical interest.

The specialized ancillary techniques specifically or originally developed for use with ionization chambers, e.g. combustion methods and interrupted elution are mentioned only if applied or adapted to proportional or scintillation counting.

From a general standpoint, it is regrettable that the volume lacks a detailed account of isotopic discrimination effects in chromatography, of the highly effective chromatographic methods for isotopic separation and, perhaps most seriously, of those specialized and sophisticated techniques for the chromatography of molecules labelled with short-lived isotopes that nowadays are vital in nuclear medicine and radiopharmaceuticals production.

As a whole, it appears that only a few chapters of the volume compare favourably with the specialized reviews on specific radio chromatographic techniques that are currently available in many Journals devoted to chromatography.<sup>1</sup>

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1) See for instance: M. Matucha and E. Smolkova, "Gas Chromatography of <sup>3</sup>H- and <sup>14</sup>C-labelled compounds", J. of Chromatog., 127 (1976), 163-201, with over 400 references.