

nitrogen transport and metabolism in plants. Unfortunately, it was omitted from chapter V.

The second section deals with analysis of carbon, nitrogen and oxygen in different materials by use of nuclear techniques. A survey of radiochemical methods for analysis of these three elements in various matrices is included with their literature citations.

For a small book of this type, the amount of information reported is sizeable and very useful. As reported by the authors, some important references may have been unintentionally omitted. The increasing applications of short-lived isotopes of carbon and nitrogen in agricultural research, for example, could have been a significant addition.

**References:** 1. Fares Y, DeMichele DW, Goeschl JD, Baltuskonis DA. Continuously produced, high specific activity,  $^{14}\text{C}$  for studies of photosynthesis, transport and metabolism. *J Appl Rad Isot* 1978; 29: 431-441; 2. Skokut TA, Wolk CP, Thomas J, Meeks JC, Shaffer PW, Chen WS. Initial organic products of assimilation of [ $^{15}\text{N}$ ] nitrate by tobacco cells cultured on different sources of nitrogen. *Plant Physiol* 1978; 62: 299-304; 3. Fares Y, Goeschi JD, Magnuson CE, Strain BR, Nelson CE, and Sadek HM. Use of short-lived isotopes in the study of xenobiotic transport. IUPAC Pesticide Chemistry, Human Welfare and the Environment. Miyamoto J, et al., eds., New York: Pergamon Press, 1983; 4. Lee RB, Drew MC. Nitrogen-13 studies of nitrate fluxes in barley roots. 2. Effect of plant N-status on the kinetic parameters of nitrate influx. *J Exp Bot* 1986; 37: 1768-1779.

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#### DIAGNOSTIC AND INVESTIGATIONAL USES OF RADIOLABELED BLOOD ELEMENTS

RJ Davey, ME Wallace, Eds. *American Association of Blood Banks, 1987, \$22.00*

This relatively short text (118 small pages) is one of a series of topical works developed from technical workshops of the American Association of Blood Banks. Its stated goal is to orient the reader to radiation biology and the broad field of radionuclide uses in transfusion medicine.

The book is divided into four major chapters; starting with fundamentals of radiolabeling and followed by one chapter each on red cell, platelet, and white cell techniques. Each chapter is subdivided into several subsections with a summary and pertinent references.

With respect to the editors' goal of presenting the basics and the details of radiolabeling processes of blood cells, they have succeeded well. The chapters on RBC, WBC, and platelet labeling proceed rapidly from generalities to details of techniques. These chapters are useful for persons actively involved in labeling one or more of these cell types, but are a bit much for the reader seeking only a general overview. This attention to detail is intentional and a reflection of the workshop origin of the book.

The clinical applications of cell labeling are appropriately directed more at blood bank scientists and clinicians rather than the general nuclear medicine physician who uses cell labeling in everyday imaging/kinetic procedures. This is par-

ticularly true for red blood cells. Nonetheless, clinicians who wish to experiment with new methods will be well served by the discussion and the references in each chapter. Historical data have been covered, and the reference lists help to point out why (from a scientific literature standpoint) certain accepted procedures are followed.

In contrast to the specific chapters on cell labeling, the initial chapter which deals with general principles of radiation is very disappointing. For the person totally unfamiliar with radiation physics, this section is inadequate. For example, a simplistic atomic model is portrayed without qualification as the physical arrangement of nuclear and orbital particles. Definitions of such terms as "isotopes" may not be clear to the novice, and differentiation between radiochemicals and radiopharmaceuticals is unclear or erroneous in some of its details. The chapter and the book as a whole has its greatest failing as a general text in the inaccuracy of its statements regarding imaging and clinical radiation detectors. A number of dogmatic and only partially true statements are made. Descriptions of detection devices are again inadequate for the novice and will cause the expert some difficulty due to over-generalization.

In summary, this book is a valuable tool for persons interested in cell labeling techniques and certain specific clinical and research applications of these labeled cells. It is a poor choice however for any level of training in the basic scientific aspects of in vivo radioisotope procedures.

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#### Books Received

**Avulsion and Stress Injuries of the Musculoskeletal System.** J. Teheranzadeh, A. Serafini, M.J. Pais. Basel, Switzerland, S. Karger AG. 1989, 125 pp. \$52.75

**Neuroimaging II.** F. Aichner, F. Gerstenbrand, N. Grcevic, Eds. New York, New York, Gustav Fischer Verlag. 1989, 322 pp. \$96.00

**NCRP Report No. 101, Exposure of the U.S. Population from Occupational Radiation.** Bethesda, Maryland, National Council on Radiation Protection and Measurements. 1989, 106 pp. \$15.00

**Dynamic Functional Studies in Nuclear Medicine in Developing Countries.** *Proceedings of an International Symposium on Applications of Dynamic Functional Studies in Nuclear Medicine in Developing Countries.* Vienna, Austria, International Atomic Energy Agency. 1989, 584 pp

**Tomographic Methods in Nuclear Medicine: Physical Principles, Instruments, and Clinical Applications.** B.D. Ahluwalia. Boca Raton, Florida, CRC Press, Inc., 1989, 234 pp, \$124.05

**Magnetic Resonance of Myelin, Myelination, and Myelin Disorders.** J. Valk, M.S. van der Knaap, New York, New York, Springer-Verlag. 1989, 390 pp. \$199.00