to be the main practical application of their course work. Green's functions are de-emphasized.

One dubious point concerns the vector potential: $q\mathbf{A}/c$ is interpreted as part of the field momentum when a static particle is present in a static electromagnetic field. This interpretation is supposed to give a physical meaning to the vector potential, and since much is made of the point, a reviewer's scepticism is perhaps relevant. In the first place, only the Coulomb gauge vector potential is related to the field momentum. Secondly, when the particle moves, $q\Delta\mathbf{A}/c$ cannot be mapped along its trajectory by finding the impulse delivered to the particle, as Eq. (5.6) shows. This is in sharp contrast to $q\Delta\phi$, which is gauge invariant and can be mapped by finding the energy delivered to the particle. The scalar potential is physical because there is an operational procedure to measure it with a test particle.

This quibble aside, Konopinski has written a valuable book, with an organization well worth trying in the classroom.

JOHN B. BRONZAN
Rutgers

The Uranium People

L. M. Libby
351 pp. Crane, Russak, New York, 1979.
$15.95

Reading *The Uranium People* is a little like going to the home of an aging lady to see interesting slides from her youth. Some of the slides are out of order, some are difficult to focus, for some she has forgotten exactly the where or the when. The general effect, though, is not unpleasant even while it may be occasionally confused.

Leona Marshall Libby, author of *The Uranium People*, is not, however, your run-of-the-mill aging lady. Libby became a professional scientist when women were not encouraged to enter the field (in fact, James Franck actively discouraged her). She was a member of the Chicago group that succeeded in making the historic first chain reaction. She has been a colleague and friend of almost everybody associated with the US effort to make atomic and hydrogen bombs. Her book is a collection of personality profiles and anecdotes. Here are Enrico Fermi, Edward Teller, Arthur Compton, Luis Alvarez, Edward Condon, among others. Such recollections are precious when a Who's Who of what has been euphemistically called the Defense Effort is fast becoming a Who Was Who.

Particularly valuable are Libby's memories of the Fermis. She worked with Enrico Fermi on the pile in Chicago, visited with him at Hanford and Los Alamos. Fermi was ever gallant with the ladies, and Libby was not only smart, she was good-looking as well. Enrico and Laura Fermi were extraordinarily hospitable to young people. It meant a great deal to junior colleagues to go to a party at the Fermis, and there were a lot of parties. Libby's stories about Enrico Fermi, almost a god to the physicists around him, stress his pragmatism and his humor. A remarkable teacher, he had some remarkable pupils and was, in large part, responsible for the heyday of physics at the University of Chicago immediately after World War II. Social scientists, analyzing that elusive quality, "creativity," could glean much from this book.

There is not an unkind word in the book except possibly for Klaus Fuchs, who gave information to the Soviets. Libby likes her entire cast of characters, even if in life they didn't much like one another. She likes Robert Oppenheimer; she likes Edward Teller. She likes nuclear bomb research. It is, however, somewhat surprising that her editor didn't correct her many small factual errors. It was Marlene Dietrich, not Greta Garbo, whose legs and singing were enviable; alcoholic beverages were not rationed during World War II, just hard to get; Los Alamos wives could always go on shopping trips to Santa Fe, although not much farther. But it is a sobering thought about the passage of time that perhaps no editor nowadays is old enough to remember such trivia.

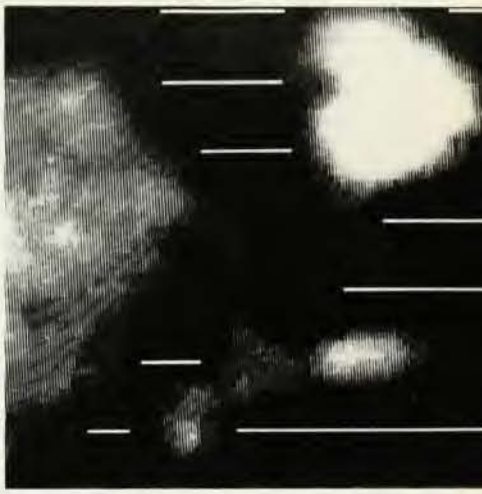
JANE S. WILSON
Ithaca, New York

Physics in Nuclear Medicine

J. A. Sorenson, M. E. Phelps
419 pp. Grune & Stratton, New York, 1980.
$39.50.

Physics in Nuclear Medicine provides an entirely adequate textbook for nonphysicist workers in this rapidly growing and important field, an excellent beginning text for radiological physicists and a useful collection of basic concepts for all. The book should be of particular value in the growing number of academic programs aimed at training medical and physical personnel in radiology and nuclear medicine.

The first three chapters treat elementary atomic and nuclear physics: atomic physics to the Born atom, and nuclear physics in simple descriptive form. Modes of radioactive decay are particularly well presented for a book of this type. The authors present copious details on exponential decay and on multiexponential decay and curve stripping. The examples are particularly useful in this area. To cite one case, I would guess that most workers would have to doodle for a few minutes to come up with the carrier-free specific



A scan of heart, liver and pancreas taken by a positron emission tomograph, an apparatus with which *Physics and Nuclear Medicine* is concerned. The brightness indicates the amount of N^{13} presence—originally administered as N^{13} L-glutamate—in an organ. (Photograph courtesy Memorial Sloan-Kettering Cancer Center.)

activities of I^{131} and Tc^{99m}.

Chapters 4, 5 and 6 are clear presentations of radiation detection, electronic instrumentation and counting statistics. Classical detectors are well covered while solid-state detectors receive brief mention. The important topic of counting statistics is well presented. The authors devote adequate detail to production of radionuclides but treat the interaction of radiation with matter superficially. The remainder of the book contains a potpourri of topics, including radiation dosimetry, pulse-height spectrometry, counting systems, radiation safety, and health physics. Radiation dosimetry is well presented as is material on the gamma camera. However, the general coverage of imaging systems is not entirely satisfactory. In particular, the material on emission tomography is disappointing, particularly considering the prominent role of one of the authors in this field. However, a thorough presentation might well take another volume.

Altogether, the book is carefully prepared and well organized. It is a pleasure to read.

GORDON L. BROWNELL
Massachusetts General Hospital

The Tunnel Effect in Chemistry

R. P. Bell
222 pp. Chapman and Hall, London, 1980.
$39.95

Convincing evidence for the presence of quantum mechanical tunneling was for many years a kind of "Loch Ness mon-