example, the index contains many errors, spelling is inconsistent, typographical errors are common, nomenclature is sometimes nonstandard, some formulas are incorrectly defined and errors in the translation result in confusing, even amusing, nonsense.

These are not minor annoyances. They should be corrected, and soon. I hope that a technically revised edition—a good translation and an error-free printing—will be published soon so that the scientific community may enjoy this excellent textbook, which covers an extensive and mature field in such a conceptually clear and appealing fashion.

The Experimental Foundations of Particle Physics

Robert N. Cahn and Gerson Goldhaber
Cambridge U. P., New York, 1989. 429 pp. $49.50 hc
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Physics is undeniably an experimental science. Still, that side of its history is all too often neglected. This is particularly true for particle physics, where progress in theory is accepted as the rationale for the whole research effort. In any event, theory provides a tidy framework on which to hang a story.

In this volume, Robert N. Cahn and Gerson Goldhaber try to set the record straight in a collection of some sixty or so experimental papers, spanning the half-century from the discovery of the neutron to that of the $W^{\pm}$. The papers are grouped in 12 chapters, each of which includes a brief explanatory text written by Cahn and Goldhaber. The organization follows experimental topics, such as the pion–muon problem and jet structure in high-energy annihilations, rather than theoretical issues.

Exercises are provided in an effort to make this a textbook suitable for advanced undergraduate or introductory graduate courses. Unfortunately, the explanatory material is too brief to serve as an adequate stand-alone text for a true novice in the field. The authors freely admit this and suggest D. H. Perkins's *Introduction to High Energy Physics* (Addison-Wesley, Menlo Park, Calif., 1987) as a companion text.

What material there is, however, is mostly well written. The treatment of the subtle and elegant experiment that established the helicity of the neutrino, the work of Maurice Goldhaber (brother of one of the authors), Lee Grodzins and A. W. Sunyar, is an exemplar of clear but economical prose. The paper itself offers the student a laudable lesson in what can sometimes be done with a minimum of equipment and a maximum of imagination.

But there is little room in this sparse rendition to portray the full historical context of every experiment. Younger readers can scarcely imagine the difficulties overcome by Marcello Conversi, Ettore Pancini and Oreste Piccioni to demonstrate that the muon could not be Yukawa's strongly interacting "mesotron," while World War II raged about them.

From a pedagogical standpoint, it is obviously easier to teach particle physics from the secure anchor of contemporary theory. But an experimental chronicle built on the original papers may help to build perspective, not only for fledgling experimenters but for would-be theorists as well. It can be useful to learn that great discoveries often meant something quite different in their own time than they do today.

It is easy to criticize any anthology for its selections, a temptation that I

will try hard to resist. Cahn and Goldhaber can hardly be faulted for what they have chosen to include: Every paper is historically significant. Anyone who has worked in the field could offer dozens of additional candidates, but given the constraints of keeping the volume to a manageable length, it is hard to imagine what could have been cut to make room for them. In any event, each chapter provides an extensive bibliography that covers the most significant omissions.

Hadron spectroscopy is represented in nine papers. Although this may seem like a large fraction of the total, it does not begin to portray the extent to which this topic dominated particle physics in the 1960s. At the other extreme, four papers can only hint at the full richness of the neutral kaon system and the crucial role it has played at several junctures in the history of the field, though the accompanying text makes up for some of the omissions.

Any short history is necessarily sanitized history. Thus in this volume there is no split A_2, no high-y anomaly or any of the other blind alleys, irrelevancies and embarrassments that haunt the history of an experimental discipline. It might have been nice to include just one of these, if only as a lesson in humility.

In summary, this could be a useful book for many categories of readers. There is something here for the student new to the field, the veteran old enough to have read most of the papers when they originally appeared and the historian looking for a starting point for more comprehensive research.

ROBERT H. MARCH
University of Wisconsin

Physics of Medical Imaging

Edited by S. W. Webb
Adam Hilger, Bristol, UK (AIP, New York), 1988. 633 pp. $176.00 hc ISBN 0-85274-361-0; $53.00 pb ISBN 0-85274-349-1

With the rapid development of spatially resolved detectors and the availability of expanding graphical computing power, imaging research is attracting increasing attention within the physics community. The dedication of a recent issue of PHYSICS TODAY to the subject of imaging (September 1989) is indicative of physicists' new interest in imaging. Medical imaging is a rapidly developing subspecialty that is attracting a grow-