fields and superstrings are omitted, except for a brief note added in proof, thus minimizing prerequisites.)

Volume 2 makes frequent reference to parallel material in the first volume. Nevertheless, physicists with backgrounds in subnuclear phenomena dating from the late 1960s or later, and with exposure to a reasonable dose of flavor-SU(3), could start with volume 2 with little discomfort (except for what a few minor misprints and some disagreements over matters of taste could produce).

Perhaps the value of these two volumes will be best measured by how much they help to diminish the perceived intellectual distance between "big" and "small" physics, and by whether they reignite the flame of excitement that brought many of us into physics (or is keeping us here)—a flame that seems to thrive on the marvelous unity that emerges in physics at every turn. In my judgment this pair of volumes, like the *Feynman Lectures*, is a work that belongs in the hands of every physicist, even though, unlike the Feynman volumes, it covers but one vital corner of the vast frontier of our discipline. These books may inspire leaders in other subdisciplines to write similar works and thereby bring the frontiers of physics closer to the center. Gottfried and Weisskopf have set a fine standard for such an endeavor.

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The Particle Hunters

Yuval Ne'eman and Yoram Kirsh
Cambridge U. P., New York, 1986. 272 pp.
$49.50 hc ISBN 0-521-30194-7;
$13.95 pb ISBN 0-521-31780-0

The Particle Hunters provides a pleasant introduction to the phenomena, theories and experimental techniques of elementary-particle physics. The book's structure is historical, beginning with J. J. Thomson's electron and Ernest Rutherford's atom, and ending with the discovery of the W and Z^0 particles and with speculations about the Higgs boson. Along the way, there are anecdotes, quotes and interesting photographs. There are some nice insights; the chapter on accelerators, for example, is entitled "Particle Accelerators—or From Hunters to Farmers."

Most of the text is devoted to describing the known facts and accepted concepts in particle physics: quarks, leptons, hadrons, the four fundamental forces, conservation laws, the particle generations. The descriptions are filled out with brief discussions of experimental techniques: cosmic rays, traditional accelerators and accelerator experiments, particle colliders and collider experiments. In the first few chapters the authors provide the theoretical foundations for all of this with mostly qualitative presentations of special relativity and quantum mechanics.

The level of theoretical discussion is somewhat uneven. Readers who had taken a serious class in elementary physics or chemistry could learn much about particle physics from the book, but they would not be able to follow the explanations of subjects such as isospin or the eightfold way. (I confess that on some days when I'm puzzling over a possible discrepancy in the hadronic decays of the tau lepton, I'm not sure I understand isospin of strongly interacting particles.) Novices in particle physics reading the book on their own would have to let some subjects go by without understanding.

The instructor choosing this book as a text in an introductory particle physics course could either supplement the difficult parts or simply tell the students to ignore these. I would not recommend the book in a first course for students who intend to become professional particle physicists. They require a more systematic introduction to the advanced courses. But I might well use the text for teaching physics students intending to specialize in other fields and for engineers and chemists who want to get a feel for elementary particles.

This book will have a special appeal to its readers when they know that one of the authors, Yuval Ne'eman, is one of the pioneers in the classification of elementary particles. This is particle hunting described by the hunters.

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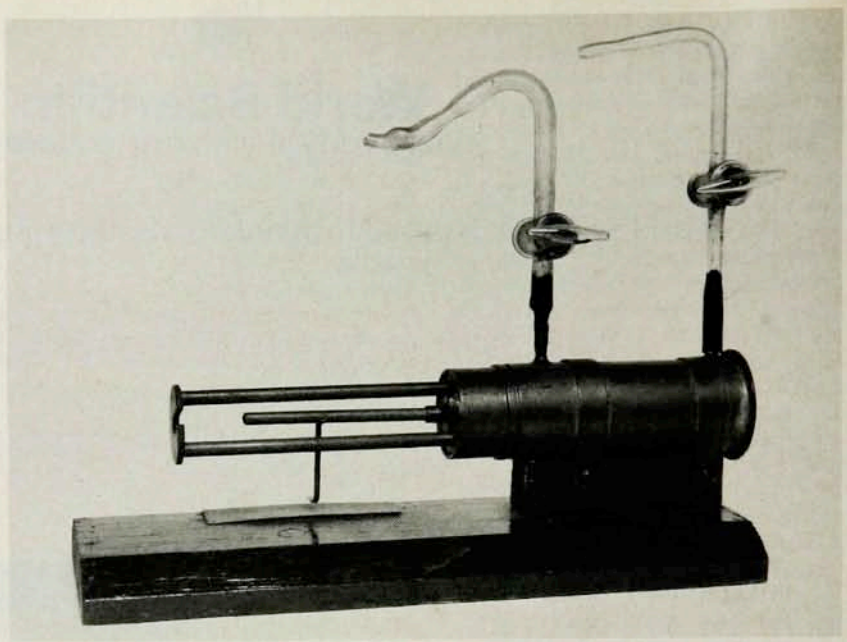

Apparatus used by Ernest Rutherford to discover the proton. (Reproduced from *The Particle Hunters* by permission of the Cavendish Laboratory, Cambridge, UK.)

Field Theory in Particle Physics, Volume 1

B. de Wit and J. Smith
North Holland, New York, 1986. 490 pp.
$45.00 hc ISBN 0-444-86996-4;
$23.00 pb ISBN 0-444-86999-9

Quantum Field Theory

Lewis H. Ryder
Cambridge U. P., New York, 1985. 443 pp.
$80.00 hc ISBN 0-521-23764-5;
$24.95 pb ISBN 0-521-33859-X

Gauge Theories of Strong and Electroweak Interactions

Peter Becher, Manfred Böhm and Hans Joos
Wiley, New York, 1984. 306 pp.
$79.95 hc ISBN 0-471-10429-9

Because all forces among elementary particles may be described by gauge