

# They also serve

William H. Press

**The Joy of Insight: Passions of a Physicist.** By Victor Weisskopf. *Basic Books*: 1991. Pp.336. \$24.95.

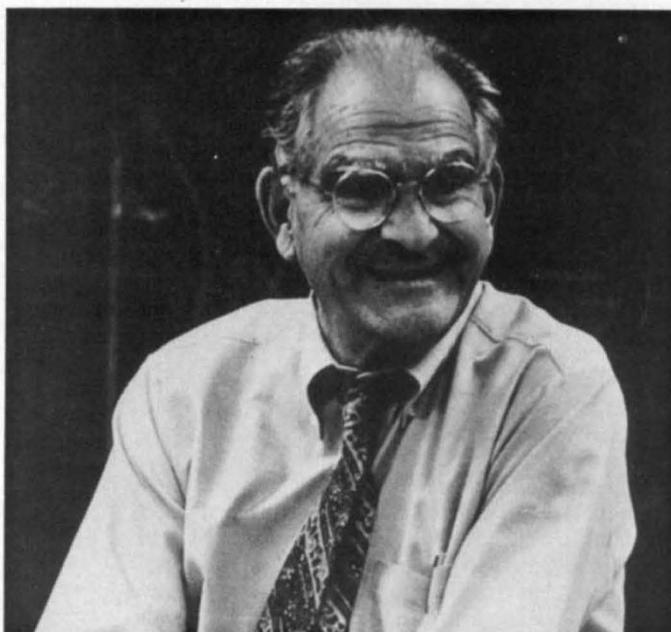
VICTOR Weisskopf, is a fortunate and happy individual, and he does not mind telling us so. Born in Vienna in 1908 to a well-to-do and intensely cultured Jewish family, Weisskopf lived through the Nazi destruction of European culture and science without harm to himself or any of his immediate family. An emigré in Rochester, then a Manhattan Project group leader at Los Alamos, and later an active citizen in the United States on issues of arms control and nuclear disarmament, he returned to Europe to play a significant role in the re-emergence of large-scale European science at CERN in the 1960s. Subsequently he has been a much-honoured senior statesman of science, a fixture of the Cambridge, Massachusetts, and world scenes, a man who summers in his 'petit paradis', a chalet on the slope of the Jura Mountains with a view of Mont Blanc.

And what physicist would not trade 10,000 citations in the *Science Citation Index* for a chance to have been where Weisskopf was, so often at the very centre of the action of twentieth-century physics? As a student in gymnasium, he read voraciously the popular accounts of the then infant quantum mechanics, wrote a letter to Planck and received a postcard reply (a wrong explanation, we now know). Hans Thirring, his undergraduate mentor in Vienna, sent him on to Göttingen, where he studied under Max Born, James Franck, Paul Ehrenfest and Richard Courant, among others. For recreation there were trips to Berlin to see the musical theatre of Brecht and Weill and their followers, or a week in Jena listening to Furtwängler conducting Brahms.

In 1931, doctorate in hand, Weisskopf went to Leipzig, to work with Heisenberg (alongside Yoshio Nishina and Felix Bloch); Schrödinger invited him to Berlin as his assistant. "Often I saw the Nazi gangs . . . beat up Jewish students or those who looked Jewish . . . More than once I had to pull one of the boys under attack into my office so that he could escape through the back door." Weisskopf spent a year in Copenhagen with Niels Bohr (where he met his future wife, Ellen), then several years as Pauli's assistant in Zürich. Expelled by the Swiss *Fremdenpolizei* for alleged leftist connections (a bureaucratic fabrication, he says), Viki and

Ellen spent some months in Copenhagen and Vienna, and crossed the Atlantic in 1937.

After the war and Los Alamos, Weisskopf was recruited to the Massachusetts Institute of Technology, where he became a powerful department head, wrote a classic textbook on theoretical nuclear physics, and supervised graduate students and postdoctoral fellows including Sid Drell, Murray Gell-



Victor Weisskopf — a life fulfilled.

Mann, David Jackson and Kurt Gottfried. Weisskopf was director-general of CERN from 1961 to 1965, during which time the decision to build a colliding-beam accelerator was taken.

When we read the autobiographical story of a charmed life, we are not surprised to find it told by a charmer. Weisskopf is the very model of the modern, liberal, politically conscious and administratively adept, twentieth-century physicist, a major-domo of 'big science'. He did about everything there was to do, except make a major scientific discovery himself. Weisskopf's role has always been that of the facilitator, the brilliant and fair-minded administrator, the writer of textbooks and review articles and the inspiring lecturer capable of explaining the big picture. "It is regrettable," he writes, "that among scientists the presentation of ideas is not as highly valued as the creation of ideas. This is in stark contrast to music, where the performer is a partner equal to the composer."

If it did not ring so true, Weisskopf's

memoir, *The Joy of Insight*, would seem intolerably smug. For example, "We were an unusual community, an international crowd of extremely creative people, and even our informal social gatherings were extraordinarily stimulating and interesting." (This could refer to any period in his life; it happens to be at Los Alamos.) When a rare cloud does shade this author's sunny disposition, it often has something to do with the question, what are sources of self-esteem for the almost-great scientist who has missed forever the young person's chance of making a truly important discovery? How many honours from professional societies and governments, how many good friends, splendid concert or theatre evenings, would one trade for a really important 'joy of insight' — important enough to make one's name immortal?

Weisskopf recognizes that, before the war, he might have been able to make discoveries in quantum field theory that were in the event made by others after it. If only he had been a bit more mathematical. If only he had worked a bit harder, or loved music and socializing a bit less. But, on balance, he has few regrets.

In one of this book's rare sardonic passages, Weisskopf writes: "There are three periods in the life of a successful theoretical physicist. The first, when one is young, is the time of hard work on new ideas . . . In the second period one has become reasonably well known and is invited to give talks at various universities and at conferences. One still contributes valuable original work, but more often with the help of younger colleagues or by suggesting a line of

research to them. In the third period one receives invitations to give general talks surveying the whole field through the light of experience. A little later one is invited to deliver memorial speeches about deceased colleagues or talks on the philosophical and political aspects of science. Finally, all one is asked to do is give after-dinner speeches."

Such shadows aside, Vienna, Göttingen, Copenhagen, Los Alamos, Cambridge and Geneva all make for a warm and engaging collection of stories, especially when they have been polished to a high sheen by years of retelling, and are now finally written down from the perspective of a mellow and much honoured old age. In a final chapter, the author discusses his personal, ranked choices of the greatest musical compositions and, especially, operas. □

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