

albeit a very public one—of a more general, indeed pervasive, problem in science.

After reading the book, I asked myself what has changed with respect to cold fusion since it was written. The answer must be, not much. Public presentations on the topic tend to fudge experimental details, give only partial results or results taken out of context and adduce relationships between unrelated experiments while glossing over inconsistencies. It seems to me that in their desperate need to attribute phenomena to the existence of a nuclear effect, the proponents of cold fusion have failed to distinguish in their results what is real from what is imaginary, and they might indeed be missing an interesting chemical or metallurgical phenomenon; there may in fact exist in the palladium-hydrogen system, under circumstances that remain ill-defined, a release of stored energy as heat. Indeed, it is important to say that there do seem to be some good measurements which indicate the possible occurrence of an interesting phenomenon. But what profit is there in such an inefficient, unreliable, dangerous and expensive energy storage method?

Albert Einstein, Mileva Marić: The Love Letters

Edited by Jürgen Renn and Robert Schulmann
(translated by Shawn Smith)
Princeton U. P., Princeton, N. J., 1992. 107 pp. \$14.95 hc ISBN 0-691-08760-1

In 1986 the editors of Einstein's collected papers were given access to papers from the estate of Albert's older son, Hans Albert; the papers had been deposited in a vault in a San Francisco bank. There they found some 400 letters exchanged among Einstein, Mileva Marić, his first wife, and their two sons. Nearly all of the 54 letters exchanged between October 1897 and September 1903—43 written by Albert, 11 by Mileva—have appeared in the original German in volume 1 of Einstein's collected papers (Princeton U. P., 1987); the remainder will be included in later volumes. These 54 early letters form the substance of the book edited by Jürgen Renn and Robert Schulmann, who are coeditors of the Einstein papers, and, therefore, thoroughly familiar with the period in which the letters were written.

In this book the letters appear in English, having been ably translated by Shawn Smith. The translation has

the advantage of being accessible to a larger audience, even though some of the original flavor inevitably is lost. Substituting "dollie" for *Doxerl* or "kitten" for *Miezchen*, Albert's amorous Swabian names for Mileva, or "Johnnie" for *Johonsel* (Mileva to Albert) cannot quite convey the same feeling as the original.

Mileva, of Serbian descent, was born with a luxation of the hip joint; she limped all her life. In 1896 she met Albert, four years her junior, shortly after both had enrolled at Zürich's Federal Institute of Technology (where both were aiming for a degree to become high school teachers in mathematics and physics). They married in January 1903, separated in 1914 and were divorced in 1919, the year Albert remarried.

The letters in this book mainly cover the period of their courtship. They speak of love. Or do they? Rather, it seems to me, they show Einstein as a "soul in ferment, the character undecided...thence proceeds mawkishness," words taken from the book's perfectly chosen epigraph. I do not believe that Einstein was capable of love for either of his wives. As he himself wrote shortly before his death, he had twice "failed miserably" in marriage.

Albert also writes to Mileva about his parents' vehement opposition to their relationship. Perhaps most interesting are his enthusiastic accounts of his research and his ideas for future work, in which relativity is prefigured, and Mileva's responses, which show her genuine interest in these thoughts. These accounts predate Einstein's inventive outbursts of 1905, outbursts that marked the beginning of his meteoric career.

In recent years much nonsense has been written about Mileva's helping to create relativity theory. I should stress that neither in these letters nor later did Mileva herself ever make such claims.

A letter from May 1901 reveals a fact that startled all Einstein experts: Mileva was pregnant. In January 1902 she gave birth to a daughter, Lieserl. When the letters were made public, that news made the *New York Times* on 3 May 1987, which carried a front-page article under the headline "Einstein Letters Tell of Anguished Love Affair." It obviously became an obligation for the editors of the Einstein papers to find out what had become of that girl. To date all those serious efforts have failed. No mention of Lieserl appears in any letter after 1903.

After their marriage, the Einsteins had two sons, Hans Albert and

Eduard, who of course do not appear in this book. Neither does this collection tell the story of Mileva's later life, a tale of misfortune and despondency.

How important are these letters for an understanding of Einstein? I leave it to the reader to make up his or her mind. The handsomely produced, slim volume with its beautiful dust jacket would make an ideal gift.

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Route 128: Lessons from Boston's High-Tech Community

Susan Rosegrant and David Lampe
Basic Books, New York, 1992. 240 pp. \$25.00 hc ISBN 0-465-04639-8

Job creation and business expansion are the objects of much attention today. *Route 128*, named for the Boston highway that is home to many of the region's high-tech industries, offers abundant material for those interested in these topics. Perhaps a better title would be "A History of Commerce and Education in Massachusetts from Earliest Times to the Present." The authors give a historical overview stretching back to the 19th century and before, providing much to explain the attitudes, circumstances and experiences that shaped the state's high-tech expansion.

The book belongs to the genre of journalism. The authors interviewed many key participants and wove their story into a mostly chronological narrative of how the region's prosperity of the 1980s had its roots in the MIT Radiation Laboratory of World War II and the developments that flowed from it. Largely absent are the tables, charts and graphs so prized by economists and scientists.

I read with interest that prior to World War II MIT encouraged its faculty to spend up to 20% of their time on consulting. I doubt if any dean of engineering (let alone science) would encourage that arrangement today, and many professors would begrudge the time taken away from publishable (that is, bankable, in academic terms) research. But perhaps it is an idea worthy of reexamination in the post-cold war age, when expansion of the US economy in the face of international competition is widely viewed as a national goal.

The authors deal at some length with the role of universities in both