processes, earth history, phylogenetic constraints, and species dynamics (speciation, colonization, and extinction) in a way that clarifies, rather than complicates, the issue of diversity.

One thing that this book does not do is offer much in the way of suggestions of how to deal with all the complexity it documents. This is a matter of the current state of community ecology, and the intent of bringing together so many authors was clearly to illustrate the scope of the problem rather than to achieve a consensus about the direction of future research. But the question remains, Where do we go from here in our efforts to answer Hutchinson's question? If there is to be substantive progress, I think it will involve major changes in the way we conduct ecological research. The ecology of the last several decades has been largely reductionist, striving to understand ecological systems by reducing their complexity. In my opinion, this approach is not working, or at least, is inadequate by itself. We must develop more holistic approaches that confront complexity directly. Some of the contributors to this volume (for example, Wright *et al.*; Holt; Haydon *et al.*; Farrell and Mitter; Brooks and McLennan) seem to be striking out in promising new directions. I will present some of my own ideas on the problem of ecological complexity in a forthcoming monograph (*Macroecology*, University of Chicago Press).

Many scientists in other disciplines still think of ecology as old-fashioned natural history or as comparable in rigor to a social science. Some ecologists, both young and old, are hypercritical and discouraged, rather than optimistic and excited, about the status and prospects of their discipline. I wish that all of these skeptics would read this book. It is a testament to how far ecology has come in the last 35 years and to the great challenges that still lie ahead.

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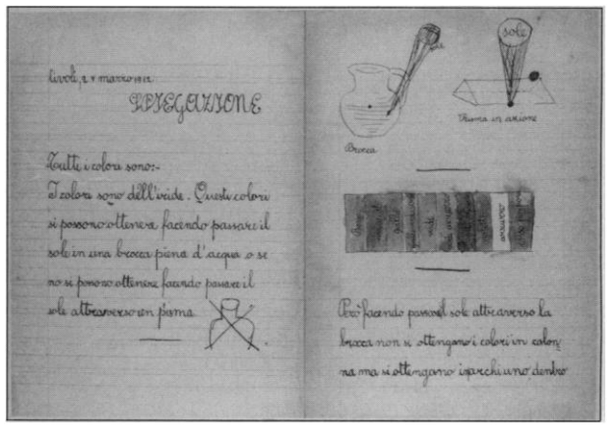
Days in Rome and Berkeley

A Mind Always in Motion. The Autobiography of EMILIO SEGRÈ. University of California Press, Berkeley, 1993. xii, 332 pp. + plates. $30 or £25.

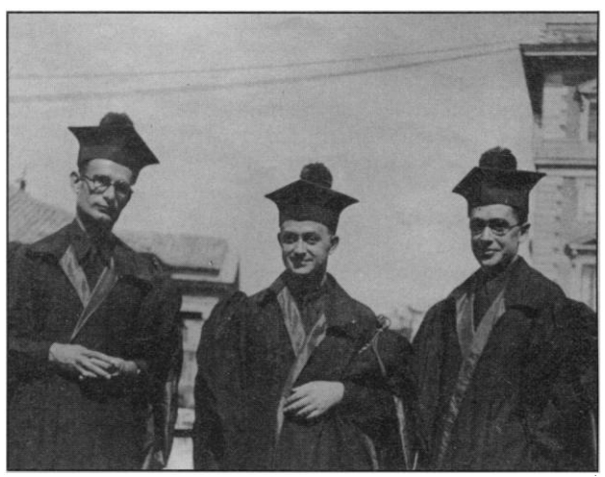
The name of the late Emilio Segrè is perhaps most widely associated with the researches on neutron physics conducted under the guidance of Enrico Fermi in Rome in the early 1930s, when the myth of "the boys of Via Panisperna" was established, and with the Nobel Prize awarded to him some 20 years later for the discovery of the antiproton in Berkeley. These events of his career span two different times of physics, epitomizing the transition from "little" to "big" science, from the "string and sealing wax" handicraft of the Rome days to the big accelerator in the West Coast laboratory; and, more than that, two geographical sites deeply associated with different, often conflicting cultures.



Notebook of Emilio Segrè at age seven. "All the colors are: The colors are of the rainbow. These colors can be obtained by passing sunlight through a pitcher filled with water or by passing sunlight through a prism. However, by passing the sun through the pitcher one does not obtain the colors in columns but in arcs, one within [the other]." [From *A Mind Always in Motion*]

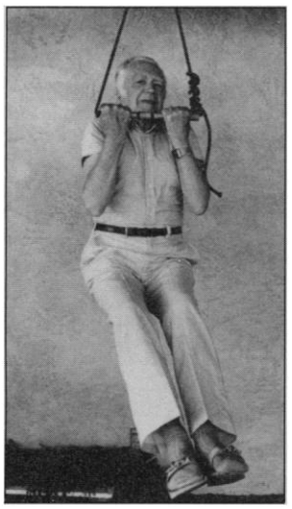
Like so many European scientists impelled to emigration by political events at home, Segrè had to find his way to adjust to the sudden transition between worlds, to maintain attachment to his roots while creating links with a second homeland. This book is largely the story of the working out of this tension. It is not a story written along the lines of a "scientific" autobiography; relatively little of it is devoted to strictly technical matters, the hard stuff always being kept to a bare minimum. Rather than on scientific deeds, the focus is on the milieu of the events and on the personalities of the actors. Throughout the book emerges Segrè's skill at evoking an atmosphere or sketching the characters of his colleagues. The author openly says that he has "not sought to display manners and tact I never had." The result is a lively gallery of portraits, in particular when we are offered Segrè's impressions of the Berkeley environment and the physicists there: Ernest Lawrence, "more a doer than a thinker . . . fundamentally generous and magnanimous" but "occasionally petty" and "childish" in his quest for power; Glenn Seaborg, whose "unbridled ambition" made him "determined to get ahead by any means"; Robert Oppenheimer, the "demigod" delighting in "erudite complexities," who nonetheless "knew quantum mechanics well, and in this was unique at Berkeley."

The only regret felt by the reader of these commentaries is that too often Segrè's remarks on his world are as superficial as caustic and incisive, and the exposition turns suddenly from an introspective approach that might shed new light to the pragmatic, matter-of-fact style that is the dominant tone of the narrative. It is quite clear, for example, that Segrè's relation with Berkeley's Radiation Laboratory was not exactly an idyll and that he had strong feelings about Edwin McMillan and Seaborg's 1951 Nobel Prize for chemistry as a recognition he deserved to share. That these and other issues are only hinted at is at times disappointing, considering that, for example, Segrè played a not minor part in the final stage of the construction of the atomic bomb as one of the leading scientists present at Los Alamos. His account of the days on the "fateful Mesa" is lively and rich in anecdotes and portraits, but very little emerges of the deeper motivations and conflicts that stirred the scientists in the laboratory. The ethical dilemmas and inner struggles that accompanied the "loss of innocence" of the physicists' community are given altogether less consideration in the book than is litigation concerning the family business in



"Franco Rasetti (nicknamed 'Cardinal Vicar'), Enrico Fermi ('Pope'), and Emilio Segrè ('Basilisk') in academic dress, 1931." [From *A Mind Always in Motion*]

Italy, obviously as important and painful to the author as irrelevant to the world at large. This tendency to avoid the deeper aspects of a controversial issue, skirting them by taking a pragmatic attitude while keeping a disenchanted eye on the matter, is characteristic of Segrè's writing and reveals itself in his own behavior on several occasions, as in the case of the loyalty oath required of the faculty in 1949 by the regents of the University of California; regarding the whole affair as "a grotesque episode," Segrè nonetheless swore the oath, considering the requirement a "transient lunacy." Transient it was indeed, but it was a lunacy that cost Berkeley such scientists as Geoffrey Chew, Gian Carlo Wick, Robert Serber, Wolfgang Panofsky, and Marvin Goldberger. It must be noted that Segrè's actions were at times strongly conditioned by his relatively weak position as an immigrant and former "enemy alien."



"Emilio at home, doing his daily chinning exercise, 1981." [From *A Mind Always in Motion*; courtesy of the *San Francisco Examiner*]

A scientist's autobiography is not usually meant just as a selection of anecdotes and recollections from the author's life: it is offered as a document for history, in which the author intends that "the facts as they actually happened" be revealed and committed to posterity. This is certainly the case with Segrè's; his declared purpose, prompted by the observation that many of his colleagues "remember the facts . . . the way they would like them to have happened," is to "tell the unvarnished truth." Historians have long been aware of the care required in the use of such historical reconstructions, learning to treat them as at once valuable documents and unreliable sources. How does Segrè's contribution rate checked against independent historical evidence? Certainly better than average, thanks to the author's habit, developed in his own writings on the history of physics, of reliance on documentation. Still, tricks of memory and the unconscious wish to tell facts the way one "would like them to have happened" take over on occasion, and one is given an overall picture that, while composed of single elements that are factually accurate, can nonetheless be altogether misleading. This is the case with the account of the events that led in 1955 to the antiproton experiment that finally won Segrè and Owen Chamberlain the Nobel Prize four years later. Segrè says that he "decided to attack the problem in two ways," but no mention is made of the fact that the second way (observation of annihilation tracks in photographic emulsions) had been proposed to him by Edoardo Amaldi, who already had obtained some slight evidence of antiproton annihilation in emulsions exposed to cosmic radiation, and was developed as a joint enterprise between the Rome group led by Amaldi and the Berkeley physicists, so that the emulsion work that confirmed the results of the first experiment was actually performed in Rome. The collaboration between the two groups is mentioned, later in the narrative, in such a way that it is not at all clear that it had to do with the antiproton, and the only way the reader can get a hint of Amaldi's actual role in the story is by looking, in the notes at the end of the book, at the names of the authors of the papers that appeared in the *Physical Review*. Altogether, the author carves for himself and his group a larger share of the credit than available evidence suggests is warranted. This is by no means meant to detract from the book's worth as valuable reading and significant testimony; it only offers a further small warning about the objectivity of involved witnesses. Even if at times what Segrè tells of others has to be taken with care, it tells us much about Segrè, and this is, after all, what an autobiography should strive for.

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Home Life of a Hero

The Private Lives of Albert Einstein. ROGER HIGHFIELD and PAUL CARTER. Faber and Faber, London, 1993. xii, 355 pp. + plates. £14.99.

Albert Einstein is as fascinating as he is puzzling. A man of enormous achievement in science and often singular dedication in social affairs, he evokes public adulation like few others of this century. Despite the efforts of numerous biographers, Einstein's private life and personality have remained largely unknown, provoking both the fascination of the curious and the puzzlement of any scholar attempting to comprehend the public Einstein in human terms. Only recently, and especially with the advent of the project to research and edit Einstein's collected papers, has Einstein's personal life been successfully subjected to as much scrutiny as has his early and most influential scientific work. Closely supported and guided by the Einstein editors, British journalists Roger Highfield, science editor of the *Daily Telegraph*, and Paul Carter, deputy chief subeditor of the *Daily Express*, provide a readable, thoughtful, and insightful report on the private Einstein uncovered so far by the Einstein project. Their account displays both the strengths and the weaknesses of their craft and of the Einstein editorial project on which they rely.

Like most investigative reports, one aim of this book is to debunk the heroic Einstein: to reveal the self-described "Jewish saint" in the public arena as a secular sinner in private affairs. There seem to be plenty of personal faults for which to condemn the man, but the authors do not always avoid the Fleet Street mania for muck. In a chapter entitled "The holy one" they resolutely wring every unseemly bit of gossip they can from the memory of Einstein's former live-in maid; elsewhere, pages are filled with the macabre story of how Einstein's brain was removed and analyzed after his death; and gossipy statements and biographies by anyone claiming inside information on Einstein are presented as fact. In a manner more to the journalist's than to the scholar's taste, all sources are treated as equal, and historical wisdom devolves mainly from the members of the Einstein editorial project. The book concludes with a brief history of the editorial project, criticism of attempts by the executors of Einstein's estate to shield the great man's private life, and an epilogue updating an earlier chronicle of the editors' seemingly obsessive efforts to track down Einstein's illegitimate offspring. Apparently at a loss for news, the authors make almost as much a story of the Einstein editorial project as they do of Einstein himself.

Despite such excesses, the center of this book remains the scrutiny of Einstein's "private lives," by which is meant mainly his relationships with women. Gossip aside, the authors rest their case on the more solid evidence of Einstein's recently uncovered "love letters" with his two wives—although, for him, love seems to have played only a minor role in either marriage. When not merely summarizing these letters, the authors achieve a number of unique and important insights, some of which touch upon the most significant question of any scientific biography: how did this person achieve his or her scientific contributions?