

enduring interactions when so many hospital workers drift in and out of the structures that hold them in a tight, impersonal hierarchy, too often abandoning the altruism present “everywhere, in nature, in human society.” She concludes, “We can do better than this” (346).

Duberman’s edited collection of Weisstein’s essays is not a secondary analysis like those typically reviewed in *HEQ*. However, I believe that it tells us a great deal about the history of higher education in the mid to late twentieth century. Weisstein’s compelling words flesh out conditions women routinely experienced in academia as students and as scientists, researchers, teachers, and members of professional associations. Beyond her recollections, Duberman helps us understand just how significant her activism was in changing so many of those entrenched forms of gender oppression, though she was never satisfied that enough had shifted. The stories of her activism—as well as that of others—deserve to be told. Weisstein’s essays also speak with uncanny resonance to today’s activists in and around academia. She dares new generations to draw on their unique gifts, to confront injustices, and, where possible, to leaven this important work with humor, one of her most potent tools. Though my own writing is sadly lacking in humor, I am grateful to have encountered her through Duberman’s book.

JACKIE M. BLOUNT
The Ohio State University

doi: 10.1017/heq.2020.70

Donovan Moore. *What Stars Are Made Of: The Life of Cecilia Payne-Gaposchkin*. Cambridge, MA: Harvard University Press, 2020. 320 pp.

Despite Cecilia Payne-Gaposchkin’s fame as one of the most influential women in science in the twentieth century, Donovan Moore’s work is the first full-length biography of the scientist. Payne-Gaposchkin has multiple claims to fame, perhaps the biggest her discovery that stars are primarily composed of hydrogen. They are not simply, as had been previously thought, very large hot Earths. Payne-Gaposchkin was the first female science professor at Harvard University and the first female professor in any field at Harvard to be promoted to full professorship rather than hired from outside into a chaired position.

Payne-Gaposchkin was one of those individuals who seemed almost destined to become a scientist, and Moore, at one point, does remark that she was a “born scientist” (p. 4). She was an extremely curious child and a voracious reader, and her parents and other family members encouraged her curiosity and learning. Her experiences in formalized educational environments, however, were not always encouraging. Moore divides the book into three sections, each comprised of multiple short chapters. Each section covers Payne-Gaposchkin’s life in a different educational environment—in the first section, her girlhood through various primary and secondary schools; in the second, her life as an undergraduate student at Cambridge University; and in the third, her adulthood (in Cambridge, Massachusetts) as a worker, graduate student, and later faculty member at Harvard University. Readers will likely progress quickly through the short chapters within sections, each one a bit like a snapshot, and one wonders if that was a deliberate stylistic choice to allude to the photographic plates Payne-Gaposchkin spent much of her life examining.

In terms of chronology and information, the biography closely follows Payne-Gaposchkin’s published autobiography, especially during her early life. Moore draws on some well-known primary sources and secondary literature in the history of science but not as much in the history of education as might be hoped. However, Moore conducted interviews with Virginia Trimble, Robin Catchpole, Owen Gingerich, and David DeVorkin—two well-known astronomers and two historians of science who personally knew Payne-Gaposchkin—and he incorporates recollections from these interviews. Moore also incorporates unpublished material still privately held by Katherine Haramundanis, Payne-Gaposchkin’s daughter, including multiple photographs and personal recollections. These inclusions are a particular treat to those already familiar with most of Payne-Gaposchkin’s story.

The author’s background as a writer is clearly, and often enjoyably, evident in this biography. The narrative is well written and engaging, but part of the engrossing nature of the book rests on tropes common to scientific biographies. First, Payne-Gaposchkin is portrayed as the “born scientist” and as a lone, misunderstood genius. Added to these are clichés special to biographies of women in science—that male mentors intervened at crucial moments, that she was ultimately (if occasionally tragically) victorious in her struggles against sexism, and that her victory was due to stubbornness and sheer scientific brilliance. To a greater or lesser extent, these carry the narrative, and it would have been nice if the book had dwelled more on those moments in which Payne-Gaposchkin departed from these themes. Far from being a lone genius, for instance, Payne-Gaposchkin worked with a network of people in science. Moore

discusses some of these individuals, both at Cambridge University and in the United States, but greater attention to them might have helped contextualize Payne-Gaposchkin in her time and in her communities. For instance, it would have been nice to learn more about the influence of Quakerism on her work and outlook which comes up only as a passing mention in the foreword. For another example, how did Payne-Gaposchkin engage with scientific associations like the American Astronomical Society? And was she at all involved with organizations like the American Association of University Women?

Despite the book's engaging nature, it does not add to the existing historiography of Payne-Gaposchkin and her environs as much as might be hoped. More could have been done, for instance, in exploring Payne-Gaposchkin in her work at Harvard University and Radcliffe College. She bridged an extremely interesting time in Harvard and Radcliffe's history, from when students were educated almost entirely separately to the beginnings of coeducation. Moore notes that Payne-Gaposchkin was an extremely popular instructor at Harvard, but one also wonders about her effect on the female college students of Radcliffe and if she inspired a generation of students there as well. And how did she view the tension between these two educational institutions that so strangely coexisted? It would also have been nice to learn more about Payne-Gaposchkin's life at the top of her career—after she had been recognized for her scientific contributions, had become a Harvard professor, and even a department chair. The book focuses mostly on her journey and struggles to the pinnacle of her career, but what did she do when she got there?

But, on the whole, this book will particularly appeal to a popular audience and will certainly help promote recognition of one of the most important astronomers of the twentieth century. As I was reading this book, the news broke that astrophysicist Joan Feynman had passed away. Feynman (yes, the sister of the more notorious Richard) had not been much encouraged to pursue science, but as a child she had received a book on astronomy from her brother. In this book, seeing research by Payne-Gaposchkin became the decisive moment in which Feynman realized she could become a scientist. Moore's biography features a foreword by astronomer Dame Jocelyn Bell Burnell, in which she discusses how Payne-Gaposchkin's life had resonated for her too. I hope Moore's book will provide inspiration to many others who are dreaming and reaching for the stars.

JOANNA BEHRMAN
American Institute of Physics

doi: 10.1017/heq.2020.69