

the displays, their efforts actually promoted a world view in which even the most successful groups can be swept aside by extraneous factors, to be replaced by formerly obscure types that turned out to have more potential.

Benton's book has less to offer historians since it is intended to provide an up-to-date account of the latest fossil discoveries and the increasingly sophisticated techniques by which they are interpreted and displayed. It does, however, use historical examples, including the first *Lost World* movie, to illustrate how ideas have changed through time. It will be of interest to those who want to understand how scientists actually work in this area, Benton himself being one of the most active and authoritative experts in the field. Linking with the theme of Rieppel's book, it also gives us an insider's view of how the results are presented to the public. Benton was a consultant for the BBC's *Walking with Dinosaurs* television series in 1996 and understands how movies such as *Jurassic Park* were made. He certainly appreciates how efforts are made to bring the creatures to life and to tell us something about the past history of life on Earth – but with less emphasis on whatever ideological messages those who commission the displays might have in mind.

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Allan Esterson and David C. Cassidy, *Einstein's Wife: The Real Story of Mileva Einstein-Marić*

Cambridge, MA: MIT Press, 2019. Pp. 336. ISBN: 978-0-2625-3897-8. \$19.95 (paperback). ISBN: 978-0-2620-3961-1. \$29.95 (hardback).

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In 1987 a collection of letters between Albert Einstein and Mileva Marić were published in the first volume of *The Collected Works of Albert Einstein*. Previously, little had been known about Einstein's first marriage, nor of the woman to whom he was married, even though it was during this period of his life that Einstein went from a teenaged physics student to a celebrated professor of theoretical physics in Berlin. A proliferation of media followed, many of which relied heavily on a 1969 Serbian biography of Marić by Trbuhović-Gjurić. Marić was variously presented as an irrelevant housewife, an excluded co-author or an indispensable assistant. The present book by Esterson and Cassidy – with a brief interlude by Sime – returns to the story of Marić with the intention of uncovering what really happened 'for the sake of the history of contemporary physics' (p. xi). It does this via three distinct, single-author contributions.

The book begins with a collective biography of Einstein and Marić, authored by Cassidy, giving a nuanced and enjoyable popular account of their entangled lives. Born in 1875, Marić grew up in Austria-Hungary at a time when women were excluded from universities, both by law and by a complete lack of gymnasia at which girls could prepare for the university entrance exam. Cassidy guides the reader through the numerous hoops

Marić jumped through in order to begin studying in Switzerland, namely at the Zurich Polytechnic in 1896. It was here that she met fellow student of physics Albert Einstein.

The letters sent between Marić and Einstein during their time as students testify both to their burgeoning romance and to their collaborative intellectual endeavours. Einstein wrote to Marić, 'I enjoy working together very much, and find it soothing and less boring', and later wrote of his anticipation of reading Helmholtz's work on the electromagnetic theory of light together (pp. 35, 39). Einstein shared his conviction that together they would be 'the happiest people on earth' and his hopes that when Marić became his wife they would 'diligently work on science together so [they] don't become old philistines' (p. 59).

Unfortunately, all was not plain sailing for this couple. Einstein's parents vehemently disapproved of the match, with his mother apparently telling him that 'like you [Marić] is a book – but you ought to have a wife' (p. 47). As they neared the end of their studies, when many of their friends began settling down, Einstein refused to marry before he secured his parent's approval and was earning a steady income. Worse, for reasons not entirely clear, Marić was refused her diploma by the Polytechnic examiners, possibly for her low score in one of her final examinations. The next year Marić resat the final exams and failed again. Worse yet, by this time she was pregnant with Einstein's child and they were still not married. They eventually married in Bern in 1903, by which time they had already given up their daughter. As Einstein's career as a physicist took off, Marić became increasingly resentful of taking second place to science, and it seems that Einstein found intellectual companionship outside the home rather than with his wife, as he had originally wished to do. By 1914 the marriage had broken down and they began living separately.

The scientific trajectory of Marić – her difficulty in accessing higher education, and the disappointing conclusion to her university studies – is very nicely contextualized by Ruth Sime's contribution to this book. In only seven pages Sime manages to introduce a number of prominent women scientists and consider the obstacles they faced, including lack of access to laboratory spaces; difficulty in procuring stable, well-remunerated positions as researchers; and increasing anti-Semitism. The notes provide an expansive introduction to literature on women in science, though they omit recent literature on domesticity and collaborative couples in science, which is extremely pertinent to the story of Marić.

The final, and longest, section of the book, authored by Esterson, gives a critical reappraisal of academic and popular literature on Marić, focusing especially on any potential intellectual contribution she may have made to Einstein's work. Here, Esterson demonstrates an intimate knowledge of both primary and secondary sources. He gives extensive evidence for how anecdotes and hearsay were transformed into 'historical fact' through their repeated inclusion in academic literature with incomplete or omitted attributions, and lightly touches on how the motivations of individual authors affected the stories they respectively told. The motivation of Esterson, whilst not explicitly given, seems to have been to refute that Marić played any role whatsoever in Einstein's scientific work. An implicit distinction is drawn between practical assistance – acting as amanuensis, providing books – and intellectual labour, the former being deemed insufficient to count as a form of collaboration (p. 222). The limitations of the primary source material are not treated in any depth; gaps in correspondence and the comparatively small number of extant letters by Marić herself are noted in passing, but the ramifications of this on our understanding of this historical episode are not considered. Indeed, on occasion Esterson uses a lack of evidence to confirm a lack of contribution by Marić, rather than leaving space for potential collaboration that can neither be confirmed nor denied (p. 187). This occasionally creates tension between the contributions of Cassidy and Esterson, with the former suggesting instances where collaboration was plausible, for

example an early paper on capillarity, whilst acknowledging the limitations of the primary source material (p. 45).

While it may never be possible to fully unpick the influence that Marić's presence had on the scientific work of Einstein, *Einstein's Wife* gives as detailed a picture of their life together as can currently be produced. Numerous questions remain, especially around what the relationship of Einstein and Marić tells us of the ways in which spouses and life partners historically could (and could not) collaborate on scientific work.

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