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Book review

Erin Zimmerman. 2024. Unrooted: Botany, Motherhood, and the Fight to Save an Old Science, Melville House, New York and London. 272 pages. ISBN: 9781685890704. $28.99

A captivating account of a women researcher's journey through the early career researcher and as a post-doctoral researcher; and her struggles to balance the professional and personal work priorities. It is a hard hitting narrative with facts elaborating why many women were not able to make up the ladder in the career though they are dominating in numbers at the starting of research as a career. The book is a personal account of the author with a balanced description of intricacies of a bioinformatics research and excellent extracts from research writings to support her writings and how she found the purpose and support to bringout this volume.

The book is organized into ten chapters with an interesting prologue and good list of further reading. This literary scientific work adhered to a pattern of science writing by putting references as endnotes and detailed index at the end. The botanical sketches at the starting of each chapter are the most interesting for this literary work on science.

The Chapter "Library of the Dead" describes the need to do a document the life at large. The description of herbarium and the collections at Kew and the why few people now take the career in systematics as a field science, but lot is happening in the labs. The statement "You very rarely will find a description of new species in [a high-profile journal such as] Nature or Science, unless it's some organism like a dinosaur or something that there aren't very many of so any new one is perceived as more impactful" clearly elaborates the state of systematics at present. The dilemma of the herbarium administrators is amply explained as "It's always key to the success of any museum or collection to be able to demonstrate your relevance, scientifically as well as societally, and having the public engaged in your collection is very important." They fear "that there's sort of a sense that, well, we digitized the collections, so really it doesn't matter much what happens to the physical collections because there's a digital representation. Digitizing didn't replace anything. What it really did was add another aspect to a collection. Now, you have two collections."

The Chapter "Learning to Look" is an excellent description of young researchers struggle to cope up with obtaining molecular data from various samples and understanding their linkages with other congeneric groups and out groups. The statement "Scientific research topics can seem narrow to the point of absurdity, like an entire career spent on a single species, but ask any scientist, and they'll tell you that there really is a lifetime's worth of discovery there. It speaks to the complexity of our universe that even the thinnest slices can be so expansive" summarizes what is research to a dedicated worker. The author elaborates how a task given by the mentor to prepare photomicrographs of cells from teaching slides for his lectures actually helped her to understand the plant evolution. This shows how the mentee-mentor relationships shape good science if one pays attention to the learning part of the task rather than the taxing nature of such jobs.

The Chapter "Tiny worlds" can be best summer up with the statement of the author "I felt disconnected from the friends and family with whom I couldn't really discuss my work. My research became my life and my identity, while my hobbies receded into the background. The only thing I did for fun was to write a weekly biology blog about some unusual plant or animal. It made me feel like I'd accomplished something more tangible than a thesis that wouldn't be done for years yet, and gave me an excuse to broaden my knowledge of evolution under the guise of a pastime. Why researchers have to do a post-doctoral work is amply explained as "Today, the number of doctoral degrees awarded massively outpaces the number of permanent positions within academia. Degrees awarded have increased steeply over the past few decades. For that reason, rather than moving directly on to permanent research and teaching/faculty positions, young scientists in most fields must first become postdoctoral researchers, or postdocs. It is an apprenticeship that didn't used to exist but may now be where a researcher spends much of their twenties or thirties, working toward something permanent".

The Chapter "Interpid Enough" starts with an elaborate account of field work for botanical collections in wet tropical forests and the dangers it can pose to the personal security from wildlife and infections. It gives excellent illustration of field botanists' struggles to sort the days collections into the stored collections as fixed collections, herbarium collections etc., and process them before calling it a day. The importance of this work is summarized by the author "Fieldwork, and collections in particular, forms a foundation for research on biodiversity, species distribution patterns, global and local extinctions, invasive species, and the effects of climate change and other types of environmental degradation".

The Chapter "Learning to See" amply describes the importance of botanical illustrations. She elaborates the importance of participation of researchers in conferences which help them network with other workers and find opportunities for future work.

The Chapter "Uncertainty, in Science and Life" starts with "Sitting down to write a doctoral thesis is an intensive experience. It's just you and your research, alone together for months. It's solitary in a way that lab work, with its casual chats and group playlists, isn't. It's also your last chance to do your research justice, to be insightful…to show some hint of brilliance that might mark you for a bright future to some hiring committee down the road". It elaborates how she moved from a morpho-taxonomy-evolution work to molecular biology-bioinformatics work.

The Chapter "Adaptation" discusses the bioinformatics researcher's difficulties to find solutions in systematics work and the author's transition from doctoral student to post-doctoral researcher.

The Chapter "The Lady Vanishes" contains the discussion of why women researcher raising a family faces difficulties to adapt to the work pressures and need space for their academic growth and family security. It also amply highlights the importance of understanding of the partner in promoting the career oriented women in botany as research area.

The Chapter "This view of Life" summarizes that life of a women researchers once she puts hold the career for the sake of family and how her life changes. The freelancing work one does is not reflected in the CVs and thus considered complete absence from the current happenings in the subject.

The Chapter "Botanist at Large" elaborates the authors' transition from the hardcore researcher to freelance literary science for non-technical readers which ultimately resulted into the present book.

This book is a highly recommended reading for the undergraduate students of Biology, especially women, to understands the future career prospects and the struggles ahead. It should be a suggested reading for the course on the fascinating plants and also as a reference work for the science writing for general readers.

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