through in-depth interviews with practitioners, the family members of donors, and the recipients themselves.

These interviews make up the core of the book, and they are by turns touching and harrowing. Most of the interviewees’ reactions to their experiences are universal. Although the process is grueling for everyone involved, recipients are deeply grateful for a new chance at life, while those who make transplants possible are proud to provide that chance. Some of their reactions may be more surprising to non-Japanese readers, and these are explored in fascinating depth. Some recipients hide their experiences because they face disapproval so extreme that they may be considered cannibals. The paucity of donated organs in Japan means that donors and their families have enormous power, eclipsing that of practitioners, who are used to playing a far more paternalistic role than in other countries. Finally, in a culture in which mutual exchanges of gifts play an outsized role, receiving a gift of life that can never be repaid can leave organ recipients with a sense of obligation that is impossible to expiate.

This obligation leads interviewees to consider organ transplantation a form of “rebirthable life,” the key concept in Yasuoka’s analysis. Donors’ families speak of them as “missing children” who live on inside organ recipients’ bodies, and some even avoid getting to know recipients because hearing of their deaths would mean hearing that their loved one has died completely. Recipients describe deeply personal relationships with donors they have never met, often to the point of feeling obligated to live as long as possible to keep the donor’s organ alive. Some even describe taking their donor’s wishes into consideration when making decisions.

As the title states, Yasuoka’s approach is rooted in anthropology, so her focus is on exploring the thoughts of participants in the Japanese organ transplant system on their own terms. This may disappoint readers who desire a well-organized introduction to the medical and legal foundations of that system. Even by her own standards, the author is not always successful. Because so few transplants have taken place in Japan, she has had no choice but to recycle a small number of interviews in a way that can be repetitive, and additional material on Japanese funeral practices is enlightening but ultimately irrelevant. Furthermore, the clarity and depth with which the author explains her conceptual framework doesn’t strike me as entirely satisfying.

Still, this book provides a penetrating and affecting glimpse at the human side of health care in Japan. For those of us familiar with that field, it provides many valuable insights into a controversial and high-profile issue. Other readers will, at the very least, find it intriguing and thought-provoking.

Reviewer: David Newby

David Newby is a Japanese translator and medical writer in Philadelphia, Pennsylvania.

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**Immunity: How Elie Metchnikoff Changed the Course of Modern Medicine**

Luba Vikhanski


He was lauded as the father of innate immunity. News of his experiments graced the front pages of newspapers worldwide. In 1911, he was named one of the world’s greatest men. Yet 50 years after his death, Nobel-laureate scientist Elie Metchnikoff had fallen into obscurity.

In the mid-1800s, infectious diseases such as typhus, cholera, and tuberculosis devastated cities across Europe. By the 1880s, new hope arose following vaccinations that successfully provided immunity against anthrax. However, the mechanism by which immunity was created remained a mystery.

As a Russian zoologist, Metchnikoff began questioning why some people were more susceptible to life-threatening disease than others. In transparent invertebrates, he injected a number of materials—milk, blood, dyes, food, germs—and watched under a microscope as the intruding particles were surrounded and often engulfed by wandering cells. Contrary to most physicians of the time, Metchnikoff became convinced that these cells were part of an active defense system present in all living beings, even humans. In 1883, he presented his theory of innate immunity, which described the immune system with eerie accuracy. When met with scathing criticism, Metchnikoff stubbornly sought more evidence to defend his theory. For this work, he was awarded the 1908 Nobel Prize in Medicine jointly with his rival, Paul Ehrlich.

At the Pasteur Institute in Paris, Metchnikoff founded the field of gerontology. Believing diet could improve health, he prescribed “sour milk” to cultivate healthy gut microbes and prolong life. This research pioneered probiotics and attracted enormous public attention, eventually launching the yogurt industry. However, these longevity theories were ridiculed by critics. In his final days, he agonized over the fate of his theories.

After his death, Metchnikoff faded into obscurity everywhere except his homeland, where Soviet propaganda had exalted him as a national hero. When Luba Vikhanski, the child of Soviet dissenters, first learned about Metchnikoff, she assumed he was a fake. She was surprised when, years later while working as a science writer, he was recommended to her
as a “little-known but key” figure in science history. A decade of research following Metchnikoff’s trail led her from a zoological station in Naples to a safety deposit box at a Parisian bank on the Champs-Élysées. While unraveling the mysteries of Metchnikoff’s life, Vikhanski gained access to an exhaustive collection of primary sources, including his previously inaccessible personal letters.

As the first biography of this scientist in decades, this book reanimates Metchnikoff for the 21st century, revealing a towering figure of science complete with complex human flaws. He was a vigorous reader, prolific writer, and fiery lecturer who routinely attracted large crowds. His writing, in particular, served to vigorously defend his theories throughout the “immunity wars” and to preserve his stunningly prescient science for rediscovery.

*Immunity* adds an important chapter to science history, balancing quality scholarship with clear language. Aided by its concise but engaging chapters, readers will be pleased by the accessibility of the science. The book will be especially engaging to medical writers with an interest in immunology, microbiology, and gerontology.

**Reviewer:** Kristin A. Roynesdal, MS

Kristin is a freelance medical editor and writer in Charlottesville, Virginia.

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**Lab Girl**

**Hope Jahren**


Even for avid gardeners, I wager that the thrill of discoveries in the dirt has never been more passionately expressed than in *Lab Girl*, written by geobiologist Hope Jahren. This is a delightful read, and the author is that rare scientist who can write a page-turner intended for a general audience.

Although much of *Lab Girl* is autobiographical and written in the first person, sections alternate between anecdotes of the author’s scientific and life journey, and mini-lectures about the natural world. These disparate sections are, however, thematically linked. For example, a description of how trees begin their growth from seeds precedes a chapter about Jahren’s undergraduate job in a hospital blood-typing lab. It was in that meticulous tedium that she began to envision herself as a future scientist—the seeds, so to speak, that would bear fruit in her career.

I especially enjoyed the sections where Jahren discusses the business of being a scientist. “My laboratory is a place where the lights are always on,” she says—but it is a refuge and many other things, too. Foremost on her mind is money—writing grants, keeping lab members paid, tinkering with old equipment held together with duct tape (literally). Her experiences with peer review, both speaking at scientific conferences and submitting manuscripts to journals, are thought-provoking. Remember, this is a woman who’s achieved tenure, grants, and awards. She juggles teaching responsibilities, working with students, research field trips to Norway and Ireland, and a family life. Her description of a road trip to a scientific conference, with her lab assistant and graduate student bundled into an old van, is particularly entertaining and sobering at the same time.

Lest you roll your eyes and think “Great, yet another Wonder Woman!” Jahren’s accomplishments have not come easily. In what may be the most powerful sections of the book, she discusses her struggle with mental illness, including a vivid anecdote about a harrowing psychotic break. She recovers, but her illness resurfaces when she becomes pregnant and medication side effects pose new difficulties.

Jahren’s book begins with a lovely homage to her father, a community-college instructor in a small town in Minnesota. But her family is almost never mentioned again, except elliptically. We fast-forward through her meeting and marrying her husband, their moving from Johns Hopkins to Hawaii, and her relationship with her young son. Although some readers may find it jarring to encounter important personal matters mostly in offhand comments, I sense that Jahren is a modest Midwesterner who just doesn’t like talking about those things.

For you sticklers for detail, Jahren even includes an endnote explaining how she arrived at some of the calculations in the book (such as Federal funding for “curiosity-driven” research, or the length of wooden planks made in the United States in the last 20 years, if stretched end to end).

“Carefully writing everything down is the only real defense we have against forgetting something important that once was and is no more,” writes Jahren. If this idea moves you, this book will please you—with the joys of thinking deeply about science and reading thoughtfully written prose.

**Reviewer:** Karen Potvin Klein, MA, ELS, GPC, MWC

Karen (2014-2015 AMWA President) is Director of Grant Development and Medical Editing at Wake Forest University Health Sciences in Winston-Salem, North Carolina.