Reviews and Resources

BOOKS

“To Catch a Virus”

I confess to being what might be called an “accidental virologist,” one of those guys who works on only one or two viruses in a lifetime motivated initially the usefulness of viruses as tools for understanding basic problems in cell and molecular biology. Thus I came to virology through the back door, and after 40 years I’m still learning about the real heroes of virology, those who hunted down these pathogens as novel, perplexing submicroscopic agents of calamity in nature. I have been using and teaching virology techniques for years with little or no appreciation for their origins. Plaque assays, animal models, growth in embryonated eggs, cytopathic effect, inclusion bodies, electron microscopy, ELISA, and hemagglutination, to name a few. Along the way I’ve developed a casual but burgeoning interest in the history of virology. To Catch a Virus dropped into my lap by surprise and filled in a lot of blanks. This is virology history with a twist: it is a history of diagnostic virology.

The authors, John Booss and Marilyn J. August, are undisputed experts in the field and have tackled their topic with rigor and passion. Both trained with the renowned Yale diagnostic virologist Gueh-Djen Hsiung, to whom the book is dedicated, and it is clear that they sought, and succeeded, to honor her memory with a comprehensive and engaging summary of the field.

To Catch a Virus is presented in both topical and historical lines. Most chapters explore a technique, for example animal models, serology, electron microscopy, cell culture, immunofluorescence, or modern nucleic acid-based techniques. Each technique represents a major advance in diagnostic virology so that in aggregate the book covers the entire history of virology by examining major technical advances in a logical historical progression. In addition, each individual chapter comprises a mini-history of a given technique, so that the chapters are knit together with overlapping histories. Included also is a chapter on the evolution of diagnostic virology as a specific discipline and the founding of academic, hospital, and government diagnostic virology laboratories, almost as if the formal administration of the discipline was in itself a technical advance.

Individual chapters comprise an engaging mix of biography and technical description, so that the technical advances are understood in the context of the personalities and passions of the scientists who pioneered them. The book is chock full of delightful pictures and quotes that enliven the presentation. My personal favorite quote is from a prescient discussion in an 1892 paper by George Sternberg: “I believe that there is something in the blood of the immune calf that neutralizes the vaccine virus.”

The book is directed toward a broad audience, however in many places the authors seem to assume at least a modest if not fairly sophisticated background in molecular genetics, cell biology, virology, and immunology. The book would be a struggle at best, or perhaps impossible, for a genuine layperson, but I think there is something for anyone else from a novice to an experienced biological scientist. For the novice it provides an accurate and comprehensive historical foundation for virology. For the seasoned microbiologist it may be a breezy walk down memory lane, with fond recognition of an entertaining cascade of familiar characters.

The writing style is straightforward, clear, and quite readable. It may be a bit dry in a few places that read like a textbook; however, these sections are tolerable for their contribution to the clarity of the work as a whole. More importantly, the material is presented with such clarity that the science and the scientists involved communicate the intrinsic excitement of inquiry and discovery; the science itself propels the work.

While not its main purpose necessarily, I think the book also serves as a compact reference work. Each chapter is scrupulously documented with literature citations, the work is thoroughly indexed, and the authors even include an appendix in outline form that provides a timeline for the advances described in each chapter.

In summary, I thoroughly enjoyed To Catch a Virus and would recommend it to anyone. What we know about viruses and what we can know about viruses is both limited and defined by the techniques used to study them, and therefore this work captures the essence of virology in a historical context. I think it is a fulfilling read for anyone with an interest in virology.

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