

Viruses for Everyone

By Liona Fan-Chiang

A Planet of Viruses

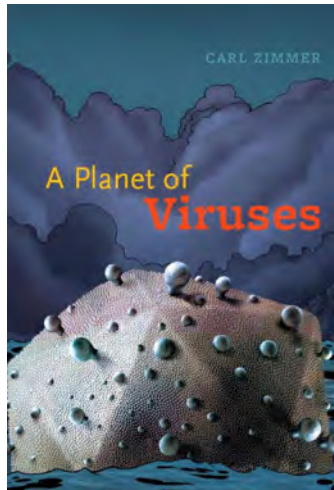
Carl Zimmer

Chicago, Illinois: University of Chicago Press, 2012

Paperback, 109 pp., \$12

The intricacies of what is to most of us a mysterious land, such as the world of viruses, is not easy to communicate without sometimes either generalizing the details or writing a tome. Carl Zimmer managed to avoid both while making the various facets of the study of viruses accessible to any amateur. *A Planet of Viruses* is a collection of short essays written for the World of Viruses project as part of a Science Education Partnership Award from the National Center for Research Resources at the National Institutes of Health. The World of Viruses project (worldofviruses.unl.edu) was created to help people learn more about viruses and virology research through various mediums such as radio documentaries and short stories.

Zimmer traces out the captivating paradoxes which have driven scientists to the several stages of discovery of this field of study. Through this history, the reader will see that viruses are not something one only encounters when they cause disease, but are in fact everywhere, in healthy organisms, in antarctic ice and in caves where no life can be found. We read: "On average, each person has 174 species of viruses in the lungs." In fact, Zimmer, in this little book, has taken on just enough of the subject matter to dispel many commonly held beliefs about viruses, including that disease is necessarily caused by transmission of a virus, that they are always dangerous, and that they are foreign to life. For example, he cites the crucial role of viruses in the evolution of the mammalian placenta, and makes the case that viruses are so much a



part of, and possibly a driver of, the evolutionary process, that it is so hard to tell what is "original" DNA and what is "virus," that viruses may have to be considered part of our identity. This is similar to what we continue to discover about microbes, namely, that of the 100 trillion cells in the human body, only about 10% of these are not bacteria, viruses, or other organisms, posing the question: what parts do we consider "human"?

Zimmer goes into enough detail about the unique characteristics of the most famous viruses such as the viruses associated with the "uncommon" cold, the flu, SARS, HIV, West Nile Virus, as well as common but not so famous ones, to make these mysterious and often frightening diseases more knowable, less a subject of fear and more a subject of study.

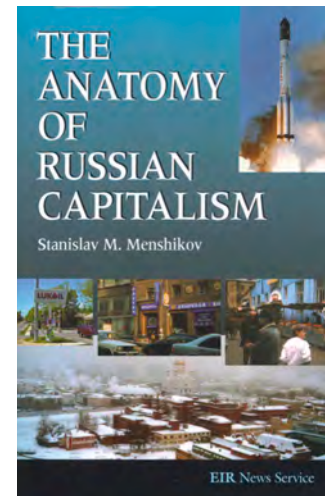
Everyone should have some basic knowledge of the rudiments of what viruses are, if not for the practical reason that we live with them every day, then for the many implications their variety of curious characteristics suggest. For example, while delineating the sharp distinction between the living, inert and bio-inert, Vladimir Vernadsky, the founder of biogeochemistry, points out that viruses alone seem to elude categorization, bridging the

boundary between the living and the non-living. They seem to consist of too little to be living, and yet they actively instigate their own reproduction.

Yet another big question comes from their sensitivity to radiation, for example deactivating into a benign form from UV solar radiation. This raises the question of whether these very influential forces of life have been a conduit for other types of cosmic radiation and flux. There, of course is the better-known case, which Zimmer also cites, of the role of viruses in photosynthesis, but what about their role in other dramatic periods such as the great extinctions, which have been correlated to larger galactic cycles. (footnote – Planetary Defense: An Extraterrestrial Imperative, larouchepac.com)

Above all, as suggested by Zimmer, what will we learn about life, the biosphere, ourselves, and possibly the cosmos, once we come to understand and wield this powerful force of nature?

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