

From the bug's point of view

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Kalpish Ratna, *The secret life of Zika Virus*, Speaking Tiger Publishing Private Limited, New Delhi, pp 271, INR 299 (paperback), ISBN: 9789386582423

"An epidemic changes your life, even if you are not ill" – say Kalpish Ratna¹ in yet another interesting book describing the Zika virus disease outbreak that rocked the Americas in early 2015. Epidemics are important not just because of the suffering they cause, but also due to the fear that they incite in people, sometimes distant from the centre of the disease outbreak. Epidemics are not just biomedical and epidemiological phenomena. An epidemic has strong social, political, economic, historical and cultural influences. Kalpish Ratna begin their book with the recent reporting of Zika virus in three patients in May 2017 in India, and its socio-cultural implications in the country.

The important message from the book is the role of the environment and climate in human health. While most biomedical models for the understanding of disease restrict themselves to the nexus between the host (human), the agent (the Zika virus), and the vector (*Aedes aegypti*), the larger environmental determinants are often ignored. Large areas of Brazil were once covered by forests and rapid urbanisation led to the obliteration of portions of this forest cover. This massive disruption of forest cover could be the major reason for the outbreak of Zika in the area. The role of environmental disruption in human disease has to be considered seriously.

The authors raise some very important questions. One of the most interesting points they raise is whether the *Aedes aegypti* mosquito which is said to be the vector responsible for the transmission of the Zika virus was imported to the Americas from Africa during the slave trade. They report several instances of documented history where illnesses resembled yellow fever in the time of Columbus. They also narrate stories of battles between Spaniards and the Native Americans, where large populations of the soldiers were wiped out by an illness very much like yellow fever. If yellow fever existed in the Americas before the African slave trade, is it possible that *Aedes aegypti* was also native to the Americas?

The book has generous descriptions of the life, work and great contributions of heroes in the field of arbovirus epidemiology, namely, Carlos Juan Finlay, Walter Reed, Jesse Lazear and James

Carroll. Many of these men had been infected by yellow fever themselves and some succumbed to it. The authors use the understanding of the history of yellow fever in the Americas to trace the life story of the Zika virus.

Simultaneously, the authors take off from the Zika virus story to comment on important social and political issues that are current in India and the world. In the chapter on the teratogenicity or ability of the Zika virus to cause malformations in the foetus, they allude to "tolerance" and the current popular discourse of intolerance. They refer to tolerance as "the truce that concedes irremediable and long standing enmity". Objecting to the use of the term "teratology" which is the study of birth defects, as the word in Greek means "monster", they subtly take a political stand against patriarchy and for the rights of persons with disabilities.

As a medical student, I have always wondered how it would be if a microorganism or a bug narrated its experiences of causing illness in a human. I found just such an interesting narrative told from the Zika virus' perspective, as it enters the body of a patient in this book. The description is vivid and helps the reader see the illness from the virus' point of view. When I finished reading the book, I found myself left with more disturbing questions than answers. I think the book was written in this design on purpose. At every point in the book where I thought the authors were arriving at some answers, they posed more questions. Where did the Zika virus come from? Why did it suddenly rise in the Americas? Why is it dangerous? How did it establish a relationship with *Aedes aegypti*? Is *Aedes aegypti* the definite vector of the virus? Why did it suddenly start affecting the brains of foetuses? Is the microcephaly (small head) a new phenomenon? What does identification of Zika virus in India mean? The book urges research in these domains to establish clear answers.

The book has drawn heavily on personal narratives, anecdotes and experiences of the authors. Be it the reference to the metaphorical kaleidoscope and father's kit bag, paediatric surgery and encounters with congenital anomalies, or experience of talking to their own parents about fears of congenital rubella syndrome, all these instances truly resonate with the reader. Compared to their previous book on the Bombay plague epidemic of 1896, this historical narrative has the distinct advantage of being brief and captivating. The non-linear narrative, throwing in of real life anecdotes, embellishment with metaphors and use of landmark quotes, all make the book riveting for someone interested in history and the humanities in medicine.

Note

¹ Kalpish Ratna is the joint pseudonym taken by two authors Ishrat Syed and Kalpana Swaminathan.

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