



Bedbug. Klaus Reinhardt. Reaktion Books Ltd, Unit 32, Waterside, 44–48 Wharf Road, London N1 7UX, UK. 2018. 184 pp. Price: £12.95.

They drink, and drink, and drink – up to three times their own body weight. No wonder, they are called the ultimate binge drinkers. At times, they are too bloated to return to their homes. Their stealthy lifestyle of drinking, and their habit of helping themselves uninvited stirs the strongest psychological fear amongst people. Evolved some 100,000 years ago, the drinking habit of bedbugs has sustained them as a species at the cost of humans, who continue to shudder at the mere mention of these tiny blood-suckers. Their influence on our lives has been unprecedented, pretty much every other bug, including the stomach bug, the computer bug, and the electronic bug carries that name tag.

In his 15 years of research on bedbugs, Klaus Reinhardt, a professor of applied zoology at the Technical University of Dresden in Germany, has found that only two from some 100 odd species of the family Cimicidae are found in our beds. While *Cimex hemipterus* resides in the tropical regions, *Cimex lectularius* dwells in temperate zones. Although bedbug sightings may have declined in many tropical countries in the recent years, increase in bedbug infestation in the UK, USA, Australia and Canada in the past 15 years clearly indicates that they have no respect for class and prosperity. In fact, London was heaving with bedbugs in the early 19th century.

Divided into nine profusely illustrated sections, covering aspects of bug diversity, bug sex and bug forecast, this book provides intriguing, engaging and entertaining insights into the life of an insect that

is as much part of science as fiction. Alexander Dumas sighted bedbugs during his travels; Shakespeare referred to them in his plays: and Queen Charlotte was not ashamed of the infested Buckingham Palace. Throughout recorded history, bedbugs have featured in literature, films, poetry and pop culture. The sci-fi musical ‘Bedbugs!!!’ had a successful run Off-Broadway in 2014. The musical comedy amplified extreme fear leading to paranoia about bedbugs becoming immune to almost all forms of insecticide. In the musical, a mad scientist, Carly mutates New York City’s bedbug population with her super-insecticide to take revenge of her mother’s bedbug-related death. Through the natural history lens, Reinhardt explores how bedbugs became ‘the other’, to represent personal animosity by creating parasitical villains.

The book provides multiple perspectives on an insect that causes more mental despair than any other human parasite, and yet has interesting aspects that call for tolerance towards it. For a species to be all-pervasive, it must have a distinct genetic make-up and a curious sex life. Bedbugs are indeed unique on both aspects. With 14,000 identified genes in the adult bedbug to 36,000 genes for the entire species, researchers are now looking at its genome that can help in the design of pesticides to get rid of these blood suckers. It is still early to suggest if such a possibility has been worked out to any degree of certainty. However, genetic research can indeed help in identifying genes that are associated with blood-sucking, or digestion, or their mating habits.

When it comes to the battle of the sexes, male bedbugs are clear winners as they stab knife-like copulatory organs through the skin into the body of the females. How do females survive such traumatic insemination? and contribute to building multiple progenies? Have female bedbugs invented a set of extra genitalia to cope with traumatic mating? Reinhardt sets aside such bizarre exaggeration to provide a set of possible strategies that female bedbugs may have developed.

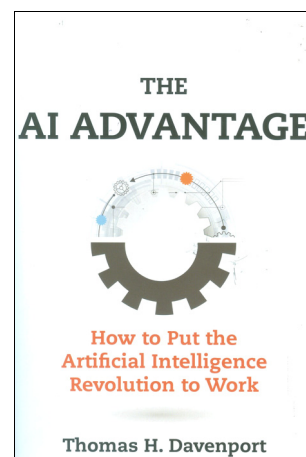
What makes this book insightfully interesting is the manner in which scientific research has been viewed keeping in mind the journey of this insect through history, literature and culture. We may not want to be soft on bedbugs, but the fact of the matter is that it costs more

than it is actually worth. This has led to resistant bedbugs. According to Reinhardt, there is a lot to learn about this profoundly misunderstood insect. The bizarre mating habits of bedbugs have recently led to the development of a homeopathic remedy to cure ovarian pain. It is well known that the flatness of bedbugs had helped Einstein unravel the presence of infinity.

The essential message from this book relates to institutionalization of the fear of bedbugs in identifying other vermin in society from the aim of decimating them. Reinhardt hopes that pest and vermin metaphors will not be used to invite thoughts of social segregation and eradication – like the annihilation of Jews in Germany and the Tutsi genocide in Rwanda. This book informs and entertains, suggesting tolerance as a means of controlling the bug.

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The AI Advantage: How to Put the Artificial Intelligence Revolution to Work. Thomas H. Davenport. The MIT Press, Massachusetts Institute of Technology, Cambridge, Massachusetts 02142, 2018. x + 231 pages. Price: US\$ 19.95/£14.99.

AI depends on mathematics, algorithms, computers. Knowledge creation depends on making conjectures and refutations and serendipity. Human intelligence is