

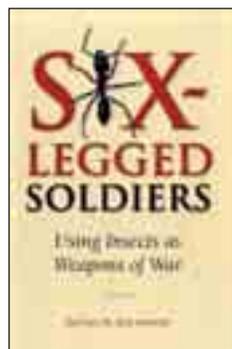
Biological warfare: Six-legged Soldiers

Tales of Crittery and Imagination

Biological warfare has always been a big taboo, and military secretiveness soon resulted in confused conspiracy theories. Jeremy Lockwood's "first comprehensive look at the use of insects as weapons of war", however, doesn't contribute reliable facts, but dozens of unverified urban legends.

Where have all the buzzers gone? In the face of multiple biotic hazards, such as Varroa mites and insect diseases (mostly referred to as colony collapse disorder, CCD), the sudden disappearance of bee colonies and their citizens isn't a phenomenon of the 21st century alone. An ancient version of bee mass mortality is well-documented, although the latter was for a completely different reason.

The bees disappeared because, no kidding, for centuries European military organisations used busy beehives as prickly missiles.



As Jeremy Lockwood, a professor of natural sciences and humanities at the University of Wyoming, tells his readers, the furry honey-makers and their homes were in fact the long distance cruise missiles of medieval times. As "nest bombs", bee hives were catapulted in countless battles between 1,000 and 1,300 CE (and occasionally later on), for example by King Richard's men who terrified the Muslim ranks with the enraged insects during the Third Crusade. In the first chapter of his new book, *Six-legged soldiers: using insects as weapons of war*, Lockwood creates the following scenario,

[Already] the Romans made extensive use of bees, whose hives were far easier to acquire as armaments. So widespread were beehives as catapult payloads that the well-documented decline in the number of hives during the late Roman Empire was probably a consequence of having headed to many of these nests into enemy fortifications.

Lockwood adds,

In the 11th century, the forces of Henry I of England were backed into a corner by the Duke of Lorraine's marauders. The battles turned when the English general ordered his men to launch "nest bombs" into the midst of the Duke's men, who abandoned their assault rather than suffer the wrath of the enraged bees.

300 years later, the hive-heaving machinery reached its technological high, with the development of the Gatling gun's entomological predecessor – a windmill-like device that propelled straw hives from the ends of its rapidly rotating arms.

Entomological predecessor: nicely put! On the opposite side of the front, however, bee hives were part of the defence strategy, by maintaining populations of bees at the parapets, allowing the insects to be ready for producing honey or havoc, as the situation demanded. *The walls of a few medieval castles in Scotland, England, and Wales were equipped with recesses, termed "bee boles," as permanent homes for the bees, [...] generally on the south-facing perimeter walls, which provided a warm setting for [the] cold-blooded insects.*

A lot of speculation exceeds reality

Unfortunately, Lockwood's exiting assessment of human history, using bee-hives as a weapon, has a handicap. He cannot prove it. His verbs are constantly subjunctive, making extensive use of phrases such as "perhaps", "maybe", "could have been" and "might".

In another part of the book's first chapter, Lockwood rehashes old news, filling pages in an attempt to interpret the Bible's ten Egyptian plagues from a modern viewpoint, especially those that involve insects. Reworking speculative opinions – that's old as the hills, Mr Lockwood!



Did the American government unleash plant-hoppers (*Graminella nigrifrons*) and other plant pests against Cuban crops in 1962? Fidel Castro (above) maintained for decades that it did, but could never prove it.

Reaching the epitome of wildcatting, Lockwood repeatedly quotes Pliny the Elder as a source for his "bees' nest" story. Just Pliny! The famous but unreliable Roman natural philosopher who mixed a dash of truth with a good deal of imagination, spinning far-fetched tales of, for example, slugs that pull gold treasures out of fountains and of diamonds that can be destroyed simply by the blood of a male goat.

The whole scary bandwidth

Lockwood's book is about far more than bee hives, of course. In 26 chapters, he spreads the, "unholy trinity of strategies – transmission of pathogenic microbes, destruction of livestock and crops, and direct attack on humans" which has been used by

military and intelligence services throughout history. Lockwood's book is about this often forgotten facet of biological warfare, introducing "cold-blooded fighters", such as beetles, lice, mosquitoes, scorpions, and many more.

Several chapters are about germ weapons, often transmitted by insects. Just think of the native American population that was decimated in the 18th century by contact with Old World diseases, such as the plague, measles, tuberculosis, smallpox and influenza (some maintain that this kind of "germ warfare" was, at least partly, intended by the European conquerors). Or take, as another example of biological warfare, the infamous "Unit 731", a top secret biological warfare research department of the Japanese Army that did human experiments with anthrax, cholera and plague in

the 1940s to develop weapons of mass destruction (and killed, depending on sources, 200,000 to 600,000 people).

Dubious "facts"

Chapters 20 and 21 finally deal with the alleged entomological warfare of the US government against the communist Casto regime in the 1960s, but it is debatable whether planthoppers and leafhoppers (such as *Graminella nigrifrons* and *Pyrrilla perpusilla*) were really used as vectors of plant diseases to destroy Cuban sugar cane and rice.

And again, Lockwood's sources are disappointing. He uses second and third hand quotes, mostly from other authors and their books. His key prosecution witness for the "cold-blooded fight against Cuba" is a persistent detractor of the US government who

cannot deliver any evidence apart from paranoid suspicions. Substantial sources, such as original documents, aren't listed in the book's notes section (the most reliable sources are few statements from an interview that Lockwood conducted with a US military scientist).

All things considered, this is a book on a fascinating topic that is based mainly on speculation. Over nearly 400 pages, the reader has to believe reams of unproven statements and conspiracy theories. Your *Lab Times* editor didn't believe them – and therefore didn't enjoy the book.

WEANÉE KIMBLEWOOD

Jeffrey Lockwood, *Six-Legged Soldiers: Using Insects as Weapons of War*. OUP, 2009. 384 pages, €17.--.

Living with Dormice by Sue Eden

Hidden Rodents in the Backyard

They are invisible, but they are there – says Sue Eden, a retired plant taxonomist and self-taught rodent expert from Dorset, South-West England. She is talking of dormice, small rodents of the family Gliridae, particularly known for their long periods of hibernation. On the British Isles, only the hazel dormouse

(*Muscardinus avellanarius*) is native (it is found in northern Europe and Asia Minor, too). Every British child knows the tiny animal from Lewis Carroll's novel *Alice's Adventures in Wonderland*, where an anthropomorphic "Dormouse" is always falling asleep and awakening, used by the other protagonists as a cushion.

There's more than a grain of truth in Carroll's tale. Dor-

mice really are cuddly and dozy little things, hibernating rolled up in a ball from October to April or May, with their furry tail wrapped around their body. However, as Sue Eden warns in her book *Living with Dormice*, there are a lot of legends to do with dormice. For example, the animal is said to be very rare, at least in England, usually living only in ancient woodland that contains a lot of essential environmental features.

Rubbish, affirms Eden, who regards many of these previous findings as false. "Much has been written about dormice in Britain over the last twenty years", she states, "[but] my own work [...] has uncovered a very different dormouse from that written about". After eighteen years of living with *Muscardinus* in the garden, browsing

through the countryside of Dorset and chatting with naturalists, landowners and many experts, Eden realised that dormice are widespread, plentiful, and anything but rare.

In her fair and beautifully illustrated book (most photos are taken by Eden herself), she does her best to describe her personal view of the animal and to familiarise the reader with it. Every aspect of dormouse life is described: what they eat (not just hazel kernels); where they live (nearly everywhere); who hunts them (owls, for example); how they can be protected by conservation; what their nests are like and how we can easily find them; hibernation; breeding; the construction of artificial nesting sites and many more aspects of this interesting mammal.

By quoting classical literature ("*Stare a dormouse in the whiskers and you're lost*"), Eden encourages her readers to start looking for signs of dormice themselves and to have their own experiences with the cuddly creatures. Her handsome book is the perfect tool for those who are up for learning more about the mystical children's literary characters.

-WK-

Sue Eden, *Living with Dormice*. Papadakis, 2009. 128 pages, €17.50.



Hatter and Hare dunking Dormouse into a teapot (from *Alice's Adventures in Wonderland*, by English author Lewis Carroll).

