

*Six Legged Soldiers: Using Insects as Weapons of War*

Jeffrey Lockwood

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Indeed, all is fair in love and war. For proof, we need only follow author Jeffrey Lockwood as he traces the path of insect weaponization through human history. From imprisoning enemy emissaries in pits filled with flesh-eating beetles, to air bombing rural villages with crop destroying pests, the conscription of six-legged soldiers illustrates perhaps one of the darkest intersections of human ingenuity and depravity.

The book follows a chronological framework; beginning with the earliest documented uses of the “bee grenade” 4,600 years ago by Mayans in Central America and Hebrew tribes in the Middle East. Pulling examples from the Bible, the author makes the case that humans have long been aware of the potential for entomological warfare to, not only cause damage, but to instill fear and panic in the enemy. Citing Exodus, he outlines the role that various scholars have attributed to insects in six of the ten plagues that Yaweh inflicted on Egypt to conquer the Pharaoh.

Thousands of years later in Europe, the Mongols would unwittingly benefit from anonymous six-legged allies when they hurled the corpses of plague victims over enemy walls. It would be hundreds more years before people understood that it was not the rotting corpses, but rather the fleas embedded in the clothing that spread the deadly plague bacteria.

Whether by wrath of god, force of nature, or sheer accident, disease and agricultural damage wrought by insects have repeatedly played a decisive role in the course of geopolitical history. As the book progresses into the 20<sup>th</sup> century, it outlines human attempts to understand and manipulate this potential to their advantages. Here the book offers detailed (at times tiresomely so) accounts of the politics that drove development of modern entomological warfare programs.

Some of the most disturbing material comes from accounts of the Japanese General Ishii Shiro who managed to build an entomological munitions factory during World War II capable of rearing half a billion plague-infected fleas every year. After the war, the U.S. gave refuge to Ishii Shiro in order to learn from him and improve its own entomological warfare program, which, the author points out, has been as much a player in the drama as any other. While many nations may have launched insect offensives since World War II, the very nature of the ammunition makes it difficult to trace, but the U.S. has not been above suspicion. During the Korean War, and again in Viet Nam, the U.S. was accused of using airplanes to bombard villages with insects that decimate crops and spread disease.

The last sections of the book focus on current and future use of insects including robotic bugs that attempt to eliminate dependence on live organisms. Lockwood also describes for us why we are woefully unprepared to respond to an attacker who chooses a biological weapon. For small independent organizations such as foreign or domestic terrorist groups, such a weapon may be an appealing option, and the author is quick to raise the red flag here.

The book is ambitious in the scope of material it hopes to cover and the 36 pages of footnotes reveal the extent of the author's research into the subject. Apparent attempts to be comprehensive led to a confusing assortment of redundancies. I found myself flipping back through previous sections to differentiate material I had previously read. Thankfully, however, Lockwood is adept at writing for a general audience and his book is devoid of heavily technical or scientific terms. He even manages a fair bit of humor despite the gravity of the subject.

In the end, I walked away from this book with two clear messages. The allure of entomological weapons lies in their potential to exact a gruesome, terrifying blow to an enemy simply, remotely, and with little trace as to the aggressor; and history shows us that it is the lack of technology more than the presence of morality that has limited the use of insects as weapons of war.

—Kimbra Cutlip

*Kimbra Cutlip is a science writer for the Smithsonian Environmental Research Center.*