SCIENCE & TECHNOLOGY

Ants Are Us

SIX LEGS BETTER: A Cultural History of Myrmecology.

By Charlotte Sleigh. Johns Hopkins Univ. Press. 302 pp. $55

My favorite 1950s horror film is *Them!*, the one in which giant ants come out of the atomic desert to terrorize Los Angeles. The premise is scientifically untenable, but it seems convincing enough for 94 minutes: Ants have our organizational skills, but none of our mercy. In any fair competition, they could beat us and, as is vividly depicted in the film, strip the meat from our bones. The movie's subtext about females with too much power somehow adds to its creepy appeal even as it offends my politics.

An entertainment like *Them!* feels rich in meaning because we think we see truths about human nature in ant societies. Ants' social lives are so similar to ours that we fall into comparison and analogy. In *Six Legs Better,* cultural critic and science historian Charlotte Sleigh reveals just how irresistible this metaphor making has been even for those who, theoretically, should know better. That myrmecology, the study of ants, has never enjoyed the status of a distinct discipline has much to do with scientists' own obsessions.

One of Sleigh's central characters, the Swiss psychiatrist and early myrmecologist Auguste Forel (1848–1931), saw in ants' cooperative colonies affirmation of his own beliefs about the virtues of socialism. Then there's Harvard entomologist W. M. Wheeler (1865–1937), who, like Freud, saw unhealthy mothering as a corrupting influence. Perhaps that's why he homed in on trophallaxis—the mutual feeding of larvae and their caretakers by regurgitation—as the sort of behavior that is both the basis of society and a symptom of neurosis.

More recently, sociobiologist Edward O. Wilson has stressed simple cues such as pheromones as the media of communication—in ants and humans. His model of organisms building

In the 1954 horror flick *Them!* mutant ants take on larger-than-life roles, but it's their organized raids that are truly terrifying.

complicated behavior out of simple cues, which he propounded beginning in the 1950s, owed something to Cold War thinking. The U.S. military funded a key 1953 conference on animal behavior, encouraging myrmecologists to seek the practical applications of ants. This is just one instance in which myrmecology influenced broader currents of thought. The seemingly minor discipline cast a long shadow, particularly through cybernetics, the study of communication principles common to machines and living things.

At every turn, Sleigh's inquiry leads back to intelligence and instinct, the opposing underlying principles often invoked to explain complex ant behavior. Those terms, used in bewilderingly contradictory ways by scientists in different disciplines, often obscure more than they explain. Some, for example, saw "instinct" as a compilation of learned behaviors that could be inherited; others used it as a synonym for "drive."

Six Legs Better is full of far-flung connections. Sleigh looks into such surprising matters as the poetry of Ezra Pound and T. S. Eliot, the criticism of I. A. Richards, movements for international languages such as Basic English, popular science writing, disciplinary boundaries in academe, and the dystopias of George Orwell and Aldous Huxley. Her digressions are not, as is too often the case in the work of lesser scholars, random samples of her latest reading, but necessary stops on a rich and rewarding journey.

—Gordon Grice

Truth Be Told

THE LIE DETECTORS: The History of an American Obsession.

By Ken Alder. Free Press. 334 pp. $27

Imagine investigating a homicide. As you assess the situation, a shifty-looking character who was seen fleeing is dragged in, but he protests, "I found him dead and ran away!" Lacking other evidence, what do you do?

If you live in prehistoric times, you make the runner swear he's telling the truth and hand him a red-hot iron. The gods will protect a truth teller from harm. If you're investigating the crime in Europe in the 1100s, the higher power invoked is Almighty God, and the Ordeal, as it's now called, may also require immersion in cold hallowed water (liars float) or retrieval of a ring from boiling water. The new insight is that everyone who touches hot things is harmed, but the wounds of truth tellers heal cleanly.

Skip several centuries, in which confession under torture is considered a guarantee of honesty, to 1940s America. The suspect is wired to a machine that graphs blood pressure, pulse and respiration rates, and galvanic skin response, and you ask, "Did you . . . ?" If he falsely denies it, the stress of lying registers as a spike. Case solved. Or maybe not. As this informative and entertaining history of the polygraph's invention makes clear, Americans are every bit as eager as the superstitious folk of earlier ages to embrace simplistic solutions to the complex problem of how to arrive at the truth.

Ken Alder, a Northwestern University historian, focuses on the two main players in the development of the polygraph. There is John Larson, a young Berkeley, California, cop with a Ph.D. in physiology who hoped to introduce scientific methods to police work. After Larson saw an article on blood pressure and deception by lawyer and psychologist William Marston, he developed the first operational polygraph in 1921 and, over a dozen years, refined it and the methods for using it. And there is Leonarde Keeler, a one-time colleague of Larson's who saw in this amazing machine the opportunity to make his mark on the world. Tireless marketer of the "Keeler Polygraph" and owner of a lucrative polygraph firm, he teamed up with his wife to solve headline-making crimes, the two of them becoming a real-life Nick and Nora Charles.

The introduction of the polygraph into 1920s and '30s America, where political corruption and police brutality were common-