

Book Reviews

Jane Maduram

Robo sapiens: Evolution of a New Species

Written by Faith D'Alusio and Peter Menzel
MIT Press
Price:\$29.95



A yellow, glowing head stares from the cover of *Robo sapiens*, eyes and mouth eerily dark as a complexity of wires threads through its face. Against the blurred city nightlife of Tokyo it seems curiously naïve, a half-formed creation looking onto the junction between robots and humans. The indulgent sympathy engendered by this robot melts away, however, when one turns to the title page. There, a baby lies on a bed of multihued, eyeless heads, its own face precisely halved to reveal the mechanical workings within. It is possible to pinpoint the emotions triggered by the photograph as well as their root causes, but it is nonetheless impossible to look at the baby apathetically. Like the Terminator, this robot is both fascinating and terrifying.

Nonetheless, we'll have to wait a while before a grown up Terminator is built. The robots described in *Robo sapiens* are still infants, taking their first steps with either great care or, in the case of some arthropod robots, no care at all. Most are temperamental—a working percentile of 80% is considered rather good—and must be preprogrammed to handle small, specific routines. Compared to the confident predictions of the Sputnik era, this is rather dismaying. But Peter Menzel and Faith D'Alusio, the authors of *Robo sapiens*, bring a perspective to this book that, while not futuristic or skeptical in tone, holds promise of great things to come.

The formatting of *Robo sapiens* is simple—each robot is paired with an set of stats (name, lines of code, sensors, etc.) and a pared-down interview. In many cases, the interview provides not only a basic understanding of the robot but, more significantly, a sense of the personalities that built it. By balancing technological achievements with the very human boasts, frustrations, and predictions of research, *Robo sapiens* allows readers to experience the creation of robots first-hand. In many cases, the conversations are not only informative but also entertaining.

The interviews are wonderful, and D'Alusio has a producer's instinct for the final catch phrase, but the attention-getter in this book is its beautiful photography. Delicate robotic insects share space with backlit tangles of hydraulic pumps and motors that, in turn, stand next to mechanical interpretations of geckos and death-head roaches. Some of the pictures are sublime and some are

startling, but each photo is both detailed and well thought-out. Personally surprising was the fact that photographer Menzel doesn't digitally modify his photographs; it was quite interesting to figure out how some of the odder photographs were created. At times the book becomes almost over-achieving in its quirkiness, but this is a small price to pay for such a superb book. As a tour de horizon, *Robo sapiens* spectacularly succeeds at capturing the potential of robotics.

A Rum Affair: A True Story of Botanical Fraud

Written by Karl Sabbagh
Farrar, Strous, & Giroux
Price:\$24

When the author starts a botanical book by detailing obituaries—"Due to an inspired misprint in The Times obituary he was described as being 'survived by many nephews and pieces.'"—you know the book's going to be a bit odd. But add in a ethics-driven teacher of classics with a volatile professor accused of fraud, and you've got the makings of a scintillatingly lovely read. Karl Sabbagh swoops through the mundane verbiage of scientific journals to address the 'botanical scandal of the century', the psychology of scientists, and class ranking in academic circles.

This book revolves around the "botanical scandal of the century," a case that polarized its botanist community. The scandal was a simple example of "If your data doesn't fit the theory, change the data," but what makes it so distinctive is the fact that the perpetrator of the crime, though 'convicted', kept his tenure and had a rather comfortable retirement. The sole public acknowledgement of his guilt was a bewilderingly circuitous letter to Nature that made sense only with inside information. Still more puzzling was the guilt experienced by the man who exposed the forgery.

Sabbagh explains each of these puzzles, using primary sources to track his hunt for the personalities and context involved. He evenhandedly chooses sources from both sides, impartially



building an impenetrable case against the professor. Along the way, he entertains the reader with his understated dry wit. While in the library, he remarks that "I have read a lot of scientific literature, although to call it literature in the usual sense of the word is to give it more credit than it deserves. Most scientific papers serve very specific purposes, and providing enjoyment to the reader is usually not one of them."

This book is wonderfully written and, though one might think it is impossible to twist nonfiction, Sabbagh finds a way to elegantly deconstruct within the last few pages the impenetrable case he built up earlier. This book must be read; it provides a searing glimpse into how science is based not only on facts but on human behavior.

Defending the Cavewoman: And Other Tales of Evolutionary Neurology

Written by Harold Klawans, MD
W.W. Norton
Price:\$24.95

The historical view of early humans has been male-dominated—as active participants in hunting and building, men were presumed to be key in promoting the survival of modern humans over Neanderthals. In his book, Dr. Harold Klawans states that women, instead, played a primary role in introducing civilization and promoting human survival. In order to support this theory, Klawans marshals a wide array of cases to trace the evolutionary beginnings, both physical and cultural, of many mental mannerisms.

The book is divided into self-sufficient chapters, each of which is loosely tied to the evolution of the mind over a single lifetime or a few million generations. Some chapters are more relevant to this thesis than others; all are entertaining. Klawans generally starts off with a single case study, which he analyzes both clinically and personally before elaborating and explaining its interesting points. Such a format may be cumbersome, but Klawans livens it with his conversational format. The style is more suited to a dinner party than a lecture and, as such, is eminently readable.



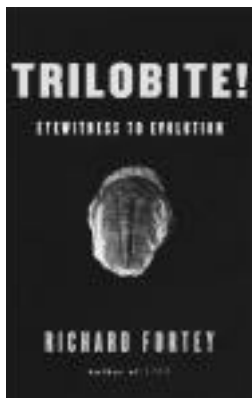
At times, the book can be repetitive; Klawans seems to have the odd notion that a forewarning is needed in nonfiction books. Because of this, facts that make sense only in context of the chapter's resolution are often stuck inconveniently in the beginning. At times, his wording is grating, especially when he uses extremely short sentences to delineate emotion. Such style is appropriate for tension-packed scenes (i.e. a survival story by Gary Paulson), but it doesn't really fit a café conversation at lunch.

Besides these pet peeves of mine, *Defending the Cavewoman* is enjoyable. The facts presented are rather interesting, and Klawans obviously has command over a wide range of information, both cultural and scientific. Incidentally, the book relies heavily on a construct by Professor Steven Pinker (course 9) and, as such, may be particularly interesting to MIT students.

Trilobite: Eyewitness to Evolution

Written by Richard Fortey
Alfred A. Knopf
Price: \$26

Trilobite begins in a bar and, in a sense, stays in it for the remainder of the book. It is by turns rambling and succinct, intriguing and wearily descriptive, philosophical and literary. And, for the most part, it's good. Fortey is a great storyteller, and he is at his best when describing his work. The past is, perhaps, more real to him than the present, and he passionately visualizes giant ancient seas, tenderly paying attention to the vast minutiae distinguishing trilobites from each other. Admittedly, trilobites aren't animals I'm particularly intrigued with, but Fortey brings such verve to the subject that



it is impossible to avoid being, at the very least, interested in his interests.

Perhaps the most interesting facet of the book are the explanations of how paleontologists puzzled out such conundrums as how trilobites got around and how it saw the world.

Finding out how decomposable parts of the trilobite were explained by fossil remains was absolutely exciting, as were Fortey's description of the people working on this puzzle: "One can imagine that he would have reported almost any discovery in like fashion: 'Found Holy Grail this a.m.; have expectations of Excalibur tomorrow.' Trilobites were never the same again." Fortey's gift is an ability to accurately capture the wonder of biology and the joy of solving a research puzzle.

Perhaps more entertaining than that is the good humor with which Fortey acknowledges that his work is absolutely useless—or rather, inapplicable to the military or medicine, in his words. In that, he states that his view of the scientist is more Professor Calculus than Dr. Strangelove. "Try as I might I cannot devise a scenario whereby trilobite science is appropriated by a totalitarian regime to oppress the people. 'Aha, Mr. Bond! You have arrived just in time to witness the triumph of the trilobites, and the end of the human race.'" And despite the hard work involved—I, for one, do not plan on digging up stones in Welsh ditches in the rain—he truly enjoys his work. And that is why his book succeeds. 📖