

It's worth stepping back from the daily grind now and again, to ask the questions humans have thrashed out for millennia: Where did we come from? What are we doing here? Where are we headed? It takes curiosity to ask the questions—and it takes humility to follow when they lead us into unfamiliar regions.

Time was, we found consolation and comfort in the thought that we arrived at the behest of a Supreme Power who put us in charge of Earth's flora and fauna, and into whose arms we would return at life's end. Charles Darwin gave a new wrinkle to this thought by postulating we had evolved in the course of millions of years, and from very modest ancestral beginnings; still, his view on evolution confirmed human supremacy among the teeming multitudes. We had evolved to the pinnacle of natural selection. We were the fittest of species; other life forms were in service to our needs for food, shelter, and clothing.

Along comes Richard Leakey, famous son of a famous father and paleontologist extraordinaire, who finds that fossil records show, life has not been a steady progression through Earth's history. Special though humans are in many ways, "We are merely an accident of history. We did not arrive as if from outer space, set down amid a wondrous diversity of life, blessed with the right to do with it what we please. We, like every species with which we share the world, are a product of many chance events, leading back to that amazing explosion of life forms half a billion years ago, and beyond that to the origin of life itself . . . in a fundamental sense *Homo sapiens* is on an equal footing with each and every other species here on earth." He adds as fact that "one day *Homo sapiens* will have disappeared from the face of the earth" like many other species who up and vanished after their moment in the sun.

Nathan Wolfe, professor of human biology, speaks from a different angle on the same subject. A virologist by calling, he finds that "the unseen form of life," by which he means viruses, bacteria, archaea, and microscopic eukaryotes are more numerous than the "seen" forms we humans recognize—and "the truly dominant life on our planet." Apparently the minuscule critters live everywhere, even on our eyelashes. If someone were to put together "an encyclopedia of life based on which things made up most of Earth's diversity and biomass, the majority of it would be devoted to the unseen world," he writes in "Viral Storm," and only "a few slender volumes would be dedicated to the things we normally equate with life: fungi, plants, and animals. Fore better or worse, humans would make up no more than a footnote in the animal volume—an interesting footnote but a footnote at best."

As an example of non-human domestication, Wolfe cites the well-known phenomenon of leaf-cutter ant colonies as agrarian societies that go back millions of years. These ants raise their own food by way of beds of fungi fertilized with chopped-up pieces of leaves. "Like human farmers, the ants have agricultural pests," he observes, namely fungi parasites who've been "along for the ride from the beginning." And like human farmers, the ants figured out a pesticide: "They cultivate a species of bacteria that produce fungicidal chemicals that help the ants control their vermin." Cultivation leads to concentrated populations, he notes, with "higher burdens of parasites."

Jonathan Balcombe, who has studied animal behavior for thirty years, is similarly determined to debunk the notion of human superiority. "It's time we stopped viewing wild nature as a constant,

joyless struggle,” he writes in “Second Nature.” Animals are sentient beings with lives rich with glimmers of empathy, consciousness of self and companions, and strategies of problem-solving. They suffer pain and elation just as humans do. “However our existences compare with those of other animals, I cannot imagine that they could have no intrinsic worth.”

Balcombe argues as Leakey does, that having more humans on earth improves neither the lives of humans nor those of animals. “In tropical regions, local population density has been directly correlated to the poverty status of the local people, most of whom lack education in family planning,” he cites one of his sources. That public policy will not address population and poverty problems he deems utterly short-sighted. He wants a world with fewer people who share the responsibility to reproduce below replacement. Climate change and greenhouse-gas emissions cannot be addressed effectively so long as human populations keep expanding. He conjures up a scenario where, in a few centuries, humans stand shoulder to shoulder across the planet’s surface with no room to spare.

When it comes to food animals, he wishes we would stop eating them. He abhors the manner in which these animals are raised. Besides, the current rate of their production is unsustainable: “Animal husbandry takes up more land than any other activity by humans, and it accounts for 70 percent of all human consumption of fresh water. Meat production causes more greenhouse gases to be released into the atmosphere than does all global human transportation combined,” he writes, citing statistics. As for wild animals, many of whom we hunted to extinction long ago, he would sympathize with Richard Leakey’s view of humans as an “invasive species” who have decimated animal communities for thousands of years.

Mass extinctions merit special consideration in Leakey’s “The Sixth Extinction.” Many people understand that asteroid impact wiped out the dinosaurs after their tenure on Earth of 140 million years, but few of us recognize that the daily cutting of tropical forests and encroachment of wild habitats, though a less dramatic process, will bring about a similar end. “Insidiously, a mass extinction is occurring . . . we treat the world as if it can withstand each of our assaults without harm, but we do so at our own peril.” The interdependence of life forms means humans cannot flourish without nature’s flora and fauna.

Leakey is in sorrow over the species wiped out every single day by human rapaciousness, “soon to reach 100 per day, four per hour.” Large numbers of plants are being wiped out, which is unprecedented compared to past crises. The most vulnerable species “are those whose geographical distribution is limited, those in and near the tropics, and those with a large body size.” And each time human action results in the extirpation of a species, we take another shortcut to our own impending oblivion.

Laurence Smith in *The World in 2050* sounds the sixth-extinction alarm bell also, and like Leakey, from the perspective of vanishing species. Smith looks at projected extinctions due to climate change. “Depending on the emission scenario used, one model projects that anywhere from 15% to 37% of the world’s species will be committed to climate-change extinction by 2050,” he writes. “If these numbers hold true, they are devastating,” he says.

The Sixth Extinction is human-produced and ongoing. We are witness to the phenomenon, and we are the engine that drives it.