

8-1-2013

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Recommended Citation

Dowling, Matthew (2013) "God's Care for Creation: An Ode to "The Little Things that Run the World"," *Leaven*: Vol. 21: Iss. 3, Article 7.

Available at: <https://digitalcommons.pepperdine.edu/leaven/vol21/iss3/7>

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God's Care for Creation: An Ode to "The Little Things That Run the World"

MATTHEW DOWLING

I remember the first time I fell in love with insects. It happened on a sweltering August night in rural Oklahoma where I sat in an antiquated biological station on the shores of Lake Texoma, hovering over collection boxes of what must be God's favorite little creatures: the beetles.¹ It was midnight—I was an undergraduate zoology major—and I had been up collecting and identifying insects for 24 hours. For a budding entomologist it was heaven.

As I sat that night hunched over my stereo microscope, tweezers in hand, arranging God's resplendent hexapodian beauty, I understood very little about the surpassing importance of invertebrates—the "spineless" majority of organisms which comprise about 95 percent of all described species in kingdom *Animalia* (of which the insects are a significant part). And yet, as I would eventually learn, there is much to be thankful for when considering these diminutive creatures that often run around underfoot.² Among their many indispensable "ecosystem services" they are the pollinators upon which our agricultural industry depends.³ As some of the world's greatest ecosystem engineers, marine and terrestrial invertebrates provide physical structure to entire biomes. For example, the demise of coral reefs and the animals that produce them would prove catastrophic for nearly 25% of all marine species that call them home.⁴ They literally create these "rainforests of the sea."

The well-known Harvard biologist E.O. Wilson, well known for his contributions to the studies of sociobiology and social insects, has called invertebrates "the little creatures that run the earth."⁵ In a landmark address arguing for greater funding for invertebrate conservation, he remarked upon their importance in the plainest terms:

1. The Coleoptera (beetles), with an estimated 350,000–375,000 describes species, is far and away the largest insect order (one out of every three described animal species is a beetle). See Richard C. Brusca and Gary J. Brusca, *Invertebrates*, 2d ed. (Sunderland, MA: Sinauer Associates, 2003), 590. The great twentieth-century ecologist G. Evelyn Hutchison states: "There is a story, possibly apocryphal, of the distinguished British biologist, J.B.S. Haldane, who found himself in the company of a group of theologians. On being asked what one could conclude as to the nature of the Creator from a study of his creation, Haldane is said to have answered, 'An inordinate fondness for beetles.'" See G.E. Hutchison, "Homage to Santa Rosalia or Why Are There So Many Kinds of Animals?" *American Naturalist* 93 (1959): 146.

2. Two researchers, Losey and Vaughan, attempted to quantify the economic value of ecological services provided by insects. Not able to provide a complete assessment of all services insects provided, they restricted the focus of their study to four services: dung burial, pest control, pollination, and wildlife nutrition. They estimated that just in the United States, the annual value of these services was \$57 billion. N.B. this estimate is for only *four* services in *one* country—consider then the global impact of insects. John E. Losey and Mace Vaughan, "The Economic Value of Ecological Services Provided by Insects," *BioScience* 56 (2006): 311–323.

3. Recent news of the decline of honey bee populations due to Colony Collapse Disorder has made their relative value better appreciated.

4. M.D. Spalding and A.M. Grenfell, "New estimates of global and regional coral reef areas," *Coral Reefs* 16 (1997): 225.

5. Hence the title of the present article. Edward O. Wilson, "The Little Things That Run the World (The Importance and Conservation of Invertebrates)," *Conservation Biology* 1 (1987): 345.

The truth is that we need invertebrates but they don't need us. If human beings were to disappear tomorrow, the world would go on with little change. Gaia, the totality of life on Earth, would set about healing itself and return to the rich environmental states of a few thousand years ago. But if invertebrates were to disappear, I doubt that the human species could last more than a few months. Most of the fishes, amphibians, birds, and mammals would crash to extinction about the same time. Next would go the bulk of the flowering plants and with them the physical structure of the majority of the forests and other terrestrial habitats of the world. The earth would rot. As dead vegetation piled up and dried out, narrowing and closing the channels of nutrient cycles, other complex forms of vegetation would die off, and with them the last remnants of the vertebrates. The remaining fungi, after enjoying a population explosion of stupendous proportions, would also perish. Within a few decades the world would return to a state of a billion years ago, composed primarily of bacteria, algae, and a few other very simple multicellular plants.⁶

Wilson's dire prediction is undoubtedly true. My experience as an insect biologist in far-ranging places like the prairies of Oklahoma and the Neotropical rainforests in Central America has taught me that invertebrates are indispensable to life on Earth. The sheer diversity of invertebrate animals is astounding but few are large enough to really impose themselves on our senses, hence you will be forgiven for perhaps overlooking them most of the time. I'll admit my own oversights too. That is, until my training in entomology sharpened my eye for the little things flitting here and there. Granted, you'll find me in a pastor's study these days, not in an entomology lab. I love being a preacher, and yet once an entomologist, always an entomologist. The vocational leap from biologist to Christian minister was neither a small move nor an insignificant spiritual journey. But I've never lost sight of the natural world, and the connection between the two spheres has taught me much about God and creation care—or more specifically—God's ways of caring for creation and how it cares for us.

First, it has taught me to be more imaginative when I consider the operation of God's common grace in the world around us. "Common grace" is God's bestowal of a variety of gifts and blessings on Christians and non-Christians alike, such as health, intelligence, friendship, vocation, family, government, art, science, etc. (Acts 14.16–17; cf. Luke 6.25–36, Matt. 5.44–45, Rom. 13.1–7).⁷ In terms of common grace and the physical realm, insects and their invertebrate kin are the basis for food chains across the globe in terrestrial, marine, and freshwater environments. They are the decomposers and recyclers that make life possible and sustain it around the world. If not one sparrow will fall to the ground without our father God knowing about it (Matt 10.29), then be assured there will be insect recyclers there to return its carbon, hydrogen, oxygen, nitrogen, and other trace elements back into the soil to be used for the next generation of life.

If these organisms are the bedrock of a functioning ecosystem, which gives life to the "just and the unjust," why shouldn't I broaden my imagination for what exactly constitutes common grace? As Wayne Grudem observes "the earth does not produce only thorns and thistles (Gen. 3.18), or remain a parched desert, but by God's common grace it produces food and materials for clothing and shelter, often in great abundance and diversity."⁸

Second, inhabiting the worlds of ministry and biology has taught me that it is all too easy to be indifferent towards all the dire news we hear about the demise of the natural world. When I was working as a biologist, I was keenly aware of the Earth's pressing concerns, such as habitat destruction, pollution, declines in biodiversity, and global climate change. At that time, I was more apt to be engaged. As a minister, in the work-a-day world of the church, I admit it is easy to forget and become apathetic about creation care. And yet, I am reminded of scripture's warnings about laziness and sloth and I don't want to be an unconcerned steward of creation. Call it the pedagogy of the invertebrates—I think the animals have much to teach us.

Perhaps appropriately, animals form part of the wisdom lore regarding wisdom and work in the Hebrew scriptures: "Go to the ant, O sluggard; consider her ways, and be wise. Without having any chief, officer, or

6. Ibid.

7. Michael Horton, *The Christian Faith: A Systematic Theology for Pilgrims on the Way* (Grand Rapids, MI: Zondervan, 2011), 992.

8. Wayne A. Grudem, *Systematic Theology: An Introduction to Biblical Doctrine* (Grand Rapids, MI: Zondervan, 2004), 658.

ruler, she prepares her bread in summer and gathers her food in the harvest. How long will you lie there, O sluggard? When will you arise from your sleep? A little sleep, a little slumber, a little folding of the hands to rest, and poverty will come upon you like a robber, and want like an armed man" (ESV, Prov. 6.6–11, cf. Job. 12.7; Prov. 24.13–16, 30.24–30).⁹

What might we learn from the ant? And what is the moral of this "example story" from Proverbs?¹⁰ Not to misappropriate or overextend the text, but if we are "sluggardly" towards the vocation of creation care, we risk being guilty of the attitudes of the "lazy one" in the story: slothful and finding no significance in our calling as stewards of creation (v. 6); lacking initiative unless the work of creation care is forced on us (v. 7); procrastinating and putting off for the next generation what we must be responsible for today (v. 8); and finally, "sleeping" through the current ecological crisis as the winds of anthropogenic change brew on the horizon (vv. 9–10).¹¹ And apathy will reap its reward: when the crashing decline of biodiversity has had its way, we will all be the poorer, the victims of an armed man we alone have devised (v. 11).¹²

Is this all just fanciful bluster from a self-confessed bug lover? Perhaps. But it is sentimentality born out of a love for organisms that we know are threatened—organisms that I think add inestimable beauty (and functionality) to the world.¹³ I haven't told you yet, but as an entomologist I specialized in ants. The scientific title I held was *myrmecologist*. One of my favorite moments as a myrmecologist was a moment I'll never forget—the day I stood in the middle of an army ant raid on Barro Colorado Island in Panama. It was like standing in the middle of a river of life. The forest floor shimmered around me as hundreds of thousands of ants broadened out into a fan-shaped foraging horde and raided all the food that the forest had to offer. I was thankful that day for my knee-high wader boots with their liberal application of DEET repellent keeping the voracious beasts off my legs! The species swarming around me was *Eciton burchellii*—the archetypal army ant of the New World tropics.

A foraging swarm of these ants is really an incredible thing to see. Not only are there the ants, but also a whole entourage of other animals following the swarm and benefiting from the ants flushing everything out of the forest floor. There are antbirds, which follow the ant raiders and nab every flying insect trying to escape the ant horde, and beautifully colorful *ithomiine* butterflies which look like little pieces of flying stained glass. Amazingly, these butterflies "drink" from the droppings of the ant birds, mostly to benefit from their salt and mineral content. The army ant colonies travel with a veritable bestiary. There are beetles, bristletails, and silverfish that run in the columns of the ant raiders and a more motley crew one would be hard-pressed to find. Entomologists have determined that there are 557 different organisms that associate with *Eciton burchellii* colonies—which is the largest described animal association centering around one particular species.¹⁴ Thus, the extinction of *Eciton burchellii* from any habitat would mean the likely extinction of numerous organisms that associate with the colony.

The third thing I have learned about God and creation care is that it is much easier to care for creation when one has a personal connection to the natural world. E.O. Wilson would describe the joy and fascination I

9. Rowland E. Murphy, *Proverbs*, in *Word Biblical Commentary* (Dallas: Word, 1998), 38.

10. Ibid. "Example story" is Murphy's phrase.

11. Michael L. McKinney, "High rates of extinction and threat in poorly studied taxa," *Conservation Biology* 13 (1999): 1273–1282. McKinney predicts that at least a quarter of all insects are faced with extinction as a direct result of habitat loss and landscape transformation due to direct competition with human resource use.

12. Biodiversity declines are well documented for invertebrates. A good place to start is the IUCN (International Union for Conservation of Nature) Red List of Threatened species report titled "Spineless: Status and trends of the world's invertebrates" edited by Ben Collen, Monika Bohm, Rachael Kemp and Jonathan E.M. Bailie. Accessed online at static.zsl.org/secure/files/spineless-report-online-9mb-2027.pdf (accessed April 22, 2013). The sobering report, issued in 2012, suggests that nearly one-fifth of the world's invertebrates may be threatened with extinction.

13. Ibid.

14. Five hundred and fifty-seven organisms "associate" with the army ants, and 300 of them depend on the ants, at least in part, for their existence. C.W. Rettenmeyer, M.E. Rettenmeyer, J. Joseph, S.M. Berghoff, "The largest animal association centered on one species: the army ant *Eciton burchelli* and its more than 300 associates," *Insect Societies* 58 (2011): 281–292.

experienced that day in the neotropics with the army ants as *biophilia*.¹⁵ *Biophilia* is “the innate tendency to focus on life and lifelike processes.”¹⁶ I admit that my life has been richer as I have focused, both professionally and as an amateur naturalist, on life’s rich pageant, expressing my own brand of biophilia.

Some have jokingly suggested that there are two kinds of entomologists in this world: lovers and killers. I am confessedly the former, thus this love letter to the small things in this world that have enriched my life and are, in my opinion, a sure sign of God’s common grace. They really are the little things that run the world, and we are better off because of them. My hope is that as theologians and pastors, we can continue to articulate why it is that we need to be concerned about creation care, which the other contributors to this issue of *Leaven* have undoubtedly done. I hope a portion of the answer, at least in part, is because we love the natural world and the things that inhabit it. As Wilson notes, “Humanity is exalted not because we are so far above other living creatures, but because knowing them well elevates the very concept of life.”¹⁷ Indeed.

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15. Edward O. Wilson, *Biophilia* (Cambridge: Harvard University Press, 1984).

16. *Ibid.*, 1.

17. *Ibid.*, 22.