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Review: Under Ground: How Creatures of Mud and Dirt Shape Our World

By Yvonne Baskin

Reviewed by [Kathy Piselli](#)
Atlanta-Fulton Public Library, USA

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Yvonne Baskin, with illustrations by Joyce Ann Powzyk *Under Ground: How Creatures of Mud and Dirt Shape Our World*. Washington, DC: Shearwater Press, 2005. 256pp. ISBN: 1-59726-003-7 (paperback); US\$26.95.

After about the age of 12 it is not easy to find popular reading material about those worms that fascinated some of us so much as children. So if you were a child who loved reading about garden critters, you will be delighted with this book on soil animals. A self-described "obsessive gardener," science writer Yvonne Baskin has produced a fascinating book written for adults, with engaging line drawings by science illustrator and biology professor Joyce Ann Powzyk.

Baskin begins with Mars. She had a bone to pick with reporters who described what NASA's Rover mission was finding on Mars as "soil" for, as she points out, the definition of "soil" implies "life," and so far no life has been found on Mars. On Earth, rock becomes "soil" by harboring "the most diverse and abundant web of life known in the universe," perhaps more biologically diverse than the Amazon rainforest aboveground. These creatures literally shape our world.

In spite of their critical role in our existence, the world below ground is not well studied. Microbes are not as fetching as baby chimps or as exciting as big cats. Yet Baskin manages a tour of some pretty gripping stuff, for a denizen of the underground can be an organism larger than a blue whale, heavier than a cow, or able to live in unbelievably forbidding places.

The individual chapters comprise a worldwide travel itinerary. Baskin journeys with scientists of the international Scientific Committee on Problems of the Environment (SCOPE) to study nematodes in Antarctica, microbes in Yellowstone, and fungi on Vancouver Island. Along the way she explains the role of soil animals in maintaining the earth "in a life-friendly state."

Do not miss Powzyk's rendering of tardigrades, or water bears, on p. 45. A children's cartoonist could not have invented such a creature from the imagination. These animals, about the size of a tiny dot, live all over the globe, including three species found in Antarctica. Among their skills is a

"talent for time travel." With a normal lifespan of less than a year, in time of drought, they can go dormant in a desiccated state for decades, awaiting the return of the water they need for life.

Those following the issue of the Gulf of Mexico's dead zone may be interested in the chapter on "Microbes, Muck & Dead Zone." Most people who know about the problem think of agricultural runoff and the excessive amount of nitrogen pouring into the Gulf from runoff via the Mississippi River. Baskin explains the process of denitrification from the point of view of the one-celled organisms that do the work. By understanding this process, it will be possible to identify individual species with the ability to clean up environmental pollutants that threaten human health.

SCOPE's more technical work product is titled "Sustaining Biodiversity and Ecosystem Services in Soils and Sediments" (SCOPE 64). It was edited by Dr Diana H. Wall and published by Island Press in 2004. "Under Ground" is suitable for audiences at high school level and up.

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