



DOWN TO EARTH

with

FRANCIS D. HOLE

by Terry Devitt

To Francis Doan Hole, distinguished soil scientist, geographer, author, and teacher, the cast of the earthworm is a piece of art, worthy of song and drama. A soil profile in Hole's eyes, assumes the proportions of works by the old masters. There is in soil, says the seventy-four-year-old Hole, even humor, as well as the power to make us pause, enjoy, and of course learn something.

For thirty-seven years at the University of Wisconsin until his retirement in 1983, the slight and bespectacled Hole was a familiar sight on the rolling hills of the nine-hundred-acre campus, leading his classes on long treks that would leave the much younger students puffing in his wake. He had, in the words of one of his graduate students, "the energy of fourteen people."

Now, five years after retiring as a professor of soil science and geography, Hole still displays boundless enthusiasm for the soil and is still having fun spreading the message of earth science. On any given day, Hole, using what for a university professor are most unusual props—a violin and a suitcase full of puppets—will preach the gospel of the soil to college students, preschoolers, church groups, and anybody

else who has the time and inclination to learn about what's underfoot. "Teaching," Hole once told an interviewer, "is a beautiful idea. There are no losers in the classroom, only winners."

"If you're going to get people to pay attention to the soil, you may have to stand on your head."

Hole was not only an unorthodox teacher, but also one of the most respected, winning the university's highest teaching award in 1974. What was truly important to Hole was the knowledge that he was getting through to students and that they were enjoying themselves in the process. "I disagree with the notion that if students are having fun they're not learning," says Hole. "If you're going to get people to pay attention to the soil, you may have to stand on your head."

Hole's course on the geography of Wisconsin was one of the most popular on campus. At the beginning of the semester, Hole would present a pressed maple leaf to each of his students and invite them to imagine

the fragile leaf as a symbol of the state's delicate environment: something beautiful but taken for granted and easily destroyed. An inveterate showman, Hole would one day lead his class in choral renditions of "The Geography Chant" and on the next deliver a

"People need to understand that if the soil can support a beautiful thing like a flower or a tree, then the soil itself is beautiful if not more beautiful."

lecture on the historical geography of the circus, which, we learn, was originally called a "mud show" in honor of the soil.

Then there are Hole's trademarks, the ever-present violin and puppets. An accomplished musician with a penchant for Bach, the professor, to underline a point during one of his lectures, reaches for his fiddle and begins the "Soil Fantasy," a medley of sounds created to stimulate the imagination of his students. "There are various tricks you can use to associate violin sounds with what you want to talk about," Hole explains. "You can make a harsh, gritty sound for sand. People are very amused that I can make such a disagreeable sound, but that's what sand is-gritty and scratchy. Clay is always a trill and silt a smooth sound. The point, though, is to get people to think about these various components of soil."

To reinforce the lesson of the violin, Hole relies on puppets Bucky Badger, Terra Loam, and the misunderstood Erosion. Using the puppets, Hole shows how erosion is something that occurs naturally, but holds the potential for disaster when driven by the activities of human beings. "In the skit, Erosion is a victim as much as soil is," Hole explains. In Hole's puppet drama, Erosion reprimands the human race for neglecting its responsibilities for soil stewardship.

Hole's traveling puppet show faced its most formidable audience in 1983, when the UW professor and a gaggle of lobbying children invaded the hearing rooms of the Wisconsin State Capitol to put their political weight behind a Hole-inspired measure designating Antigo silt loam the official state soil. It was, in the words of then-Governor Anthony Earl, a "dirty job," but the measure passed and Wisconsin became the second state, after Nebraska, to have its own official soil. (Vermont became the third in 1986.) It took Hole, with the help of squads of children and several key legislators, seven years to accomplish his aim. "I remember the pleasure with which the children sang the state soil song, 'Antigo! A soil to know!...' We even had Antigo silt loam T-shirts, with a picture of the Antigo soil on the front and the state soil song on the back," he reminisces. "Of course," he adds, "there were people that tried to

derail [the legislation] over the years. It was regarded as somewhat silly."

But to Hole there was nothing silly about it. Anointing that particular composition of earth as the state soil was a way to educate people about the importance of soil as a life force. "Soil is a stage that holds up every actor on the earth and nourishes them," he explained to an interviewer at the time. "It's the basis for all other things."

Why Antigo silt loam? "There are 550 soil types in Wisconsin and we had to pick one. We had to pick a representative one. Antigo silt loam is versatile: it supports dairy farms and vegetable farms and forests. And it doesn't leak over into other states much." As is the nature of politics, parochial interests in the state legislature championed other soils-Kewaunee red clay, Waukesha clay, and Suamico muck-but Antigo silt loam garnered broad bipartisan support, and in September of 1983 a bill designating the preferred loam as the official state soil was signed into law.

Hole's earth science evangelism springs from his early family life in Indiana. Born to Quaker parents in Muncie on August 25, 1913, Hole was deeply influenced by his father, Allen David Hole, a geologist who, in Hole's words, "ran a one-man geology department and museum at Earlham, a Quaker college in Richmond, Indiana. But after receiving his undergraduate degree in geology and biology from Earlham in 1933, Hole pursued a master's in French at Haverford College and went on to teach at preparatory schools near Philadelphia. Summers were spent honing his skills in language and literature. It was during one of those vacations that his interest in the earth sciences was rekindled. "In the summer of 1937, I was studying French and German at Harvard and was just resting my eyes when I saw their geology collection. 'What am I doing here studying the neuroses of poets?' I asked myself. 'I want to get back to rocks and mountains.'"

He left teaching to earn his doctorate in geology and soils at the University of Wisconsin and then returned to Earlham as an assistant professor of geology and acting curator of the Joseph Moore Museum. In 1944, Hole the Quaker faced his greatest test. World War II was raging in Europe and Asia, but Hole, because of his strong pacifist beliefs, refused induction into the military. Along with some twelve thousand other conscientious objectors, he was interned by the U.S. government. "It wasn't popular at all," recalls Hole. "You were obviously a traitor because you didn't want to kill to stop Hitler from walking all over us. In the camps, there was every sect imaginable and atheists, too. We were free labor." Bounced from camp to camp, Hole worked sixteen-hour days to clear trails in Great Smoky Mountain National Park and at one point was assigned to the Coshocton, Ohio, laboratory of the U.S. Department of Agriculture's Research Service.

In 1946, Hole received an invitation to join the



MICHAEL KKIENTZ

faculty at the University of Wisconsin—"the greatest thing that ever happened to me," he claims. His appointment was split between soil science and the soils division of the Wisconsin Geological and Natural History Survey, and he later was given a third appointment in the university's geography department. "That looks like a real dumb setup but it worked to my advantage because it gave me a chance to grow."

Over the course of his career, Hole authored more than fifty technical papers and was a coauthor of *Soil Genesis and Classification*, a standard soil science textbook used throughout the United States.

Despite a full academic schedule, Hole was for many years a member of the Madison Symphony Orchestra and, in a city brimming with activism, has been one of Madison's best-known peace advocates. During the Korean War he counseled conscientious objectors and as far back as 1960 was involved in protests against U.S. Army biological warfare experiments.

Hole is particularly disturbed by the proliferation of nuclear weapons. Weapons testing, he says, has made all of the world's soil "a bit radioactive. We've already polluted all the soils of the world because that stuff [fallout] came down everywhere, even on the remotest peaks." Hole's Madison home has been a "nuclear-free zone" for several years now.

Since his retirement, Hole has traveled as far as Baja and New Zealand, and has been able to spend more time with his wife, Agnes. But Francis Hole,

with his suitcase full of puppets parked near the door, still jumps at the chance to tell anybody who will listen about the soil. "Some native cultures have a feel for the soil, but Western culture doesn't. Western civilization has suppressed a feeling for the soil. It's out of sight, out of mind.

"People need to understand that if the soil can support a beautiful thing like a flower or a tree, then the soil itself is beautiful, if not more beautiful. Without it, we wouldn't be here.

Terry Devitt is science editor for the News and Information Service of the University of Wisconsin-Madison.

Geography Chant

*Wisconsin had a son
Wisconsin had a daughter.
Geography they learned
In classes at their Alma Mater . . .
Geography they learned:
Rivers, rocks and places;
Biotic wonders, too,
And many human faces.
Wisconsin is the magic word!
Geography, the knowledge word!
Stewardship is the final word!
Always!*

(The tune was from a football rally chant at Haverford College in the 1930s.) *F.D.H.*