

most of our endangered species are freshwater clams or mussels."

Kentucky has also had its own version of the spotted owl controversy that pitted loggers against environmentalists in the northwest. The red-cockaded woodpecker, which nests in live pine trees, has all but disappeared from the state, partly because of the logging industry. Consequently, the Forest Service has halted logging in parts of the Daniel Boone National Forest where these woodpeckers live. Controlled burns are planned to help restore pine hardwood forests that the birds need to survive.

Privately owned land is less regulated, and since 90 percent of the forests in the East are privately owned, getting the message of biodiversity across to private landowners is crucial. That's where Barnes' education program comes in.

"The message we're trying to get out to people is that you don't have to lock up the land to manage wildlife. It's going to take tremendous cooperation among private landowners, federal and state governments, conservation organizations and the public," he says.

Pragmatically speaking, biodiversity is good for the economy, which is one motivation for private landowners. But the moral imperative should not be overlooked, Barnes notes.

"Once you start losing species, at what point does the whole ecosystem tumble down?" he asks. "Think of it as taking bricks out of a house. The key question is, what brick will make the rest of the house fall in?"

—Sharon Reynolds

## Treating Earthquake Trauma

Six-year-old Artak was in kindergarten when the earthquake struck. After he saw a wall crush his friend, Artak decided that his teacher caused his friend's death, even though the teacher was also killed. Artak's mother was killed in the earthquake too. And although Artak and his five-year-old brother saw her in a coffin in their home, they continued to insist that their mother went to Moscow on a business trip and would be home in a year, bringing presents.

The December 7, 1988 earthquake devastated over 40 percent of Armenia (in the then Soviet Union). More than 25,000 people died, 78,000 were injured, 2,000 lost limbs, and more than 32,000 children were evacuated. For any victim of such a disaster the event can cause a lifetime of suffering and trauma, but for a child the effects can be especially cruel.

"When I heard about the earthquake, I immediately wrote the National Mental Health Research Centre in Moscow, offering whatever assistance I could," says Thomas W. Miller, professor of psychiatry at UK and chief of psychology service at the Veteran's Administration Hospital.

The Centre responded, saying, "We were touched greatly that you'd taken to your heart the news about the earthquake..." and Miller was invited to visit the outreach centre in Yerevan, Armenia.

Miller and Robert F. Kraus of UK spent six weeks in Armenia. Working with Adel Tatevosyan and Peter

Kamenchenko of the Academy of Medical Sciences' National Mental Health Research Centre, they helped educate the Centre's therapists in what Miller and Kraus call "trauma accommodation syndrome"—the predictable stages a victim of disaster is likely to experience. Understanding the stages of the syndrome allowed the therapists to work more effectively with the children. Miller and Kraus were also able to help the "secondary survivors," those who lost family members or friends.

There are five stages of post-traumatic accommodation syndrome:

- The first stage is the experience itself; in this case, the actual earthquake.

- The second stage is the psychological fear associated with experiencing the event, a sense of horror and helplessness and guilt as the child realizes the loss of parents, friends, or home. This second stage also includes the realization of any physical injury the child might have suffered.

- In the third stage the child often becomes confused and anxious. The child may have recurring nightmares and display agitated behavior, or even suppress memory of the experience. Children frequently expressed fears of vibrations, fear of darkness, or of being alone.

Throughout the second and third stages, children tend to revisit the event, reenacting scenes from the event, reliving the event over and over, either consciously or unconsciously. Many children become withdrawn; some report physical problems such as dizziness, nausea, or headaches.



- The fourth stage of post-traumatic accommodation syndrome is one of reevaluation and reasoning. In this stage the child begins to view the event from a more safe mental distance. It is in this stage that therapy is most effective.

- The fifth, and final, stage is that of accommodation or resolution. The child has learned to accept the consequences of the traumatic event.

While in Armenia, Miller and Kraus provided clinical consultations and worked with clinicians who studied the effects of trauma on 839 children and adolescents, ranging in age from eight to 15 or 16, who had survived the earthquake. Their study confirmed the five stages of trauma accommodation syndrome.

"Trauma accommodation syndrome isn't something that can be cured," Miller says, "but we can reduce the depression often associated with it." Approximately two-thirds of the children who participated in this study are showing satisfactory levels of adaptation.

Miller and Kraus' trip to Armenia was funded by a grant from the International Research and Exchanges Board, by the A.W. Mellon Foundation, National Endowment for the Humanities, and the U.S. Department of State.

—Marguerite Floyd

## In Memoriam: Lucy Powell (1887-1994)

In November of 1989, I had the pleasant experience of traveling to the Medco Center in Springfield, Kentucky, to interview Lucy Powell, then 102 years old, for an *Odyssey* article I was working on. At that time Lucy was one of over 500 participants in a University of Kentucky centenarian study.

The Medco administrator, Mrs. Violet Elliott, assured me that Lucy was looking forward to talking with me. "There's just one thing," Elliott said. "Lucy wanted me to let you know that she can't chat past 4:00. That's when bingo starts."

Lucy was bright-eyed and alert and very talkative that day. She told me about her girlhood on a family farm near Mackville, Kentucky, her years as a student in the old White Oak Schoolhouse, her marriage at age 27 to Will Powell, and her one "terrible bad habit" that she began to develop—drinking coffee.

"I didn't drink coffee when I married Will, but he wanted his coffee three times a day—breakfast, dinner and supper," Lucy recalled. "I got tired of making it that long. I got to pouring a little on a saucer and then into a teacup. But it didn't agree with me so I quit."

Lucy clearly enjoyed rolling the years back to that time, the early days of this century just before

World War I. "We had big times, good times," she said. "And we had lots of pets. My favorite was Buster, my pet pig. I could hold him in my arms at first, but then he got big—over 300 pounds."

Lucy remained active at Medco until well past her 104th birthday.

"Lucy was always very verbal," recalls the current Medco director Laurie Dillard. "Even at the very end of her life she wasn't shy about letting us know what she

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Photo by Mark Zerry

Lucy Powell