The unprecedented nuclear power disaster that took place on April 26, 1986, at the Chernobyl plant in then-Soviet Ukraine was supposed to be unthinkably bad. So bad that Time magazine confidently predicted the meltdown would prove to be the worst environmental disaster in human history. But 20 years later, a new book says that, at least when it comes to the environment, it’s not as terrible as we feared.

Mary Mycio’s Wormwood Forest addresses the consequences of the accident with a strong focus on the plants and animals of the Chernobyl region. The title stems from Artemesia absinthium—common name wormwood—a plant that grows abundantly in the area, as well as from a passage from the Book of Revelation, with which Mycio opens: “A great star fell from heaven, blazing like a torch, and it fell in a third of the rivers and the springs of water. The name of the star is Wormwood. A third of the water became wormwood, and many men died from the water for it was made bitter.”

Mycio, who holds a bachelor’s degree in biology and a law degree from New York University, is a Kiev-based correspondent for the Los Angeles Times. At the time of the accident, she had just started working at an L.A. law firm, but, as a Ukrainian-American, was so riveted by events that she eventually quit her full-time job to become a “bicoastal Chernobyl junkie.” After the accident, “Whenever I thought about the irradiated lands 50 miles north of Kiev, it was like contemplating a black hole,” Mycio writes. Like Time magazine, she was expecting the worst. So, when she finally visited the region a decade after the disaster, “I was surprised to find that the dominant color was green. My notes from that trip are filled with emphatically underlined and circled comments like ‘feral fields,’ ‘forests,’ and ‘wildlife?’”

Contrary to the myths and imagery, Chernobyl’s land had become a unique, new ecosystem. Defying the gloomiest predictions, it had come back to life as Europe’s largest nature sanctuary, teeming with wildlife.”

Discussion of this biodiversity in the radioactive “zone of alienation” surrounding Chernobyl, where human activities are restricted, constitutes a substantial amount of Wormwood Forest. Mycio spends considerable time
defending the position that, at least from several aspects, the Chernobyl meltdown has been beneficial to the zone’s wildlife. After all, she says, all the species that one might expect to be present if the environment were pristine are present, and the amount of wildlife in the zone far surpasses that outside it.

Improved wildlife conditions may sound like an abstract and unlikely consequence of the world’s worst nuclear power disaster; however, I have reached the same conclusion. During several expeditions to Chernobyl during the late 1990s, the U.S.-Ukraine research team that I worked with determined that there were in fact ecological benefits to the accident. The removal of human activities from the radiation-contaminated Chernobyl environment has resulted in an abundance of moose, roe deer, Russian wild boar, river otters, and other wildlife—although radiation in the area still remains high.

Despite being well written and engaging, Wombwood Forest is unfortunately somewhat weak on scientific detail and accuracy. The book could be improved by including scientific citations. Mycio’s explanations of dose are difficult to follow, even for some one reasonably well schooled in this area, and her statement that “an acute dose of 100 rem is the minimum needed to trigger acute radiation illness” raised red flags for me. According to the Low Dose Program of the Energy Department’s Office of Science, the current thinking is that a dose of 100 rem would not cause radiation illness. Additionally, at one point in the book Mycio writes that white storks are no longer present in the zone of alienation, yet I have observed firsthand several successful nests of white

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**Food for thought**

_Could an international security crisis be lurking in the world’s cornfields? Two recent books examine global agricultural practices and warn that unless significant changes are made, not only will people continue to starve, but nations will confront a host of new foreign policy challenges._

In _Raising Less Corn, More Hell_, George Pyle comes at the issue from the ground up—so to speak. A longtime journalist in the U.S. breadbasket, Pyle says that members of the media (himself included) have struggled to grasp the full effects of mass-production agribusiness trends. While exposing the “phantom” of agricultural underproduction—he argues that the world is actually producing too much of certain agricultural staples—and providing a grade-A tutorial on the destabilizing effects of U.S. agricultural subsidies, Pyle energetically points to what he sees as a potentially more costly phenomenon: shrinking crop diversity.

When combined with large-scale farming operations, “uniformity in the gene pool” could lead to “real shortages of food when the day comes, as it will, that large parts of the world’s crops are decimated by a pathogen that finds them to be its favorite food,” he argues. Account for the possibility that inadequately guarded food supplies could be poisoned, Pyle maintains, and agriculture emerges as a “target-rich environment” for accidental or purposeful contamination.

Lester Brown, president of the Earth Policy Institute, takes a decidedly more staid approach to the perils of global agricultural trends. Backed by pages of data and graphs, _Outgrowing the Earth_ concentrates on factors that Brown believes will ultimately limit the world’s ability to feed its inhabitants: soil erosion, desertification, the conversion of cropland to non-farm use, falling water tables, and rising global temperatures. To confront these challenges requires coordinated policy making in health and family planning, transportation, and energy, argues Brown. Otherwise, the threat of “food insecurity,” he says, could dwarf that of terrorism.

For example, Brown believes that in a few years populous China will experience serious agricultural shortfalls and that the United States might need to establish an “umbilical cord” of ships carrying U.S. grain across the Pacific to provide nourishment to millions of Chinese. “Managing this flow,” Brown maintains, “may become one of the leading foreign policy challenges of this new century.”

_Jonas Siegel_
storks in the zone during research trips there in each of the last 10 years. (Of course, the large amount of time I spent there may have given me more opportunities for observation.)

Mycio contends that the full genetic consequences to wildlife in the contaminated areas—for example, birth defects and diminished health—are yet to be determined, and again, I agree. It is unclear, for example, what is happening with pine trees in the Red Forest, a swath of dead Scotch pines in the vicinity of Chernobyl that were killed by the accident’s radiation plume. The book reproduces a photograph of an aberrant young pine tree to show that the pines continue to be negatively affected by exposure to radiation; yet, I’m not sure radiation alone is the culprit. In my travels throughout the zone, I have seen such pines in highly contaminated regions—but also in regions that have essentially no radiation. To me, this means that it is possible that aberrancy in young Scotch pines may be caused by other environmental or genetic factors, and not necessarily radiation.

Perhaps the most interesting chapter is the book’s last—“The Nature of the Beast”—which concerns the problem of the melted-down fuel rods that remain buried in the rubble of Reactor 4. Besides discussing the need to build a new tomb over the old, crumbling “sarcophagus” in order to prevent the radioactive rods from leeching contamination into the environment in the future, Mycio explains how he has come to believe that all major forms of energy (oil, coal, and hydroelectricity) are detrimental to the environment, and wonders whether nuclear power may actually be the most environmentally friendly energy—despite the potential risks involved. Like the area around Chernobyl, Mycio, once staunchly antinuclear, has emerged from the past two decades with a surprise result.

Robert J. Baker, Paul H. Horn Professor of Biology at Texas Tech University, has visited Chernobyl 15 times to study, among other things, the effects of radiation.

IRAQ’S HOT PROPERTIES


REPORT REVIEW BY ANDREW J. GROTO

ASK BIG CITY MAYORS TO LIST THE TERRORIST THREATS THEY WORRY ABOUT MOST, AND THEY’LL PROBABLY PUT A “DIRTY BOMB” ATTACK NEAR OR AT THE TOP OF THE LIST. OF THE UNCONVENTIONAL WEAPONS THAT A TERRORIST COULD USE TO ATTACK THE UNITED STATES, A DIRTY BOMB IS ARGUABLY THE MOST PROBABLE. THE COMPONENTS FOR BUILDING A DIRTY BOMB ARE (COMPARATIVELY SPEAKING) MORE NUMEROUS AND TECHNOLOGICALLY LESS COMPLEX TO WORK WITH THAN THOSE NEEDED TO CONSTRUCT AND DELIVER A Viable NUCLEAR, CHEMICAL, OR BIOLOGICAL WEAPON.

Built by packing conventional explosives with radioactive materials, a dirty bomb is primarily a psychological weapon, designed to induce chaos and panic by preying on the public’s fear of radiation. If especially potent radiological materials are used, a dirty bomb attack also has the potential to cause massive economic damage—trillions of dollars, under some plausible scenarios.

A troubling new report issued by the Government Accountability Office (GAO) in September 2005 (“DOD Should Evaluate Its Source Recovery Effort and Apply Lessons Learned to Future Recovery Missions”), suggests that the Iraq War may have elevated the dirty bomb threat by creating a window of opportunity for terrorists or others to steal from Iraq’s unprotected inventory of thousands of radiological sources that were used in a variety of industrial, medical, and other applications. Common sources include nuclear well-logging tools,