

distinguishing each other. Today's *Polyergus* raiders believe they are kidnaping *Polyergus* eggs.

Although a relatively new entomological subdiscipline devoted specifically to slave-making ants has produced many new theo-

ries, Topoff concedes that there is still much to be learned. And considering that there are hundreds of species of slave-making ants, he concludes, "it is conceivable that no one theory will be universally satisfactory."

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## RESOURCES & ENVIRONMENT

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### *The Perils of Pesticides*

"Cancer Prevention Strategies Greatly Exaggerate Risks" and "Natural Plant Pesticides Pose Greater Risks Than Synthetic Ones" by Bruce N. Ames and Lois Swirsky Gold, and "Exposure to Certain Pesticides May Pose Real Carcinogenic Risk" and "Arguments That Discredit Animal Studies Lack Scientific Support" by James E. Huff and Joseph K. Haseman, in *Chemical & Engineering News* (Jan. 7, 1991), American Chemical Society, 1155 16th St. N.W., Washington, D.C. 20036.

In her influential 1962 book *Silent Spring*, naturalist Rachel Carson warned of the dangers to the environment, and ultimately to human beings, from the widespread and indiscriminate use of DDT and other chemical pesticides. Nearly three decades later, the debate about the hazards pesticides present still goes on.

Chemical pesticides are employed extensively in American agriculture. In 1988, more than one billion pounds of pesticides and related chemicals were used—more than four pounds for every American. But Ames and Gold, of the National Institute of Environmental Health Sciences Center at the University of California, Berkeley, contend that the risks to consumers of developing cancer from pesticide residues on their food have been greatly exaggerated. Indeed, they say, by lowering the cost of fruit and vegetables and so increasing their consumption, the use of synthetic pesticides may even indirectly *reduce* the danger of cancer. After all, eating more fruits and vegetables and less fat may be the best way of lowering the risk of cancer, next to giving up smoking.

Pesticides that cause cancer in laboratory rats or mice when administered in extremely large doses don't necessarily do the same in humans when taken in much, much smaller amounts, Ames and Gold point out. Moreover, they say, the minus-

cule quantities of synthetic pesticides that Americans take in with their food are vastly outweighed by the "natural pesticides" they consume every day. These are the toxins plants produce to protect themselves against fungi, insects, and animal predators. Cabbage, for example, contains 49 natural pesticides. While relatively few such natural chemicals have been tested on rats and mice, about half of those that have been have caused cancer. Ames and Gold calculate that Americans eat about 1.5 grams of natural pesticides per person per day—about 10,000 times more than the amount of synthetic pesticide residues they ingest.

But such comparisons, because they don't take into account the pesticides' carcinogenic *potencies*, have little scientific value, argue Huff and Haseman, of the National Institute of Environmental Health Sciences. And the rodent studies of synthetic pesticides, they say, do have significant value in the eyes of most scientists. Such studies indicate "that exposure to certain pesticides may present real carcinogenic hazards to humans."

One point on which both sides seem to agree is that there is reason to be concerned when people are exposed to large amounts of certain pesticides. Haseman and Huff say that the potential risks to food consumers shouldn't be minimized, but

"we are more concerned about the farmers, occupationally exposed workers, pesticide applicators, weekend gardeners, and

others who may be repeatedly exposed to much higher levels of pesticides and therefore are at greater risk."

## False Fixes

"Sense and Nonsense on the Environment" by Warren T. Brookes, in *The Quill* (Jan.-Feb. 1991), Society of Professional Journalists, P.O. Box 77, Greencastle, Ind. 46135-0077.

When McDonald's Corp. agreed last fall to abort its program to recycle the polystyrene cartons it uses for its hamburgers, and to go back instead to using coated paperboard, some environmentalists and journalists hailed the decision as "good news for the planet." In reality, says Brookes, a Washington-based editorial writer for the *Detroit News*, the hamburger chain's decision was "on balance, *bad* news, because it will at least double the net adverse impact on the nation's environment."

That's because coated paperboard, unlike polystyrene, is not recyclable, and because producing it takes 40-50 percent more energy and results in two to three times the air pollution and at least 70 percent more waterborne wastes.

Why, then, did McDonald's decide to switch? Brookes suspects that the firm was concerned less about the environment than about its corporate image. McDonald's was under pressure from the Environmental Defense Fund, and the foam packaging had simply become "a public relations liability."

But the "Big Mac" threat is hardly the only environmental peril that's been greatly exaggerated in recent years, Brookes maintains. For example, he points to the "ecological disaster" of the March 1989 *Exxon Valdez* oil spill in Alaska's

Prince William Sound.

"Contrary to the hysteria generated by the news media and environmentalists," Brookes writes, a report published last year by James Mielke of the Congressional Research Service found that the ecological effects of such spills are relatively modest and short-lived. The chemicals in petroleum, Mielke noted, "have long been part of the marine environment and physical impacts are likely to be temporary in the dynamic natural flux of the coastal environment." As an example of how little lasting ecological damage was done in Alaska, Mielke said that 40 million pink salmon—an all-time record number—were caught in Prince William Sound last year, and most of the fingerlings had been released into Sound hatcheries *after* the *Exxon Valdez* spill. In Mielke's view, the \$2 billion spent on the cleanup there was "money that could have been better spent."

Who's responsible for all the exaggerated environmental fears? Brookes says that the news media deserve much of the blame. Journalists are properly skeptical of environmental claims made by industry, he says, but they also need to be skeptical of claims made by the Environmental Protection Agency and by "self-styled public-interest groups, many of which misuse or abuse scientific data to arouse fear."

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## ARTS & LETTERS

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### Flag Revolution

"Waving the Red Flag and Reconstituting Old Glory" by Albert Boime, in *Smithsonian Studies in American Art* (Spring 1990), Oxford Univ. Press, 2001 Evans Rd., Cary, N.C. 27513.

When young radicals burned the U.S. flag during the antiwar protests of the 1960s, the venerable Socialist leader Norman

Thomas (1884-1968) was appalled. He thought the protesters "should be washing the flag, not burning it." Little more than