

environment

The parachuting cats of Borneo

Americans unaccustomed to having lizards running around their houses can hardly appreciate the Asian affection for geckos. So respected are these agile, nearly transparent little creatures that crawl around the walls and ceilings in tropical Asia that in some places if a gecko chirps when someone is talking, custom holds that what was said must surely be true. And when the geckos stopped chirping in Malaysin, Borneo, the villagers knew there was trouble ahead.

It all began when the World Health Organization sprayed DDT in the village in an effort to eradicate malaria, endemic in the area. Though spraying indeed killed the mosquitoes, many cockroaches built up an immunity to the poison and concentrated it in their bodies. When the geckos ate the infected cockroaches they became ill and could no longer scamper away from the many cats that roamed the village. As both cats and lizards died from effects of DDT, disease-carrying rats began to roam the village and caterpillars started to gnaw the thatched roofs, endangering houses with collapse. "What happened in Borneo is another example of how man's attempt to control nature has led to disaster as often as to solution," says Jonathan Waage, the Brown University instructor who tells of this experience, which he calls a classic example of "ecological backlash."

Fortunately for the villagers of Malaysin, a plane-load of cats, dropped by parachute, helped restore the balance of nature; but Waage says the event emphasizes the need for ecology to become a "theoretical, predictive science." The geckos will chirp for that.

What pollution does to you

Air pollution can make you more susceptible to a wide variety of ailments, ranging from eye irritation to animal bites, according to a study conducted by Robert Wassall of the National Oceanic and Atmospheric Administration and I. H. Kornbluh of Northeastern Hospital, Philadelphia, Pa. In a report to a biometeorology conference in Philadelphia, the scientists described the results of their attempts to correlate pollution levels with various complaints of patients coming to Northeastern Hospital's emergency room and outpatient clinics.

As expected, when smog increased, so did incidence of eye irritation, pulmonary disorders and nosebleeds. But the researchers also found that both traffic and non-traffic accidents rose sharply with levels of atmospheric carbon monoxide, long known to reduce human reflexes and judgment under laboratory conditions. Males seemed more susceptible than females to this effect of carbon monoxide. Finally, for reasons not yet understood, more patients complained of animal bites on days when the air contained more suspended particulate matter.

Pollution scorecard: America's cleanest cities

Citing statistics furnished by the Environmental Protection Agency, the American Medical Association's general circulation magazine, *TODAY'S HEALTH*, recently published its list of America's 10 cleanest cities. Each city has some natural advantages, such as ocean breezes or low concentration of industry, but each city has also experienced some pollution problems in the past which have been successfully solved.

The cities, in order of cleanliness are: Seattle, San Francisco, Dallas, San Antonio, Kansas City (Mo.), Memphis, Houston, Toledo, Columbus (Ohio) and Boston.

march 31, 1973

earth sciences

U.S. metric mapping begins

A topographic map using metric units, covering 1,600 square miles of Alaska, will be the first step in large-scale metric mapping of the United States, according to the U.S. Geological Survey.

Alaska was chosen for the pilot effort largely because there are few non-metric maps of the area available at the proposed 1:25,000 scale. The map will not be just a recalibration of old ones, but will be done from new surveys, to begin this summer. The area will include Anchorage and vicinity, and will be published with 5-, 10-, and 20-meter contour intervals.

Possible problems in using the metric units have been discussed with representative map users in Alaska, and distances, spot elevations and some other notations will probably be shown in both English and metric forms.

Other metric maps are being prepared by the Geological Survey to cover Puerto Rico and Antarctica, though at a less-detailed, 1:1,000,000 scale, as part of the United Nations' planned International Map of the World.

Oil and young solid coral

The discovery of a geologically young, non-porous coral reef off the coast of British Honduras may have opened up new possibilities for oil prospectors.

Much of the world's oil is found in ancient reefs, both at sea and in ancient sites on land, and only porous reefs are thought to be capable of holding oil in commercial quantities. It has been generally believed that on land, the reefs that have hardened into non-porous rock, which is less permeable to oil, have done so only long after they were buried. This presumably non-selective hardening and filling-in has seemed to mean that areas where there are some non-porous reefs were likely to be unproductive as a source of commercial quantities of oil.

A research team headed by Robert Ginsburg of the University of Miami, however, has found filled-in Honduran reefs only 5,000 to 10,000 years old and still unburied, with still-porous reefs nearby. This could mean that core samples of filled-in reefs are not sufficient reason to write off an entire area for oil prospecting, and that some previously abandoned sites should perhaps be reexamined.

Bouncing radar watches waves

Shore-based radar, bouncing its signals off the ionosphere, has been used to monitor wave conditions hundreds of miles out to sea.

One site in Kentucky, for example, has observed the ocean's surface behavior along the entire Atlantic coast and some 1,200 nautical miles out to sea, reports Donald E. Barrick of the National Oceanic and Atmospheric Administration's Wave Propagation Laboratory in Boulder, Colo. The "skywave" technique can be used to check wave height, length and direction. With the same transmitter the conditions can also be reported to ships at sea.

A problem with the system is that the radar frequency commonly used for monitoring wave conditions is not the best for bouncing off the ionosphere. Future tests are planned using the ultrahigh-frequency band. Ionospheric movements cause another problem—fadeouts of the returning signal that vary with different frequencies—and solar activity can weaken the ionosphere's effectiveness as a reflector. A partial remedy is a multiband transmitter which can select the optimum radar frequency for a given transmission distance.

209