

Is Acid Rain Harmful? Answer: 'Yes, But...'

by Boris Weintraub
National Geographic News Service
WASHINGTON -- The infuriating thing about acid rain is this: Nobody is absolutely sure about its effects. There are lots of ideas, but few are guaranteed to hold up. Does acid rain affect lakes and rivers? Certainly, the scientists answer, some of them. But not all. Does it threaten forests and cropland? Probably, the scientists say, but they aren't sure.

Fossil Fuel Product
How do the acidic substances get into the air? Most likely, from the burning of coal, oil, and natural gas, which releases sulfur dioxide and nitrogen oxides into the air. There they circulate with the great air masses from that form our weather systems.

But scientists aren't sure what happens then to airborne acid, so it is impossible to "prove" that acid rain in New York was caused by smokestacks in Ohio.

Does it affect animals? Scientists are pretty sure it is harmful to fish and amphibians indigenous to acidified waters. But how about mammals? Maybe, some say; but they don't know, and haven't been able to prove it.

And what about mankind? Are we in any danger from acid deposition. Again, some scientists

think so, others say no, and nobody has proved anything conclusively. There are some things that scientists do know about acid rain. Anne LaBastille reports in the November National Geographic, and few of them are reassuring. Among the certainties is the fact that 6 percent of all the ponds and lakes in the Adirondack Mountains of New York have no fish because of the high acidic content of their waters. The acidity has increased substantially in the past few decades, as burning of fossil fuels has increased.

International Problem
The problem is not unique to the eastern United States. According to one chemist in Sweden, an estimated 20,000 of the country's 100,000 lakes are either fishless or about to become so. The problem is thought to be the discharge that drifts northward from Europe's industrial belt.

Scientists have been working hard to find out more about acid rain, its causes and its effects. In the late 1970s, a nationwide network of 84 monitoring stations was set up to analyze samples of rain, snow, and dry fallout from 32 states. A similar group is monitoring samples from 55 sites in Canada.

Some areas of the eastern U.S. and southeastern Canada are receiving rainfall as acidic as vinegar, the studies show.

But what this means, what its consequences are, and what should be done about it -- these are

questions that have not yet been definitely answered.

While some scientists blame loose standards in some Midwestern states for permitting more than 10 times as much sulfur dioxide per ton of coal into the air as Eastern states allow, coal company scientists say there is no substantive proof that their smokestacks are responsible.

Standards Vary

The clean Air Act, which is up for reauthorization by Congress this year, requires that emissions from fossil fuel-burning facilities meet certain standards.

But each state is permitted to set its own standards, which leads some officials to blame the act for the increase in acid rain. Meanwhile, industry is reluctant to spend billions of dollars to modify existing plants unless it is proved they are responsible.

Such equipment, and others to control sulfur dioxide emissions, can make a difference. Miss LaBastille writes. She cites the case of Japan.

Japanese officials issued stringent sulfur oxide controls in 1968 and encouraged the use of low-sulfur fuels and desulfurization. By 1975, emissions had dropped by 50 percent, even though energy consumption had doubled.

Even stricter limits have been set since then, and 1,200 scrubbers to reduce emissions from smokestacks have been installed, compared to about 200 in the United States so far.

Now You See It, Now You Don't

Sulfur dioxide, photographed through a special ultraviolet filter, streams from the stacks of a TVA coal-fired power plant near Kingston, Tennessee (left). But to the naked eye, as well as an unfiltered camera lens, the gas—some 8,000 tons of it the month these photographs were made—issues unseen from the same stacks (below), accompanied by invisible oxides of nitrogen.



Photograph by Ted Spiegel © 1981 National Geographic Society

'Mystery Bird' Discovered In New Guinea Mountains

by Joy Aschenbach
National Geographic News Service

WASHINGTON -- Scientists had never seen it before, but somewhere in the New Guinea region there was supposed to be an outlandish "yellow-fronted gardener bowerbird."

Its existence was known only from three skins sold to British zoologist Lord Rothschild by a plume merchant in 1895. Of the many spectacular species of birds of paradise and bowerbirds that also first turned up in the plume markets of London, Paris, Amsterdam, and Singapore, it was the only one that had never been traced to its home ground.

Rain Forest Hide-Out

At last, the mystery bird of New Guinea, *Amblyornis flavifrons*, has been found. Early this year, on his ninth research expedition to the region, California ornithologist Jared M. Diamond discovered the bird high up in the largest unexplored mountain range in New Guinea, the thickly rain-forested Gattier (Foja) Mountains in the island's Indonesian half.

Dr. Diamond described this species as looking like "a fat, chunky robin with an incredibly glorious golden orange crest." It presumably had not been seen since unknown Malay or Papuan plume hunters snared the three male skins more than 85 years ago.

The lure for ornithologists was a strange bird whose bower-building relatives were known to construct the most elaborate structures in the avian world -- to woo as many females as possible.

When these remarkable courtship bowers were first discovered in the 19th century, they were thought to be the work of human artistry because of the complexity of their architecture and design. Built on the ground, some towering 7 feet high, they are the unique creation of small birds who work alone and are found only in Australia and New Guinea.

The search for the elusive yellow-fronted bowerbird had taken some of the world's leading naturalists and collectors -- even a crown prince of Belgium -- halfway around the world. But all of the more than a dozen expeditions, including one supported by National Geographic in 1964, had ended in failure. And at times, the missing bowerbird was thought to be extinct.

This year's attempt, partly funded by the National Geographic Society, succeeded because Diamond went to a mountain range never explored by scientists. "If we didn't have those skins, the tameness of the animals would make it seem that no human being has ever been up there before. It's like being in the world 30 million years ago," remarked Diamond, who had to be helicoptered in at 5,200 feet with a

chainsaw to construct a landing site.

Discovery a Bonus

Ironically he came across the lost bird when he wasn't really looking for it. "When I and anyone else who goes to New Guinea have dreams, we dream about finding the mystery bowerbird, but my goal on this trip was simply to do a general bird survey of this mountain range and help the Indonesian government plan a national park there. The discovery was a totally unexpected bonus."

Far from being extinct, Diamond reports, the yellow-fronted bowerbird may number a thousand or more -- still a small number for a bird species. He actually saw about 30 and heard as many more. He found bowers spaced about a quarter-mile apart along the crests of ridges, within a narrow altitude band of 5,400 to 5,900 feet. The bird's range, he believes, is restricted to the Gattier Mountains at altitudes above 4,000 feet.

Remarkably Diamond sighted both the bird and the bower on the first day (Jan. 31, 1981) of his two-week stay and within two minutes of his camp. With the help of an Indonesian forester and two New Guinea workers he was starting to clear a trail up to 6,500 feet and down to 3,200.

Initially, he almost ignored the bird, thinking its bower looked like that of another well-known species. "Only when I noticed that the crest was a golden orange and came down to the nostrils did I realize that I might be on top of the mystery bird of New Guinea," he recalled.

But he wasn't absolutely certain until he returned home and examined the Rothschild skins at the American Museum of Natural History in New York. The live birds and the skins were identical except for the color of the crest. On the live bird, it is a rich golden orange; on the skins, it has faded to a paler yellow.

Witness to Courtship

Diamond's most extraordinary encounter with the live bird occurred when he stood within 10 feet of a male courting a female at his bower. It was the only time he saw two birds together.

"It happened one day when I was walking along a ridge and heard a

loud sound about 50 yards away. It sounded like gravel rolling down a mountain slope and I thought it must be a wild pig."

Instead Diamond discovered the male bowerbird "making these crazy wooing sounds while holding a blue fruit about a third the size of its head in its bill. The sounds ranged from clicks, croaks, whistles, and screeches to noises like crumpling paper or chopping wood."

Huts and Lawns

Depending on the species, bowers may be walled avenues, thatched huts, Maypoles, or carefully laid out lawns. They are usually decorated with dozens or even hundreds of colorful flowers, berries, shells, or pebbles. Some birds bring fresh flowers to the bower daily and carry off withered blossoms.

Others paint the walls with crushed plant matter, using a stick or leaf for a brush. Near populated areas, the birds have incorporated bits of civilization into the design -- clothespins, bottle caps, marbles, shotgun shells, and car keys.

To enhance their own domain, some birds also steal from their rivals' bowers and sometimes even wreck them.

LESLIE'S GARAGE

We Turn Brake Drums, Rotors & Flywheels.

EXPERT - RADIATOR & HEATER REPAIR

TUNE-UPS, USING THE #1115 SUN INFRARED TESTER.

ALL WORK GUARANTEED

107 S. Main St.
875-4078 - 875-4775

LAW For Laypersons

DOMESTIC VIOLENCE, Part II

North Carolina's Domestic Violence Act goes a long way in protecting the victim of violence in the home. If a person seeking relief files a petition alleging acts of domestic violence, the court may grant a protective order against the person who has caused the violence. If the violence reoccurs, a law enforcement officer, who has been shown the protective order and has reasonable cause to believe that certain provisions of the order have been violated, must arrest and take into custody the offending person and then bring him or her before an appropriate District Court Judge to show cause why he or she should not be held in civil contempt.

What kind of violence must be alleged before the court will issue a protective order? Naturally, if one member of a household intentionally causes bodily harm to another, then that is the type of domestic violence which the statute was designed to prevent, and a protective order should be issued. Domestic violence, however, is not always evident and easy to see. The General Statutes, therefore, have expanded the definition of acts of violence to include an attempt to cause bodily injury and the placing of another in fear of imminent serious bodily injury by threat of force. Domestic violence entitling one to a protective order thus includes not only past acts of violence but potential acts as well. The adjective "domestic" before

the noun "violence" in the statute implies that the violence must occur between spouses and not between friends or strangers. The General Statutes do, therefore, provide that the violent acts entitling one to petition for protective order must occur between spouses. The legislature, however, very carefully added that the violence could also occur between past spouses because violence frequently occurs between ex-husbands and wives as a result of stormy divorces.

What about violence between a man and woman who live together as husband and wife but who are not married? Certainly domestic violence can occur between those two parties just as readily as between spouses. North Carolina's Domestic Violence Act includes violence occurring between persons of the opposite sex "who are living together or have lived together as if married."

The party who seeks relief need not be a tax-paying citizen of North Carolina. The Domestic Violence Act provides that a party "residing" in the state may seek relief; thus even a military family, which maintains its tax residence in another state, can seek relief under North Carolina's law.

"This article is written as a matter of general interest only. It is not to be construed as legal advice, and you should not rely on the statements made in the article to govern your actions in any specific case. If you have a particular question or problem, you should contact an attorney."

MANAGING YOUR MONEY

Investors concerned about the future of their dollar can learn the tools to survive in the inflationary economy of the 1980s from more than 20 leading economists, stockbrokers, financial writers, currencies and commodities experts at the New York Hilton Sept. 13-16, 1979.

A seminar on investments could be a good investment of your time.

The conference, say its producers, Investment Seminars International, can assist people from a broad spectrum of financial backgrounds. The speakers have been carefully chosen to provide a balance of viewpoints.

The International Investment Seminar will feature presentations by Robert M. Bleiberg, editor of Barron's, Louis Ruker, host of TV's "Wall Street Week" and syndicated columnist, the Hon. Philip Crane, U.S. Representative from Illinois and candidate for the Presidency in 1980, and James Dines, editor and publisher of the Dines Letter.

Free leaflets and registration applications can be obtained by writing to Investment Seminars International, Inc., United First Federal Building, Bradenton, FL.

The Johnson Company

INSURANCE

AUTO — FIRE
HOMEOWNERS — COMMERCIAL

Raeferd's Oldest Agency

110 E. Central Avenue Phone 875-3550

Jim Conoly EXTERMINATOR Gary Conoly EXTERMINATOR Ken Conoly EXTERMINATOR

Enviro-Chem Co.

EXTERMINATORS

Household Pest Control

120 W. EDINBOROUGH AVE. OFFICE 875-8146
RAEFORD, N.C. HOME 875-4419

HOUSE & LOT FOR SALE

In Raeferd Area

House & Lot For Sale

In Ashley Heights

SMALL DOWN PAYMENT

Carolina Model Homes

FAYETTEVILLE, N.C.
Call Collect 919-485-4111
OR
Write: P.O. Box 64849, Fayetteville, N.C. 28306