

- HOME
- JOB MARKET
- REAL ESTATE
- AUTOS **NEW**
- NEWS

SEARCH [Go to Advanced Search/Archive](#)
[] Past 30 Days [] []

GO TO **MEMBER CENTER** LOG OUT
Welcome, sivasothi

E-Mail This Article Printer-Friendly Format
Most E-Mailed Articles

- International
- National
- Politics
- Business
- Technology
- Science
 - Earth Science
 - Life Science
 - Physical Science
 - Social Science
 - Space
 - Columns
- Health
- Sports
- New York Region
- Education
- Weather
- Obituaries
- NYT Front Page
- Corrections

- OPINION
- Editorials/Op-Ed
- Readers' Opinions

Top 20th Travel Newsletter
TRAVELZOO
Click to Subscribe

- FEATURES
- Arts
- Books
- Movies
- Travel
- Dining & Wine
- Home & Garden
- Fashion & Style
- New York Today
- Crossword/Games
- Cartoons
- Magazine
- Week in Review
- Photos
- College
- Learning Network

- SERVICES
- Archive
- Classifieds
- Theater Tickets
- NYT Mobile
- NYT Store
- E-Cards & More
- About NYTDigital
- Jobs at NYTDigital
- NYTDigital
- Online Media Kit
- Our Advertisers

- MEMBER CENTER
- Your Profile
- E-Mail
- Preferences
- News Tracker
- Premium Account

May 7, 2002

Biologists Sought a Treaty; Now They Fault It

By ANDREW C. REVKIN

A treaty enacted nine years ago to conserve and exploit the diversity of species on earth is seriously impeding biologists' efforts to catalog and comprehend that same natural bounty, many scientists say.

They say the treaty has spawned paralyzing biological bureaucracies built on the widespread belief that any scientist collecting samples — whether for a drug company or a dissertation — is bent on stealing genetic material and making a fortune.

As a result, biologists say, in many tropical regions it is easier to cut a forest than to study it.

"Something that was well intentioned and needed has been taken to an illogical extreme," said Dr. Douglas C. Daly, a curator of Amazonian botany at the New York Botanical Garden, who has worked in Brazil for 20 years in partnerships with Brazilian scientists, but recently had to wait a year and a half for a new research visa.

"The net result has been that it's kept biologists out of the forests," Dr. Daly said. "That plays into the hands of the forces of uncontrolled development. If a tree falls in the forest and there's no biologist there to hear it, it definitely



Joyce Dopkeen/The New York Times

Dr. Douglas C. Daly, a curator of Amazonian botany, in his laboratory at the New York Botanical Garden in the Bronx.

TIMES NEWS TRACKER **NEW**

Topics	Alerts
Biology and Biochemistry	<input type="button" value="Create"/>
Science and Technology	<input type="button" value="Create"/>
Treaties	<input type="button" value="Create"/>
Genetic Engineering	<input type="button" value="Create"/>

Create Your Own | Manage Alerts
Take a Tour

Sign Up for Newsletters



Joyce Dopkeen/The New York Times

ADVERTISER LINKS

Broadband phone service for \$19.95/mo - Lingo.com

30 free trades at Ameritrade. Join now.

REPRINTS & PERMISSIONS

Click here to order Reprints or Permissions of this Article

doesn't make a sound."

Some officials in restrictive countries have begun to concede as much. For example, Brazil, which in 2000 stopped all exports of biological samples, even to Brazilians working abroad, has convened a National Council of Genetic Resources charged with finding a way to resume controlled exchanges.

specimen, has had trouble finishing his doctorate because of Brazil's ban on shipping even tiny leaf fragments.

The parties to the treaty, the Convention on Biological Diversity, met last month in The Hague and adopted voluntary guidelines aimed at distinguishing between "bio-prospecting" and basic science. But the parties, numbering 183, have yet to negotiate the details, and even after they are complete, signers are free to maintain existing rules.

The United States was involved in the talks, and the Clinton administration signed the treaty. But the Senate, lobbied by agriculture and drug companies, has never approved it. The Bush administration is reviewing whether to pursue ratification.

Scientists and some officials from restrictive countries agree that the solution is a regulatory system that is more streamlined for scientists who cede any right to profit from their findings. But creating such a system may be nearly impossible, because many universities, botanical gardens and other research institutions, besides conducting basic studies, also seek to exploit discoveries and, sometimes, have partnerships with drug companies.

In many countries, the fight against what is called biopiracy has proved politically popular, linking the interests of conservative nationalists, indigenous tribes and antiglobalization groups. In the hinterlands, the police and, sometimes, rural villagers have detained or chased out scientists.

Over the decades, there have been just enough examples of furtive expropriation of natural resources to fuel such fears, scientists say. Those include Brazil's loss of its rubber monopoly to Britain in the 19th century — rubber trees thrived in British-controlled Malaysia — to recent efforts by some companies to commercialize substances from tropical plants and animals without seeking permission or paying royalties.

Some countries are so eager to thwart biological thievery that they are going beyond the vague terms in the treaty.

At a meeting in February in Cancún, Mexico, representatives of Brazil, China, India, Mexico and nine other countries — together controlling perhaps 70 percent of the world's biological diversity — formed the Group of Allied Mega-Biodiverse Nations. The coalition would, among other activities, certify "the legal possession of biological material" and negotiate terms to transfer it.

Existing and proposed restrictions in countries with biological resources are all aimed at controlling research by drug and

biotechnology companies. But evidence has grown that they are harming the most basic field work, even observational studies of wildlife in which nothing is taken away. The restrictions not only affect northern scientists' probing southern forests, but also local scientists.

Dr. Ricardo Callejas, a professor at the University of Antioquia in Medellín, Colombia, specializes in the 2,000 species in the black pepper family. Dr. Callejas said fears of biological theft seemed particularly intense in South America, adding that it was "much, much easier to get permits for collecting in the Philippines and Vietnam" than in Colombia.

His discipline is taxonomy, basic analysis of the subtle differences among species and a field with little commercial appeal. Even so, Dr. Callejas said, he and his graduate students had been accused of biopiracy and booted from one village while on a collecting trip. He added that he longed to collect in a dizzyingly rich area in western Colombia, the Choco forests, but that the treaty had made the effort impossible.

"If you request a permit," Dr. Callejas said, "you have to provide coordinates for all sites to be visited and have to have the approval from all the communities that live in those areas. Otherwise, go back to your home and watch on Discovery Channel the new exciting program on dinosaurs from Argentina. I am still waiting after 14 months for a permit for collecting in Choco."

Delays, fees and research restrictions in countries like Brazil and provinces like Sarawak, the Malaysian part of Borneo, have caused many scientists simply to abandon the critical, difficult work of charting the still largely unexplored maze of species.

In some cases, scientists have been detained and their collections destroyed. In the Brazilian Amazon in 1998, an American geographer studying the forest for hints of ancient cultivation methods was placed under house arrest by the federal police in Santarem, and his boat, equipment and samples were seized.

The scientist, Joseph M. McCann, who now teaches at the New School for Social Research in Manhattan, had all the appropriate permits and visas. He said that he eventually got back his gear and the title to his old riverboat, but that most of the collection of pressed plants rotted because the police had stored it outside. The plants had been destined for a Brazilian herbarium, not a pharmaceutical laboratory, he said.

Graduate students and postdoctoral researchers have been affected most of all, from both developing countries and from the North.

At the New York Botanical Garden in the Bronx, André M. Amorim, a visiting botany professor from the State University of Santa Cruz in Bahia, Brazil, has had trouble completing his doctoral research because of the ban on shipping even the tiniest leaf fragment.

His work focuses on Brazilian lianas and related vines and shrubs, and

it requires advanced molecular and genetic analysis using equipment in New York.

"This is a real problem when Brazilian researchers are working in other countries," Mr. Amorim said.

In some places, restrictions have forced biologists to pack up and leave or to avoid the least-studied regions like the Amazon, where the classification of species lags, and focus on more accessible places like Hawaii or Puerto Rico.

In Sarawak, Dr. Navjot S. Sodhi of the National University of Singapore abandoned a project to survey the bird species in several national parks after tighter research restrictions took effect in 1998.

"Sarawak is the best place on earth to work, because there's so much rain forest left and the people are so nice," Dr. Sodhi said. "They provided free workers to help us, and we trained them in return and hired local guides. We were only collecting blood samples from birds to look for parasites and also collecting bird feces to study their diets."

But word spread that a potential AIDS drug had been discovered in the region. New rules greatly complicated his program, he said. "Now, to collect bird feces we had to get an export permit."

Officials began harassing his students.

"I couldn't take the nonsense any more, and we pulled out," Dr. Sodhi said. "I was willing to sign anything saying that we were not doing any bioprospecting."

But there was nothing to sign.

Officials at some companies that are sifting ecosystems for potential profits say it is appropriate that scientists from universities and other academic institutions play by the same tight rules.

"Academics have been kind of naïve to the question of ownership of genetic material," said Eric J. Mathur, senior director for molecular diversity at Diversa, a company in San Diego that works around the world to find enzymes and other substances that could make valuable drugs or other products. "They think that under the guise of academia they can do whatever they want. But if their work results in any kind of invention — and most come serendipitously — you can be sure their institution will want to own it and make money from it."

Mr. Mathur said that the last year or so had finally seen the biodiversity convention "start to come of age." In a growing number of countries, he said, the general precepts of the convention have translated into workable contracts that, for the first time, clarify who owns what and how any benefits will be shared.

But many scientists and some officials say there is clearly the need for a system with two tracks, to separate and simplify work that clearly has no commercial application.

The impetus for the treaty, scientists note ruefully, arose largely from biologists, who in the late 1980's powerfully promoted the notion that rain forests could turn out to be medicine chests for the world. But the promise has rarely turned into profits, with just a handful of drugs and products reaching markets.

"It's never really panned out and was totally oversold," said Dr. George Amato, director of the conservation genetics program at the Bronx Zoo.

Dr. Amato's program has frequently been stymied in helping foreign researchers identify animal species and strains through using genetic analysis, because no material can be sent abroad. In one such effort, aimed at identifying a strain of yellow-headed Amazon parrots, the DNA ended up being tracked down in a stuffed museum specimen.

The worst side effect of the biology restrictions, many experts say, is that young researchers are being driven away from important ecosystems and fields of study.

In 1999, Christiane Ehringhaus, a German botanist pursuing a doctorate at Yale, was teaching Brazilian students and studying plants in the state of Acre in the Brazilian Amazon when newspapers implied that she was collecting seeds and insights from indigenous people in pursuit of potential drugs.

Although she is still in Acre, Ms. Ehringhaus said the resulting difficulties had prompted her to abandon botany altogether and shift to social and economic studies.

"First," she said, "they drove me completely away from medicinal plants and now from plants, period."

Prof. John H. Barton of the Stanford Law School, an expert on the biodiversity treaty, said the biggest weakness in the pact was its focus on biology as property. "It is much more about sharing the profits from genetic resources than it is about conserving biodiversity, about science," Professor Barton said.

Around the world, that focus has translated into warped expectations and suspicions, Dr. Callejas said in Colombia.

"I have trouble convincing my closest friends that what I do is because of passion, curiosity, a desire to know more about a group of organisms," he said.

Everyone around him, he added, is convinced, with all the talk of property rights and miracle drugs, that it is about money.

"The convention," Dr. Callejas said, has produced a "distorted view of what science is and who scientists are. And so now, we are the problem, not the solution."



[E-Mail This Article](#)



[Printer-Friendly Format](#)



[Most E-Mailed Articles](#)

Discover Diplomacy.

The New York Times

Copyright 2002 The New York Times Company | [Privacy Information](#)