

GENETIC OWNERSHIP

Brazil Wants Cut of Its Biological Bounty

A debate is brewing in the Brazilian Senate over legislation designed to ensure that Brazil's citizens share in any profits from crops or medicines derived from the biological wealth of the Amazon and other species-rich regions. Brazilian officials say they hope the legislation will encourage bioprospecting. "We want to establish rules to stimulate the use of biodiversity, not restrict it," says molecular biologist Luiz Antonio Barreto de Castro, an official in Brazil's science ministry. But some scientists, while applauding the legislation's goals, warn that it could imperil field research in Brazil. The legislation "is potentially a real roadblock ... to scientific progress," says Smithsonian Institution biologist Thomas Lovejoy.

The legislation, observers say, has its origins in still-smoldering anger over the collapse of Brazil's rubber industry in the early 1900s after Brazilian seeds were transplanted to Southeast Asia and used to start the region's booming rubber plantations. In several other instances since then, foreign organizations have claimed breeding or patent rights to Amazonian plants that might be useful as crops or medicines, such as the pinto peanut. According to Pat Mooney, executive director of the Rural Advancement Foundation International, a nonprofit organization based in Ottawa, Canada, Brazilians "feel ripped off."

The first attempt to reverse this trend and formally assert Brazil's ownership of native plants and animals came 3 years ago. A Brazilian senator from the Amazon region, Marina Silva, introduced a bill that would recognize local citizens' ownership of native species and mandate that any benefits derived from commercial uses of these resources be shared with local tribes. After a series of hearings, a more detailed version of that bill was introduced last year outlining a series of bureaucratic hurdles that anyone who wants to collect and use biological specimens in Brazil must clear.

Supporters had hoped this second bill would breeze through the Senate's education commission later this month before heading for debate in Brazil's Chamber of Deputies. But it has encountered opposition. The bill "can have tremendous impact on research" by discouraging basic research by non-Brazilian biologists, contends geneticist Marcio de Miranda of the Brazilian Cooperation for Agricultural Research. "Depending on how much you centralize the power," he says, the bill "could lead to a huge bureaucracy" of national, regional, and local offices that must sign off on any proposed collecting.

Now Brazil's executive branch is about to

step into the debate. It plans to offer alternative legislation in the next couple of months that would leave it to regulators to devise how to implement the bill's provisions. One issue that must be clarified, says de Castro, is how to ensure that local residents are re-



Rightful owners. Native tribes may benefit from new legislation to protect Brazilian biodiversity.

warded for providing knowledge used to identify potentially valuable species. "It is very difficult to establish rights related to this knowledge," says de Castro. Both the Senate bill and the government's draft version state that folklore has unspecified value—opening the door for local residents to receive compensation and have a say in what happens to their

resources, de Castro says. But exactly how to do that is still a hotly debated issue.

Biotech companies hoping to work in Brazil are watching with interest. If Brazil manages to lay out a balanced legal framework that empowers indigenous peoples but doesn't cut too deeply into a company's bottom line, it could stimulate bioprospecting, says Steven King, a botanist with Shaman Pharmaceuticals in South San Francisco. "When a country enacts clear-cut legislation, it makes it easier, not harder, to work there," he says. Indeed, de Castro, who says he knows of several Brazilian businessmen now seeking capital and expertise for large-scale collecting ventures, predicts that "efforts toward bioprospecting will increase [when] we have legislation of this kind."

But some biologists who collect specimens for research remain wary. "I want these countries to realize the proper return [on their biodiversity]," says Lovejoy. However, he adds, during recent hearings in the Brazilian Senate, research activities were lumped with commercial and amateur collecting. That might lead to unduly harsh restrictions on research, says Lovejoy, who's flying to Brazil later this month to discuss the bills with government officials and legislators. Lovejoy acknowledges that Brazil faces a difficult balancing act: juggling the concerns of scientists with a desire to redress old wrongs and the need to return benefits to its peoples.

—Elizabeth Pennisi

CANADIAN BUDGET

Research Funding Cuts Restored

OTTAWA—The Canadian government has moved to restore 3 years' worth of funding cuts to the country's three research granting councils. The increases, part of the country's new 1998 budget announced last week, will provide greater support for graduate students and individual investigators as well as stronger links with industry and community-based activities. They are being hailed by academic officials as an important "first step" in ending a dangerous slide in public R&D investment. "I'm very grateful," says University of Toronto President Rob Prichard. "But we have a very long way to go to reassert Canada's international competitiveness."

The new funding is part of the government's increased commitment to education at all levels. (A major component of the new budget, for the fiscal year that started on 1 March, is a \$1.75 billion scholarship fund for some 100,000 students entering university.) And the granting council increases—reversing a 3-year trend and overturning a planned 3% cut for 1998–99 that was announced last year—are made possible in part by the country's first balanced budget in 29 years.

The biggest beneficiary of this increased spending is the Natural Sciences and Engineering Research Council (NSERC), whose funding will rise 13.8%, to US\$346 million. The Medical Research Council (MRC) will get a 12.1% hike, to \$187 million, while the Social Sciences and Humanities Research Council (SSHRC) lags behind, its budget going up only 7.4%, to \$71 million. Industry Minister John Manley says the government wanted to give each council the same share of the overall research pie this year as it received in 1995. But the government's network of centers of excellence at the time were supporting only projects in the natural and medical sciences. Since then, the social sciences have received \$4 million from the program. So when the government moved to restore the 1995 balance, it in effect penalized the social sciences for its newly obtained network centers funding.

At the same time, those allocations will be reviewed later this year for the first time in a decade, says junior science minister Ron Duhamel, in the wake of academic concerns about the status quo. In particular, the Asso-