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Brazil Sees Promise in Jungle Plants, but Tribes See Peril

By LARRY ROHTER

SÃO LUÍS, Brazil — The Brazilian government, increasingly fearful of what it regards as "biopiracy" by foreign pharmaceutical companies, universities and laboratories, is moving to impose stricter controls on medicinal plants in the Amazon region.

The effort is motivated largely by a desire to build and profit from a domestic biotechnology industry instead of allowing non-Brazilians to get most of the benefits. But the government is also facing growing pressure from shamans and elders of the 230 indigenous peoples of Brazil, who worry that they are losing control of tribal wisdom and who also want a share of any revenue.

Brazil has nearly one-quarter of the world's plant species. Many of them grow only here and have yet to be tested by Western science, though they have been used for thousands of years by the indigenous peoples to treat a variety of ailments. That gives Brazil a prominence in biotechnology regulation far beyond that of any other country in the tropics, the region many scientists view as perhaps the most promising for the development of new drugs.

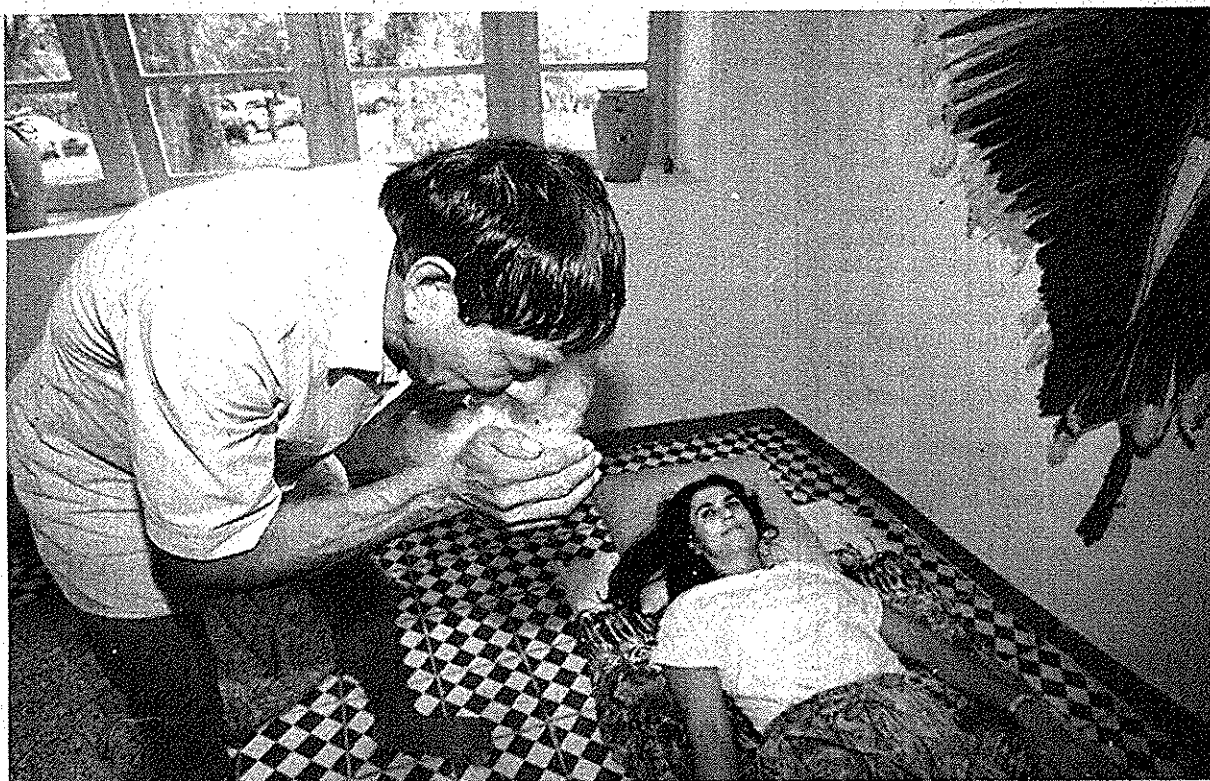
"The Brazilians are the leaders in this, and what they do, other people are going to follow," said Mark Plotkin, the author of "Tales of a Shaman's Apprentice" and an ethnobotanist. "The potential in this field is phenomenal, but it's not being realized yet, so it's up to them to develop clear rules and policies to replace the existing patchwork of legislation and ideas."

In a declaration after three days of meetings here on the eastern edge of the Amazon in early December, shamans from a tenth of Brazil's tribes called on the government to "create punishment mechanisms to deter the robbery of our biodiversity." They suggested that it might even be necessary to impose a total "moratorium on the commercial exploitation of traditional knowledge of genetic resources" until a more equitable system could be created.

"We're not against science, but we also don't want to be just suppliers of data," said Marcos Terena, a member of the Terena tribe and an organizer of the conference. "We want to be part of the whole process, from research to the economic results."

The system favored by the Brazilian government is that of a centralized databank that would store the knowledge accumulated by "traditional scientists," as the shamans are sometimes called here. Any researcher wanting to make use of that information would have to pay an initial access fee, which would be followed by regular payments during the research process and royalties if the final result were a commercially viable drug.

"We need a mechanism that will protect the communities that hold traditional knowledge and not just researchers," said José Graça Aranha, director of the National Institute



José Roberto Serra/Agência JB, 1996

Shaman Sapaim, of the Kaiapo tribe in Brazil, using a remedy common in the Amazon region on a woman.



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Shamans who met in São Luís want to protect tribal wisdom.

of Industrial Property, the government agency that grants patents and trademarks. "The important thing is that there be a sharing of benefits, which is not possible under the current system."

For the most part, the promise of miracle drugs made from jungle plants remains elusive, because of the costly and lengthy research process required. But during the conference here, Brazilian government officials and advocates for the indigenous peoples complained of what they described as a pattern of undue appropriation of native plants and bacteria and even blood samples from indigenous peoples.

A Japanese pharmaceutical company, for example, has sought to patent an extract derived from a root called muirapuama, considered an aphrodisiac here and known locally

as "Amazon Viagra." In addition, an American businessman tried to patent ayahuasca, a hallucinogen that is used for religious purposes by Amazon shamans but also thought to have therapeutic effects.

Indigenous leaders here and their advocates say such actions are comparable to their trying to patent the process that produces kosher food or the host that Catholics consume during Mass. But pharmaceutical companies and other research institutions in the United States and Europe say that none of their activities are illegal under Brazilian or international patent law.

In 1992, an International Convention on Biological Diversity that granted some patent protections to "traditional knowledge" was negotiated at a United Nations conference in Rio de Janeiro. The United States, however, has yet to ratify the accord, in part because of lobbying in Congress by the pharmaceutical lobby.

Legislation to regulate "bioprospecting" in Brazil was introduced in 1995. It passed the lower house of Congress in 1998 but has been mired in the Senate ever since, with the opposition accusing the government of being too lenient with pharmaceutical firms and the government arguing that too tough a stance will discourage research that Brazil cannot afford to carry out on its own.

In the absence of permanent legislation, the government has issued a series of temporary decrees that are intended to regulate research. But many foreign research institutions have hesitated to sign cooperation accords, especially after a pioneering contract between a government-controlled entity and the European drug manufacturer Novartis col-

lapsed last year.

"There are a lot of pharmaceutical companies and laboratories out there that want to sign bioprospecting accords with indigenous communities," said Nilo Diniz, an aide to the senator who introduced the bill. "But they are fearful that the rules will change."

Over the long term, Brazil wants much of the research on medicinal plants and the manufacture of any drugs derived from them to take place on its own territory. With government efforts to support aircraft manufacturing and genome mapping already having proved highly successful, planners see biotechnology as another item that Brazil can add to its list of manufactured exports.

Hoping to foster that kind of research here, an Amazon Biotechnology Center is now under construction in Manaus, in the heart of the jungle. Scheduled to open in April 2002, the center will have 22 laboratories, and its directors hope to attract foreign investment and partners.

At the same time, Brazil is pressing for an overhaul of the international rules governing intellectual property rights so more protections can be extended to its indigenous peoples. But overcoming the mutual mistrust between Brazilians and foreign researchers may prove to be the most difficult task of all.

"People have shied away from the whole indigenous thing because they see it as a morass," said an American botanist who has worked here and spoke on the condition that his name not be used. "It's much more attractive to investigate a coral reef than to have someone accusing you of ripping off the people of the rain forest."