

WHOSE WOODS THESE ARE

ARE GENETIC RESOURCES PRIVATE PROPERTY
OR GLOBAL COMMONS?

by Holmes Rolston III

The German-based pharmaceutical company E. Merck manufactures a treatment for glaucoma based on an alkaloid extracted from jaborandi, a bush found exclusively in the Amazon. Kayapo and Guajajara Indians have long used the plant as a medicine, in a way quite unrelated to glaucoma. Today they harvest and sell the jaborandi leaves to E. Merck under poorly paid conditions. In Germany, the alkaloid is refined and made into eyedrops, which Brazil and other countries import. If a Brazilian company produced the remedy, it would have to pay E. Merck royalties for the patented technology.

No one denies that E. Merck ought to pay fairly for the leaves and their harvesting. The tough issues lie deeper. Does E. Merck owe today's Indians anything because their ancestors once discovered that the plant had medical uses? If there *were* any payments for the right to use the plants (or to synthesize the alkaloid from other

materials) to whom should they go? To the Brazilian government? To those Indians whose ancestors discovered possible medical uses? To those who own, or live on, lands where the bush is found?

According to the Convention on Biological Diversity, signed by 153 nations at the Earth Summit last June, "States have sovereign rights over their own biological resources." The Convention gives national governments the authority to grant access to such resources. While recognizing "patents and other intellectual property rights," the Convention also insists that developing countries have easy access to technological developments and share in the "benefits arising from the commercial and other utilization of genetic resources."

Historically, no nation has ever owned wild plant species, seeds, and germplasm. However, developing nations have begun to claim ownership by the country of origin, saying that they deserve compensation from nations that use their indigenous plant species.

Vandana Shiva, director of the Research Foundation for Science, Technology and Natural Resource Policy in Dehra Dun, India, writes in *The Violence of the Green Revolution*, "The U.S. . . . has engaged in unfair practices related to the use of Third World genetic resources. It has freely taken the biological diversity of the Third World to spin millions of dollars of profits, none of which have been shared with Third World countries, the original owners of the germplasm." Shiva gives as an example a tomato variety taken from Peru without compensation in 1962 that resulted in \$8 million a year profits for the U.S. tomato industry. Altogether, Shiva writes, "the total contribution of wild germplasm to the American economy has been U.S. \$66 billion," despite that "this wild material is 'owned' by sovereign states and by local people."



CHRISTOPHER BING

Can *natural* resources be *national* resources? Certainly, they often can. Nonrenewable resources (ores, minerals, petroleum) are owned by the nation state in which they happen to be found, indeed by private individuals and corporations within such states. So are biotic resources, if one is referring to harvested materials. Nations and individuals own the forests on their land; farmers own the crops in their fields.

However, ownership of species or natural kinds is less evident. One may own gold on his land, token samples of a type, but no one owns gold as a natural kind; no one owns the structure of the atom. One may own bushes of jaborandi, but does anyone own the DNA coding within it or the species as a historical line? The peasant farmer or the developing world nations do not own wild germplasm any more than the modern agriculturalist or developed nations. We do not pay Afghanistan for the use of the bread wheat species which originated there, nor do we pay Mexico for the use of corn, nor have we paid Ecuador and Peru for tomatoes and potatoes. Nor have South and Central American plantation owners compensated Malaysia for bananas or Ethiopia for coffee.

What is the difference between the tomatoes taken from Peru, first centuries ago and more recently in 1962, and used elsewhere, and the bananas taken from India centuries ago, and now grown all over Central and South America? The peoples in these nations have never and do not now pay the Asian Indians anything, nor should they. Chickens, raised the world over, originated as jungle fowl in Southeast Asia. If taxol from the Pacific yew tree found in the U.S. northwest proves a cure for cancer, and if it can be grown in the cool climates of Argentina, will Argentineans owe royalties to the states of Washington and Oregon, or to the U.S. government? Although original wild species are first found inside national boundaries, these boundaries are incidental and sometimes are even drawn after the species is identified.

According to Shiva, "The North has always used Third World germplasm as a freely available resource and treated it as valueless. The advanced capitalist nations wish to retain free access to the developing world's storehouse of genetic diversity, while the South would like to have the proprietary values of the North's industry declared a similarly 'public' good. The North, however, resists this democracy based on the logic of the market. . . . There is no philosophical justification for treating some germplasm as valueless and common and other germplasm as a valuable commodity and private property."

Shiva is right that there is no justification for treating some germplasm as valueless, but there may be a justification for treating wild germplasm as communal and manipulated germplasm as private property. Shiva equates ownership of agricultural kinds and industrial patents, and advocates freely sharing them. Her position takes as equals what are not equals—wild species and the products of human labor; the one is communal and the other is property. Contrary to her allegations, discriminating between the two does not mean imposing "double standards."

Matters will be different, we concede, where the germplasm is not that of wild species, but that which results from the

breeding skills of farmers over generations (an argument Shiva also advances). That does equate equals in principle: the labor of traditional farmers versus that of latter-day geneticists. Unfortunately, ownership will be vague in nations that have had no patent system over the centuries, and even patents are for limited periods of time. But one can consistently argue that the North overlooks the husbandry of the South over the previous years of agricultural civilization.

Many will worry, as I do myself, that the logic of this argument comes out the wrong way for the developing world. North Americans get better tomatoes; the Peruvians get nothing. Germans profit from Merck's sales; the Amazonian Indians remain poor. We lament the inequitable distribution of wealth in the world, and developing nations may be quite right in pointing it out. No one wants uncritically to defend profiteering industrialists. But it is important to follow one's logic whether or not one likes where it leads. Conservation based on an unsound logic will come undone sooner or later. Surely there is a sounder logic by which fair and equitable conservation can be achieved.

Careful readers will have noticed that the Convention on Biological Diversity, though it insists on "sovereign rights to exploit natural resources," avoids the language of ownership. It speaks instead of "access to genetic resources." That can be interpreted as ownership, but need not be. Patent holders do own what they give access to. Do nation states own the species to which they give access? Not necessarily. Landowners may control access to their property, even though they do not own the wildlife on it. Sovereign nations may control access to their territories, even though they do not own the wild species on their land.

In 1991, U.S.-based Merck & Co. Inc. signed an agreement with the National Biodiversity Institute of Costa Rica. The Institute is attempting to identify all wild plant species in the country, do a preliminary screening, and make agreements with pharmaceutical companies for further use of promising plants. Merck provided \$1 million over the years 1991-1992 and gets in return the exclusive right to screen the collection for useful plant chemicals. The agreement does not imply that Costa Ricans own the plants, but that they have the right to give or withhold "permission to collect" on their soil, and that they can be paid for this permission. In the Merck case, this money will go to fund the collection.

In other cases, such moneys could go to fund on-the-ground conservation. Profits from industries using wild resources should help assure that the remaining resources will be conserved, regardless of national boundaries. These are global commons conservation problems and opportunities. Ownership issues and rights to exploit ought to be conceived as a commons that we all have to protect. North and South, governments and industry, are all obliged to save the commons if they are to share it. These species belong to us all. ■

Holmes Rolston III is professor of philosophy at Colorado State University and president of the International Society for Environmental Ethics. To participate in a project documenting indigenous plant lore, see Herbal Medicine in Central India, p. 66.