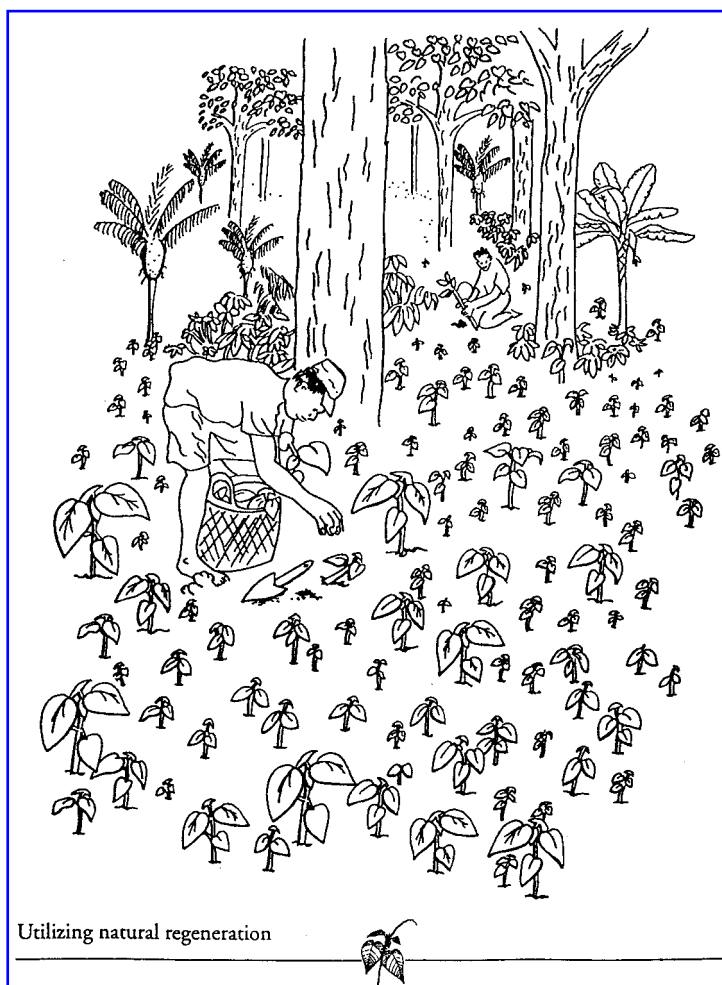


PHOTOESSAY

Biocultural Diversity, Phytomedicines, and Tropical Rainforests: The Holistic Link from Practitioner to Cultures of the Tropical Rainforest

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Left: An illustration of local people collecting *Croton lechleri* seedlings under a “mother” *Croton lechleri* tree, which is part of a manual on the sustainable harvesting of this plant medicine. *Top right:* The *Croton lechleri* tree, *Sangre de Drago*, cultivated in a mixed agroforestry system in the Quichua Indian community of Molino, Ecuador. *Bottom right:* Manual Ramirez holding latex of *Croton lechleri* in his hand in his backyard mixed-species house garden, part of his living pharmacy for his family and community in the region of Iquitos, Peru. Drawing and photographs courtesy of Steven R. King. © 2003.

When you recommend medicinal plants do you ever wonder about the health of the people who harvested the plant or the forest it came from? These three pictures tell a story that lives and breathes behind many of the phyto-medicines that have become part of our alternative and complementary pharmacopoeia. The images speak of how interconnected we are to the people and plants of the tropical rainforests. In this case I focus on the latex of (or sap) of *Sangre de Drago* (*Croton lechleri*), which is used to treat gastrointestinal problems such as diarrhea, stomach ulcers, and several other internal and external health problems (Carlson et al., 2000). An extensive review of the research conducted to date on the efficacy and safety of this species is in this issue (Jones, pp., 877–896). There are a number of companies that carry and distribute this extracts and preparations from this widespread Amazonian tree species.

The focus of this phyto/photoessay is not the biologic and medical importance of this species in the North America and Europe. The narrative that is shared focuses instead on the role of this plant among the peoples and cultures of the rainforest where this traditional medicine has been used for centuries. There is a great deal of green and fair trade marketing taking place in the sphere of alternative and complementary medicine, which is often weakly linked to the places and cultures of origin.

Let us take a closer look at how our health is interwoven with the peoples and cultures of the Peruvian rainforest. This beautiful pioneer tree species, *Sangre de Drago* (dragon's blood) is found throughout the northwestern Amazon in Colombia, Ecuador, Peru, Bolivia, and Brazil. It is known and used by dozens of tropical forest peoples throughout this region. Each culture group has its specific name for this botanical medicine. The latex of this tree is red and it is a common house garden medicinal. Mothers and other healers often collect the latex for care and treatment of their families and patients from right outside their homes. There is also a national trade and market for this latex among the urban center of the Andean nations. In fact there is rapidly growing national and international public health focus on utilizing traditional medicines to manage malaria and a

number of diseases and health problems. Ironically, as more and more people utilize these plants as part of alternative and complementary medicines, the national and international public health care agencies are working to incorporate these treatments in health care systems.

The illustration of a person collecting seedlings in the forest is part of a Spanish-language manual on the sustainable harvesting and management of this species (drawing at left). This pioneer tree species (top right) is part of dynamic human ecological cycle in secondary forest habitats. The tree produces up to 500,000 seeds per year. The fruits have three segments and during the "drier" phase of the year the fruits explode, similar to popcorn popping, and distribute the seeds to the forest floor. Many seeds are eaten by birds and insects, other melt into decaying layer of leaves and soil. A great number, however, lie dormant in the soil awaiting the right conditions to sprout and grow. When people clear the secondary forest to plant gardens or build homes, the sun heats up the soil and the seedling (hence the name pioneer species) quickly sprouts and begins to grow. This species has been documented to grow up to 1 foot per month for the first several years of its life cycle. This tree is a common invader of gardens after people have finished the 12- to 18- month harvesting cycle of maize, manioc, and plantains. It is quite common for households and communities to maintain these volunteer living pharmacies for daily health care needs and for collection and sale to local and regional markets.

Taking care of the health of families in communities of indigenous peoples is often the managed by women. Caring for families involves health care, nutrition, education, and other primary necessities. Most of the communities that I have had the privilege to work with over the past 20 years have expressed a persistent desire to generate income for their families via the sale of a variety of nontimber forest products (NTFP), artwork, textiles, and other materials that are generated from the forests in their environment.

The third image of this set (bottom right) is Manuel Ramirez in his back yard agroforestry garden in the northern rainforest of Peru. He

has been planting seedlings and allowing “volunteer” spontaneous Croton tree’s to fill his house garden to treat his family and to sell latex to the local market. He has also been providing seedlings to regional reforestation projects as part of a growing national interest in the production of this species. The government of Peru and several international development agencies have been supporting reforestation activities with several medicinal plants that are part of national and international commerce. There is an increasing emphasis on finding and developing international markets for phytomedines from Latin America, Africa, and regions of the planet that are epicenters of biologic and cultural diversity. These efforts are important because the diversity of languages and cultures around the planet are disappearing at an alarming rate.

Our opportunity to treat, heal, and self-medicate with many phytomedicines from the Amazon rainforest such as *Una de gato* (*Uncaria tomentosa*), *Sangre de Drago*, and *Pau d’ arco* (*Tabebuia* species) should ideally support the people and cultures who first discovered the healing properties of these rainforest botanical medicines. This requires a certain degree of

awareness and focus on our part as we learn about the origins of these plants and how to honor the cultures and environments where they have coevolved. The best way to cultivate this awareness is to ask questions about the origins of the phytomedicines that we use, who collected or cultivated them, and how does this process fit into the human ecology of the communities that produced them. A holistic analysis and treatment of our mind, body, and spirit should ideally be extended to the people and habitats of the world that discovered and produce healing plants for practitioners and patients.

REFERENCE

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