Mesoamerica’s Biocultural Heritage
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*Organic beans grown under the shade of the Cloud Forest of La Sepultra Biosphere Reserve, Chiapas Mexico. From 'Expedition Chiapas', Cristina Mittermeier, 2010*

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An Editorial...

Dear Friends of Terralingua,

I would like to say it was a pleasure to meet many of you at our recent Nature and Culture event*. There were many highlights of that day for me, beginning at 3:00am, when Jan van der Ploeg and I were trying to figure out how to put up illustrations from a crocodile manual, and at 4:00 pm, with Victor Toledo in the chat box! It seems we had over 600 unique visits to the event from all over the globe! It is from this event that many of the connections and articles came in for this issue of Langscape.

I must admit, my initial inspiration came from one scientist who was venting his frustration in the background, “I am literally banging my head against the wall, trying to bridge that knowing-doing gap! How do we motivate people to make real change in a global crisis?” It’s true, according to the experts out there, biocultural diversity is the sixth extinction of life on earth, following the one that wiped out the dinosaurs—the first one to be entirely human-made— and all my children know how to do is put parental controls on my internet account! What can we do so people will truly listen? As one discussion participant points out: “We are trying to “sell” (sorry for the metaphor) BCD to people who are being evermore conditioned to serial instant gratification. BCD is “slow food”; and we are up against McDonald’s.” (David Harmon).

So it is at this point that we bring in the stories. The theme being Biocultural Diversity in Mesoamerica, we begin with a collaboration between two colleges, Luisa Maffi and Petul Hernández Guzmán, who worked together, many years ago, among the Tzeltal Maya. One goes off to pioneer the field of biocultural diversity, the second returning to his people to revitalize traditional knowledge. Tales of Biocultural Diversity illustrates the power of stories as a medium to INSPIRE for change.

Then we move on to Victor Toledo’s article, The Biocultural Heritage of Mexico, where we get a clear overview of what’s happening, where and why. It was Victor’s suggestion for a regional Langscape issue, where we can acknowledge the real work in Biocultural Diversity that is being done globally.

Suzanne Cook completely immersed herself in our discussion event. Her experience with the Lacandon Maya was fascinating, so I approached her for an article. What I enjoy about Suzanne’s article is the tactile information on the plants. Real, earthy knowledge, to digest and process. We can talk about the issue of traditional knowledge, but I wanted to start hearing and learning it.

So now we have a theme that is meaningful, stories for inspiration, and traditional knowledge to learn from. The next is tone of voice and expression. I was inspired when I read Felipe Montoya’s responses at our event, because he really had something to say worth listening to: a real way to make change in how we design and cater our programs with indigenous communities, so that they encompass not just the financial, or the environmental needs of a community, but the true well-being of a community, so their hearts and minds are acknowledged as well.

To wrap it up, we have art. For art speaks to us without words. For all the photographs I scanned, Diego Rivera just speaks of the Biocultural Heritage in Mesoamerica. We are truly honoured to have had donated to us the photographs of Terralingua Board Member and ILCP** director, Cristina Mittermeier. We chose photographs from her expedition in Chiapas, Mexico, for they illustrate how we can change the agricultural system to enhance Biocultural Diversity rather than demand from our already depleting resources.

The final step is You. Our lives are busy, our email boxes are clogged, but over here in North America it’s summer, the sun is shining, and all we want to do is slow down and relax. I know I can hardly tell you what a peaceful mind can do. So, I invite you to sit down with a cup of tea, some herb from your garden or filched from your neighbour’s yard (even organic, shade grown coffee for that matter), and read this issue of Langscape at your leisure.

Let us raise a cup to our anonymous scientist, this issue of Langscape is dedicated to you.

Sincerely,

Ortixia Dilts
Creative Designer, Langscape, Terralingua

August 18, 2010
Salt Spring Island, BC, Canada

*the event Nature and Culture: the true web of Life was held June 30, 2010 for the launch of our new web portal – Biocultural Diversity Conservation: a community of practice. www.terralingua.org/bcdconservaton.

** ILCP: International League of Conservation Photographers
On a sunny but crisp winter morning in the Highlands of Chiapas, Mexico, I was standing outside the field clinic in one of the hamlets comprising the Tzeltal Maya municipio of Tenejapa. It was the early 1990s, and I was in Tenejapa to do my doctoral research on Tzeltal ethnosymptomatology—the Tzeltal language of signs and symptoms of illness. As a part of this research, I was also interested in issues of culture change: how traditional medical knowledge was being affected by Tenejapas’ ever increasing contact with national Mexican society through the rapid expansion of communications with the outside non-indigenous world, Western media, formal schooling, and access to biomedical care. I had come to this hamlet on the designated day for the periodic visit of the Mexican Health Services pasante (medical trainee) to the field clinic, in order to witness his interactions with Tenejapan patients, in the hope to begin building my understanding of the local dynamics of medical systems in contact by engaging some of the patients in casual conversation about their health-seeking attitudes and behaviors.

Long before the clinic opened its doors, Tenejapan men, women and children had been lining up in wait—an ideal circumstance for striking conversations. Aided by my Tzeltal collaborator, the hamlet’s promotor de salud (health promoter), and after identifying myself and explaining the purpose of my study, I started chatting with some of the people in line, who (once it was clear I was a student and not related to the Health Services or other national or state agency) did not mind discussing the health reasons that had brought them there. My expectation was to hear complaints about some of the more serious or uncommon illnesses known to the Tzeltal—many of them imported by colonizers from the Old World, and for which the Tzeltal medical tradition has not developed effective treatments. But, to my surprise, the overwhelming majority of complaints referred to some of the most common ailments recorded among the Highland Maya—diarrheas, coughs, colds, skin problems—for which an abundant, efficacious traditional pharmacopoeia (mostly botanical in nature) was readily available (Berlin et al. 1990; Berlin and Berlin 1996).

Perhaps, then—my next assumption was—these people had already tried to treat their ailments the traditional way without success, and were now submitting these stubborn syndromes to biomedical attention for treatment with more potent synthetic drugs. I asked the question, but again I was wrong. Prior to coming to the clinic, I was informed, my interlocutors had either self-mediated with pharmacy-purchased drugs, or done nothing at all. I looked around: true, most of the people in line were younger men and women, but for Tzeltal standards they were adults, fully developed and functional members of society, already with family and other...
customary adult responsibilities; they lived and worked in the village, spoke Tzeltal fluently (if peppered with Spanish words). It could not be that they had not yet acquired the traditional medical knowledge. Could it be that they had not acquired it at all?

I turned to a young man, who was carrying in his arms his two-year old daughter suffering from diarrhea, and who had already struck me by telling me he had started out at dawn from his isolated household to get to the clinic—hours of walking, and now hours of waiting, with his sick child in his arms, hours of delay in getting treatment, a delay that might well prove fatal to her. With mounting anguish I asked him whether he knew of any plants or other local remedies for diarrhea, even if he had not tried to administer them to his daughter. He searched his mind, apparently in vain, then looked to another, slightly older man nearby, and started an animated discussion in Tzeltal with him. It became clear that between the two of them they were trying to bring up and piece together scattered fragments of latent ethnomedical knowledge—knowledge perhaps only imperfectly learned, never concretely used, and now almost forgotten. I heard them question each other: “What’s its name, the grasshopper thing?” The “grasshopper thing”: yakan k’ulub wamal ‘grasshopper leg herb’ (Verbena litoralis), one of the commonest diarrhea remedies in the Highlands. They could hardly remember its name, let alone master its use.

The pasante had finally arrived, and people started filing in. I watched the young man walk off with his daughter in his arms, sent my promotor collaborator after him to try and ensure the man would get the best possible for his daughter out of what I already knew was almost invariably unsympathetic, superficial, culturally (and often even medically) inappropriate biomedical care, and stood there, with a sinking feeling. No doubt, that young man had to have the omnipresent yakan k’ulub wamal growing right in his back yard, but perhaps he could not recognize it, or if he did, he clearly did not know how to use it. Or maybe he had actually pulled it out as a weed, as my own collaborator had told me he had unknowingly done with medicinal plants his late father, a healer, once kept in his house garden—only to later become aware of their virtues, paradoxically, through his work with ethnobiologists and other Tzeltal traditional healers.

Petul and I had just finished recording a Tzeltal Maya elder, Don Antonio, who was telling us some of the old stories about people, plants, places, and spirits. The man had been talking for hours, showing no sign of getting tired, in spite of his age. Petul and I, instead, were exhausted. As we sat back, taking a rest, I asked him—my invaluable collaborator through two years of doctoral fieldwork in the highlands of Chiapas, Mexico, in the early 1990s: “Well, Petul, I guess this is what you folks normally do at night, sit around with the elders telling stories?”

From the puzzled look on Petul’s face, I figured that something wasn’t exactly as I had imagined. “Huh—said Petul after a moment of reflection—actually, that was the way it used to be… But now, you see, the kids are going to school, and when they come back at the end of the day (if the school is close enough that they can come back daily at all), they have homework to do. So that’s what happens at night: they sit at the table under the light bulb and do the homework. Some of the people, also, now have TV, so they sit around and watch TV at night. We don’t spend that much time visiting one another and listening to stories anymore. The kids often think that the old stories are weird, anyway, because of what they learn at school, or see on TV…”

J-ilawaletik yu’un martomaetik (Mujeres que atienden a los mayordomos) (Women who take care of the chiefs).
He paused, and I saw he was thinking. We had been working together for several months now. Going around with an anthropologist interested in the “old ways” had made him keenly aware of how things had changed. He had started asking himself questions about why things had changed the way they had, and whether things were better or worse for that. A turning point had come for him, earlier on, when he realized that a plant he had pulled out as a weed from the milpa (corn field) he had inherited from his traditional healer father actually was a widely used and effective traditional remedy for gastrointestinal illness among the Tzeltal Maya. Because Petul, himself, had gone to school—and the missionaries had told him that traditional medicine was mumbo jumbo—he had not sought to learn his father’s knowledge. Then his father had died, and his knowledge of medicinal plants had gone with him. Ironically, that knowledge had only come back to Petul through the work he was doing with a team of ethnobiologists interested in the traditional Mayan medical system…

“You know what?—Petul resumed after a while—I think I’m going to start a circle of stories. I see that we’re losing a lot from not telling stories anymore. I’ll invite Don Antonio and other elders like him to come to my house on Saturdays, when the kids are home free, and tell the neighbors to join us. This should be good!” And so it went, and—at least in one household in the Chiapas Highlands—stories began to be told again.

Petul himself then went on to become an ethnographer and photographer, and gathered stories and photos in a book about his own community. He now teaches Tzeltal Maya at a local university, and still works as a photographer. Through the work he has been doing, not all the old stories and their lived context have been lost…

J-ach’ix ak’pon yu’un martoma (Muchacha sirviendo incienso para el Mayordomo) (Young woman serving incense to the chief)
The Biocultural Heritage of Mexico: An Overview

Víctor M. Toledo, Eckart Boege and Narciso Barrera-Bassols

Introduction

Studies from different disciplinary backgrounds are revealing the inextricable links between cultural, biological and agricultural diversity at global, national, regional and local scales (Maffi, 2005). These multidimensional and complex relations are named ‘biocultural diversity’. In some way, these links represent the (biocultural) memory of the human species, because they are the present–day expression of a long historical legacy of interrelations between humans and nature (Toledo and Barrera-Bassols, 2008). At the country level, the conjunction of these three dimensions represents the nation’s biocultural heritage, and it is revealed through the geographical analysis of wild plant and animal species, languages, domesticated organisms, and especially territories of indigenous and local peoples.

In this essay, we offer an overview of the biocultural heritage of Mexico, through the discussion of three main topics: (i) a brief description of biological, linguistic and agricultural diversities; (ii) the definition, identification and mapping of biocultural hotspots in the Mexican territory; and (iii) a rapid review of the main grassroots initiatives and projects engaged in the multiple defense of biotic resources, germplasm, language, cultural identity, local livelihoods and territory. Our national-scale review synthesizes decades of work carried out by Mexican researchers and foreign colleagues about the main components of biocultural richness of Mexico.

Mexico: The Third Biocultural Center of the World

The complex connections between dimensions of linguistic, biological, and agricultural diversity become evident when they are analyzed at a global scale. Such correlations reveal that, in general, the majority of languages and of plant and animal species are situated in countries that are located along the fringes of the tropics (Oviedo, Maffin and Larsen, 2000). The principal centers of domestic plant and animal dispersion are located in these countries, in addition to a majority of cultural centers and/or a majority of the birthplaces of civilizations (Toledo and Barrera-Bassols, 2008).

Mexico, a megadiverse (the country alone contains 10% of the biological diversity found on the planet) and megacultural country (11 linguistic families, 68 language groupings, and 364 language variants according to INALI, 2007) has provided a historical linkage of these two worlds through the generation of one of the most important and singular civilization poles of humanity: the Mesoamerican Civilization.

As a consequence, Mesoamerican peoples domesticated 15% of the plant species that make up the world’s food system (CONABIO, 2008). This feat of civilization was achieved through the manipulation of plant populations, landscapes and productive systems, and through the multiple uses of natural resources. This savoir-faire about nature, largely perfected during almost 9,000 years, constitutes without doubt the bulk of the biocultural patrimony that exists in Mexico. As mentioned above, from a biocultural perspective Mexico occupies third place on a world scale, just after Indonesia and India, and just before Australia, Brazil, and China (Figure 1).

i. Biological diversity

Due to its geographic location, its geological history, and its heterogeneous topography, Mexico represents an exceptional setting for the multiplication of species. The confluence of Nearctic and Neotropical vegetation lineages that occurs in the mountain ranges offers a complex network of biogeographical locations in the form of a mosaic, which gives place to innumerable niches that are relatively small in size.
This landscape heterogeneity, a product of natural history, results in an incredible biological richness. Mexico occupies the third place in the world in the number of vascular plant species and endemics, and the fourth place in the richness of vertebrate species and endemics (mammals, birds, reptiles, and amphibians). Overall, the plant and animal diversity that occurs in Mexico places the country as the fifth most megadiverse country in the world, containing approximately 10% of the biological diversity worldwide (CONABIO, 2008).

### ii. Linguistic diversity

Much of the current Mexican territory is the site of one of two main centers of civilization that developed on the American continent over more than 10 thousand years. In its cultural importance and complexity, this center of civilization resembles those that originated in China, India, Mesopotamia, the Andes, and Egypt. The diverse peoples that coexisted on this territory shared a common base in terms of their worldviews, knowledge, and production methods. Today, this legacy of civilization is represented by the existence of more than 300 living languages, most of which are endemic and are spoken by a population estimated between 7 and 10 million people. The significance of this richness places Mexico as the fifth most linguistically megadiverse country in the world (www.ethnologue.org).

### iii. Agricultural diversity

Another substantive feature of biocultural diversity in Mexico is that it constitutes one of the 12 Vavilov centers, or centers of origin of the domestication and diversification of plants in the world. This Mesoamerican effort of plant domestication comprises 15% of the crops that are currently consumed in the world. Such effort is fundamentally based in the domestication of maize, an emblematic icon of Mesoamerica, accompanied by another 110 species that include the tomato, chocolate, vanilla, bean, squash, and chile pepper. This region also excels in adaptation to the heterogeneity of the landscape through the design and implementation of the multi-cropped milpa system. The milpa is an agricultural field characterized by the planting of a triad of crops, maize-bean-squash, which on occasion is accompanied by up to ten to twenty associated species.
The Biocultural Hotspots

The definition, location, and delimitation of biocultural centers or hotspots in space is achieved utilizing scientific information, statistics, and cartography of biological, linguistic, and agricultural diversity, and their correlation with indigenous territories. In Mexico, 22 biocultural centers are recognized (Figure 2). They are the result of a “core nucleus” of indigenous territories totaling at least 28 million hectares in size with 6.79 million indigenous inhabitants, making up 14% of the national territory. Inside and out of this nucleus another 3.31 million inhabitants who speak an indigenous language live in 27,712 localities (Boege 2008). The importance of these biocultural hotspots is emphasized by the five following situations:

i. Water capture.

Approximately 23%, or about a quarter, of all water captured nationally is collected in biocultural hotspots. The majority of the water is collected in basin watersheds that are directly impacted by atmospheric events such as hurricanes, north winds, and cyclones. These areas act as a sort of sponge that captures water, and for this reason they provide highly valued ecosystem services.

ii. Biodiversity.

In Mexico, the majority of the ejidos (new peasant settlements resulting from the Agrarian Reform of 1917) and comunidades (some 35,000 in total), which make up the core of peasant and indigenous territories, is localized in the ten states of the Mexican Republic considered as the richest in biological terms (these states include Oaxaca, Chiapas, Veracruz, Guerrero, and Michoacán among others). Approximately 70% of indigenous territories is under some sort of priority for the conservation of its rich biological resources, including centers of natural origin and high agrodiversity areas.

Figure 2. Geographical location of 22 biocultural regions in the Mexican territory. For details see Boege, 2008.
iii. Remaining vegetation.

Essentially all types of vegetation present at a national level are encountered in these centers (Figure 3). Most importantly, the biocultural centers maintain 76% of tropical deciduous forests, 70% of tropical rain forests, 63.5% of tropical semi-deciduous forests, 54% of temperate mixed forests, and 30% of pine and/or oak forests that remain in the country. For the remaining vegetation that occurs within indigenous territories, it is estimated that there are 15,000 species of plants, half of the entire flora of Mexico (Boege, 2008).

iv. Natural protected areas.

Of the total 152 protected natural areas at a federal level that exist in Mexico, 52 have indigenous populations living within them. These protected areas have a surface area of 5.57 million hectares, where 1.46 million hectares overlap with indigenous territory. If this surface area is added to the areas protected at the state level that coincide with indigenous territories, a total of more than 2 million hectares that are protected by law can be found in indigenous territories (Boege, 2008).

v. Maize diversity.

The history of the domestication of maize, squash, beans, chile peppers and another 110 Mesoamerican crops in Mexico is indissolubly connected with the cultural development of indigenous peoples that have farmed in this region for more than 9 thousand years. Out of all of these crops, maize is the most emblematic. Because of this, it is essentially unknown whether humans domesticated maize or maize domesticated humans. Since Mexico is the center of origin and diversification of maize, the bulk of its genetic bank at the global level is located in Mexico. This reserve is distributed in situ across the country at altitudes that range from sea level to 3,400 m.a.s.l. Under conditions of incredible landscape variety, up to 60 races of maize are cultivated (Ortega-Paczka, 2003) and hundreds or perhaps thousands of local varieties of native maize are adapted to micro-specific ecological conditions. Such adaptations are also a response to cultural, food, ritual, and commercial necessities (Perales et al, 2005). The consumption of native maize is the quintessential staple of Mexican diet and gastronomy, where the largest part of this consumption occurs in indigenous territories.
Biocultural Resistances: Grassroots Projects

i. Community-based conservation

Within a context of high social presence in the agrarian system, community-based conservation has been a growing process. In Mexico, local participation in biological conservation has been facilitated by legislation and several government programs. The main program has been the Project for Biodiversity Conservation by Indigenous Communities (COINBIO in Spanish), which developed actions in villages of three states: Oaxaca, Guerrero and Michoacán. As a result, only in Oaxaca there are 16 community-based reserves, which give protection to over 45,000 hectares. By 2007 the National Commission on Natural Protected Areas (CONANP) accepted and certified around 170,000 hectares as locally conserved areas (Boege, 2008). More recently, in Quintana Roo 49 Mayan ejidos have spontaneously promulgated and established areas of tropical forests for conservation, offering protection for water bodies and archeological sites, and linking these initiatives to projects of ecotourism (Elizondo and López-Merlín, 2009).

ii. Shaded coffee agroforestry systems

Coffee landscapes are man-made landscapes resulting from a complex set of environmental and social processes. In Mexico, there are five main modes of producing coffee (Figure 4): (i) the two shade-grown coffee systems established under a multilayered and multispecies canopy of native trees that generally are creations of indigenous, small-scale growers (rustic polyculture and traditional polyculture); (ii) two coffee systems established under planted trees that correspond to either small- and medium-scale farmers or large-scale owners who are highly involved in the production of specialized cash crops (commercial polyculture and commercial monoculture); and (iii) the sunny coffee system, a monoculture which utilizes chemical fertilizers and pesticides and generally is grown by major landowners. Each of these five types of coffee systems reflects specific combinations of biological, ecological, cultural, agrarian, and social factors (Moguel & Toledo 1996, 1999). The two traditional shaded coffee agroforests, but especially the traditional polyculture, also called coffee garden, represent an advanced stage of human manipulation of the native forest architecture and composition. They represent a sort of humanized natural forest, which can function as an important refuge for biodiversity (principally birds, mammals, flowering plants, and insects).

In the last two decades, a growing movement of cultural resistance has made Mexico the first producer of certified organic coffee in the world. It is estimated that almost 300,000 hectares are dedicated to growing traditional coffee gardens. Today there are 350,000 small-scale coffee growers in Mexico, mainly in the states of Chiapas, Veracruz, Puebla, Guerrero and Oaxaca. These growers produce 40 percent of the total national coffee production, and almost all of the organic shaded coffee. In the state of Chiapas, for instance, 107,000 coffee growers, two-thirds of whom belong to indigenous communities, and many of whom produce certified organic coffee through over 100 local and regional cooperatives, are strategic social actors for any biological conservation project (Toledo, 2003).
Struggles for the Preservation of Native Maize

The genetic contamination of native maize that has been discovered in indigenous territories and peasant communities of Mexico during the last decade, and the imminent arrival of genetically modified maize to Mexican parcels, have caused an uprising of unusual resistance all over the country (Barrera-Bassols et al, 2009) (Figure 5). Such movement at a national scale has been nurtured by urban, peasant, and indigenous claims synthesized in the slogan “without maize there is no country” (“sin maiz no hay pais”). Within the framework of this social struggle, an ensemble of local actions, undertaken by a diverse array of indigenous and peasant communities and adapted to their own cultural and environmental contexts, has led to the elaboration of political discourse and practices in which maize appears as an emblematic icon in their claims, which express: (a) rejection of agricultural technologies such as transgenic biotechnology; (b) opposition to the local effects of the global market; (c) disapproval of the health effects caused by both; and (d) a defense of local food sovereignty in the face of the loss of Mesoamerican agro-biodiversity that is occurring in their territories.

Figure 5. Geographic distribution of: (i) maize landraces of Mexico, (ii) recorded sites with presence of transgenic maize (black dots), and (iii) grassroots movements of peasant and indigenous peoples against the genetic contamination of maize (arrows). For details see Barrera-Bassols, et al 2009.
Concluding Remarks

In a country that is profoundly characterized by its biocultural richness, it is difficult to design any conservation policies without taking into account the profound relationship that has existed since time immemorial between nature and culture. In Mexico, each species of plants and animals, each type of soil and landscape nearly always has a corresponding linguistic expression, a category of knowledge, a practical use, a religious meaning, a role in ritual, and an individual or collective vitality. To safeguard the natural heritage of a country without safeguarding the cultures that have given it shape and meaning is to reduce nature to something beyond recognition: static, distant, nearly dead. Similarly, it is not possible to safeguard cultures while destroying the surrounding nature that support them and gives meaning to their existence. That is a simple but inescapable and vital principle.

V.M. Toledo, ethno-ecologist, researcher at the Centro de Investigaciones en Ecosistemas, Universidad Nacional Autónoma de México (vtoledo@oikos.unam.mx). E. Boege, anthropologist, researcher at the Instituto Nacional de Antropología e Historia of Mexico. N. Barrera-Bassols, independent researcher.

References


Don Ausencio is an organic coffee grower. His coffee is 100% shade grown, pesticide free and fertilized with natural compost. La Sepultra, Chiapas, Mexico. ©2010 Cristina Mittermeier
The Forest and the Traditional Religion of the Lacandon Maya:
an example from the balche’ ceremony

Suzanne Cook

I work with and live among the northern Lacandones, a small enclave of approximately 300 Mayas located in the rain forest in Chiapas, Mexico. They are the most culturally conservative of the Mayan groups, partly because of their isolated forest environment and partly because they lived in small extended households scattered throughout the forest up until the 20th century. Secluded in their jungle refuge, they drew on the forest for spiritual inspiration, incorporating the plants and creatures into their mythology, folklore, and religion.

Since 1990, I have been recording their cultural heritage. During my 20 years of fieldwork there, I have witnessed considerable changes in all aspects of the culture, particularly the decline of the traditional religion. After the death of their religious and civic leader, Chan K’in Viejo, in 1996, the community experienced a tremendous loss. He is credited for undermining missionary attempts to convert his community to Christianity. Shortly after he died, at least three churches of various Christian fundamental denominations were erected, the first being erected on Chan K’in’s property at the behest of his wives.

As inconceivable as this may seem, one may appreciate their decision if one considers that they were filling a spiritual void. Yet, while proselytes promise salvation they are, at the same time, unwittingly severing the connection between the Lacandones’ spiritual world and the forest. What follows is a brief description of balche’ and its significance in the Lacandones’ traditional religion. The discussion is an excerpt from a video presentation featuring Lacandon elder Chan K’in Antonio Martinez. The video was recorded during my field research, in 2009.

The Sacred Significance of balche’

Central to Lacandon traditional religion is balche’. Balche’ was created by the lord Hachäkyum, the Lacandones’ creator, as a means for his mortals to venerate him. In return, he and the other solar deities would look after the people and prevent the world from coming to an end. Thus, the preparation and offering of balche’ was vital to the Lacandones’ health and safety.

Virtually all Lacandon rituals involve the offering of balche’. But the balche’ ceremony itself entails a complex of ceremonies involving offerings of food and other objects, in addition to balche’. The form and the extent of the ceremonial complex are dependent upon what is to be achieved: an abundant harvest, protection from or cure from a disease, or the safe delivery of a child.
Plants Used in the balche’ Ceremony

Balche’ refers to the Lance pod *Lonchocarpus spp.*, a tree of the Fabaceae (or pea) family. Lacandones identify two varieties: *hach balche’* and *ya’ax balche’*.

**Hach balche’** ‘real balche’ refers to the *Lonchocarpus longistylus Pittier*. It is a small tree of no more than 25 feet in height. It grows wild but is also cultivated in house gardens and *milpas* ‘corn fields’ for its bark, which is used in the preparation of the ceremonial beverage called *balche’*.

**Ya’ax balche’** ‘green balche’ *Lonchocarpus guatemalensis Benth.*, is one of several plants from which Rotenone, an organic pesticide and fish poison, is derived. Legend has it that Hachakyum’s assistants first made balche’ out of the bark of the *ya’ax balche’,* drank it, and subsequently died. Lacandones report that the *balche’* made from the bark of this species causes severe stomach aches. For these reasons, *ya’ax balche’* is not used to make the ceremonial beverage.

The process involved in making the beverage entails removing the inner bark from lengths of branches, pounding it into thin sheets and then hanging it to dry out completely. Strips of the dried bark and two strips of green bark are submerged in seven large buckets of water and four to five kilos of sugar (wild honey was used in the old days.)

Crucial in the preparation of *balche’* is infusing it with a spell before leaving it to ferment. *Ut’änil balche’* is chanted to invoke the creatures and plants with venomous and hot features or the ability to agitate the solution. Great care must be taken to incant the spell properly, lest the *balche’* turn sour.2 After the invocation, the *balche’* is covered up and left to ferment for three days. On the third day, the *balche’* is uncovered and apportioned among the gods’ drinking cups and those of the participants. Before the host of the ceremony summons the participants, he offers the First Fruits of the *balche’* to the gods, dribbling a scant amount on the protruding lip of each pot. While he does this he tells the gods what he is offering them and why. He then prepares the other offerings that will be included in the ceremony.

Next to *balche’,* the most important offering is *pom*, the gooey resin from *tähte’* *Pinus oocarpa*. The pitch from this tree is mashed into a paste in a dug-out canoe called *chan chemil pom*, and is then rolled into small balls, called *ahpäk’änil pom*. *Pom* is also made from the resin of the *Protium copal*, called *hach pom* ‘authentic copal’. Before burning the *pom* in the god pots, the host consecrates it. These two activities—giving the First Fruits of the *balche’* and consecrating the copal—are rituals in themselves and take place before company arrives.

**Other Plants Used in the balche’ Ceremony**

**Puuna’** *Swietenia macrophylla* is a large, tropical hardwood prized for its timber. The entire trunk is hollowed to make the *balche’ chem*, the ceremonial canoe in which *balche’* is fermented.

Pieces of the wood are used to make the *chan chemil pom*, the three-foot long canoe in which the resin is mashed. Small, rectangular planks are used for the *xikal*, the ceremonial board upon which is placed *ahpäk’änil pom*, the small mounds of the mashed copal offerings. Red dye is extracted from the bark and used to decorate the ceremonial headbands and other ritual objects.
The leaves of the säk bo’oy *Chamaedorea oblongata* are used as mats for the god pots and the xikal (copal board) to rest on, and for the spoons used to drip *balche’* onto the protruding lips of the god pots.

**Hach lunch** *Crescentia cujete* is a large, round green gourd that grows on a tree. The trees are cultivated in house gardens. The gourds are used to make *hämä’,* the large drinking cups.

**Ya’ax hänan** *Desmoncus sp.* is a variety of climbing palm with flexible stems. Fiber stripped from the vines is used to make *yolte’,* the ceremonial headband for pak, the name of the *balche’* serving urn, and for the rings that support the *hämä’*.

### The Fate of the balche’ Ceremony

The *balche’* ceremony is now all but defunct. It is performed occasionally and only at the request of researchers or tourists. Reasons for its demise include burgeoning colonization and all that it entails, and the introduction of Christianity, modern medicine, state-run education, and television. With tens of thousands of homesteaders in the Lacandon forest, finding the privacy necessary to conduct a *balche’* ceremony is impossible. And now that Christianity has taken hold of the community, many converts doubt the efficacy of petitioning the gods; tablets and injections appear to do a better job than giving offerings to the gods.

As is the case with most forms of ritual observance, conducting a *balche’* ceremony is demanding. The preparation of *balche’* requires considerable skill and knowledge, namely knowing how to remove the bark from the *Lonchocarpus longistylus,* knowing the amount of dried bark and fresh bark to use, gauging the correct ratio of water to sugar, and being able to “raise” the *balche’,* specifically, bringing it to life with an invocation. Few people today are motivated or prepared to continue such practices.

What we stand to lose with the demise of this important ritual is a vital piece of the Lacandones’ cultural heritage that traces its origins back to the ancient Maya. More importantly, when the ceremony loses its significance so too does the Lacandones’ intimate association with the forest and their connection with their Creator.

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Current publications include:


*(under review)* When a Star Falls: Creation Myths and Stories of the Lacandon Maya

Nebraska University Press
La Madre De Las Cosechas
Felipe Montoya Greenheck

The Mother of Harvests
(An Excerpt translated into English by Tania Aguila)

This story begins long ago, before you, your parents or grandparents were born, when there was no houses, streets, televisions or radios, when there was no books and the stories that existed were the ones the grandparents told around the fire. It was so long ago, that people still went out hunting and gathering wild fruit to eat. It was a time before people knew how to cultivate the land by planting seeds, in that time so long ago, almost at the beginning of time, there was a girl named Pacha.

Pacha was a very special girl for she did not like to do what other people did. She did not like to go hunting, nor walking through the woods gathering wild fruits. On the contrary, Pacha loved playing in the dirt, burying things and remembering where she had buried them. This was her own game, it was a memory game that only she understood, and with which she amused herself alone.

When Pacha listened to grandparents stories, she remembered every word, so that when she grow old she could tell those stories around the fire. Even though she was small, everyone knew she was special, because she could repeat the stories of elders after hearing them only once. That was the reason why no one bothered her much when she played her own little game that nobody understood; but to her it was fascinating.

From early in the morning until late in the afternoon, Pacha looked for small objects to bury underground, so that she can return days later to find them, she loved to test her memory this way.

On several occasions she wanted to share her game with other children, but the children quickly got bored. She would bury stones of different colors and different shapes, sticks of different sizes and thicknesses, leaves and flowers of different perfumes and seeds that fell in the forest floor. She also buried any fruit, bones and feathers.

Anything that could fit in the palm of her small hand, Pacha would bury. Later on she would return to see how it had changed.
Since she heard the story of a grandmother who told how everything changed over time, Pacha wanted to see how things changed.

The first time she encountered changes in a seed, she thought that some old witch had made some magic in order to scare her, but then it made her laugh to see the furry white tail that came out of the seed. And when she found that the same happened to other seeds that were buried, Pacha started thinking about her own story she would share around the fire, about how things changed.

Pacha’s story went like this: “I buried stones, the hard pebbles that come from the earth, hard pebbles that come from the animals (she referred to the bones), and hard pebbles that come from plants (she referred the seeds). Not all changes the same,” she said as she continued her story, “The ones that change the most are the stones of the plants that grow a tail and little arms.” That is how far her story went, but even though it was short, it was a very good story, a story that no one had ever told.

One night Pacha shared her story, but when she finished, some laughed at the girl’s imagination, while others panicked and thought that witches had something to do with the story of Pacha. Pacha’s game no longer looked so good amongst the people. However Pacha continued her game. She discovered that the white tail and green hands of the hard pebble that come from plants continued to grow into a little plant!

Pacha then added another piece to her story: “The hard pebbles that come from plants, if I put them on the ground to sleep, they dream that they become plants and their dreams come true” But this part of her story she did not tell anyone. Put inside her like a seed, this story began to grow. And it really grew.

This is an excerpt from the beautifully illustrated Spanish story by Felipe Montoya Greenheck which has been published fully on our Portal—Biocultural Diversity Conservation: a community of practice—www.terralingua.org/bcdconservaton
A Development Paradigm for Community Well-being
Conversations with Felipe Montoya-Greenheck

Interview by Ortixia Dilts

Editor’s Note: This article blossomed from my continuing delightful conversations with Felipe Montoya Greenheck. Initiated as an inquiry over the MILPA seed project as presented in Terralinguna’s new publication, Biocultural Diversity Conservation: A Global Sourcebook (Earthscan, 2010), we soon diverged from our original subject and into the intent and thinking behind the MILPA projects, concluding with an inspiring model for community revitalization.

.....tell me a little about Milpa.

I began MILPA as a project to revitalize the living connection between Costa Rican rural communities and the traditional seeds they cultivated. Among the most memorable and enduring activities was a simple seed exchange among small farmers. Paying respects to the local seeds, traditional crops, and land races the participants brought to exchange was very important to tear down the ideology of the supremacy of “improved varieties” that had been introduced and officially promoted, displacing the traditional varieties. Their worth was restored and from that time on (since 1997), traditional seed exchanges have continued to take place in Costa Rica, mostly linked to organic farmers markets. MILPA also organized a conference on Cultivated Biodiversity which was declared of “national interest”. So MILPA pushed the issue among peasant farmers, NGOs and the academia, as well.

Only recently, MILPA was offered a project to “revitalize agricultural-food traditions” among rural communities (one project with the FAO), as well as among urban and semi-urban marginal communities (the other project with UNESCO). We have to come up with a “revitalization strategy”. So the idea is first to understand how these traditions satisfy a number of human fundamental needs (I borrow this concept from Manfred Max-Neef, an economist from Chile). Among these needs are: Subsistence, Protection, Affection, Freedom, Understanding, Participation, Creativity, Identity, Leisure, and Transcendence. Recognizing how preparing or cultivating certain traditional foods contribute to satisfying some of these different needs, will help restore the value of these traditional practices.

The science involved here is basic social science: interviews, questionnaires, with a representative sample of the population so that the results are statistically significant. But in our field work inquiries we also ask about the more empirical science involved in the cultivation and preparation of these traditional foods.

…..and how does language fit in?

Language is probably our most sophisticated instrument not only of communicating, but of actually creating our world. Each language creates a distinct world. Diversity of language allows for diversity of experience, of engagement with the universe, enriching our lives. Language creates our specific world, and hence our world vision, our identity. When we lose a language, we lose an irreplaceable community cultural capital. It is important that our attitude be one of celebration of diversity, rather than feel diversity to be a threat to our identity.
Community capitals are sources of wealth that have the potential of improving wellbeing, but do not necessarily do so. It depends on who has access to these capitals. The more languages we know, the wealthier we are, the richer our outlooks, our experience, our lives.

In general, language diversity is a treasure that allows us windows to multiple worlds. Language allows us to interact with the world in so many ways, almost like seeds adapted to local conditions, land races that make the best use of local conditions. Languages are to be treasured and celebrated. They are “capitals” or “accumulated work” of generations upon generations, which we inherit. What a gift!

...could you please explain more about community capitals?

The story is quite simple. This is the way I see it:

1. Everyone has similar fundamental needs: subsistence, protection, safety and security, affection and communication, freedom of movement and expression, learning and understanding, creativity, participation, leisure, identity and transcendence.

2. People do “stuff” all the time in their daily lives, often to satisfy these needs. They walk, they talk, they play, they work, etc.

3. But what they do also creates more permanent “stuff”, like houses, languages, cultivars, human relationships (social capital), landscapes, religions, skills, money, institutions (these I call community capitals, because I see “capital” as the “accumulation of work”).

4. There is also the God-given earth and sky that some call “natural capital”, and in the sense that humans “work” to define and protect parts of it, I would agree to call it “capital”, or we might want to consider this gift as “Capital”, as the result of the Work of God, the Great Spirit, Mother Earth.

5. Community capitals are then accessed by people to further satisfy human fundamental needs. But not everyone has equal access to community capitals. In fact, some capitals are “subtractive”, that is, like a pie: if I take a piece, that subtracts a piece from everyone else. So people tend to fight over these capitals.

6. But then, -here is the magical part- there are also “summatory” capitals, that if I take a piece, it actually sums up to become more for everyone to use. Like “social capital” for example, if I present my friend to you, I don't necessarily lose a friend, and you may actually gain one, so we all win.

7. So it behoves us to invest much more in “summatory capitals” like social capital (human relationships), cultural capital (human knowledge and artefacts), human capital (skills, health, Self-confidence), political capital (organization, political representation), etc. Where the more we share, the more we have...

Wellbeing, then is based on the satisfaction of fundamental human needs, but also on the “Equitable Access” to community capitals, to the “Sustainability” of the systems that provide us with sources of satisfaction (say, biocultural diversity), Autonomy to decide for ourselves the destiny of our lives, and Security from present and future uncertainties and dangers.

Seeds and languages are “community capitals” (the product of work accumulated down the ages), that are sources of our wellbeing. Unfortunately, they can quickly be lost, unless we continue to care for them. So we NEED to care for them.
They are prime examples of “Summatory Community Capitals” where the more we share them, the more we have. That was one of the reasons for MILPA to engage in seed exchanges among small farmers. No one became poorer for sharing seeds. Instead, they all were enriched. (This is a good lesson for those who would promote the privatization of seeds as intellectual property rights!)

Overall, I think that the “development” paradigm needs to give way to something more integral, such as “well-being” that includes areas such as affection, creativity, spirituality, participation, security, identity, understanding, and by all means, subsistence. The multidimensional benefits of biocultural diversity fit in well with a “well-being” paradigm. I think that the “powerful” nations and their communities need to have stories told to them that will make them question their reverence for development, and make them maybe yearn more for well-being, and in this way become allies with our causes.

I know that me, for one, lost the seed of the “Chimbolo” black bean my father cultivated, when he gave me a bag of seed he had produced, and because I was so busy with my “stuff” I didn’t take time to plant them, and when I got to them, the rainy season mould had got to them. It takes just one growing season to lose a seed that has taken millennia to create or co-create through environmental and human selection. So we must really cherish the community capitals that we have inherited from our ancestors, recognize the blood, sweat and tears that have gone into them. We have a great responsibility to continue nurturing the seeds and languages that accompany us, for as we save them today, they may in turn save our lives tomorrow.

Felipe Montoya-Greenbeck is professor of anthropology at the University of Costa Rica. You can reach him at +506-2282-1127, milpa99@gmail.com, or tending his garden.

Addendum: Even though they can be considered as assets and used to satisfy fundamental needs, sometimes community capitals can also turn out to be liabilities. Leadership is a community capital and can be used to advance well being. But contending leaders in a community can cause feuds, block life quality improvements, etc. Natural resources can be assets, but also liabilities if they provoke invasions to take hold of these resources. Infrastructure can be a community asset that improves wellbeing, UNLESS it is privately owned and not accessible to all alike. So, if there is inequitable access to community capitals, this can reduce community wellbeing. If natural capital or natural resources are exploited unsustainably, this can also reduce wellbeing. If community capitals are not under jurisdiction of the community, this lack of autonomy can convert community assets into community liabilities. If access and usufruct of community capitals is uncertain, this can also cause unease, turning what could asets, into liabilities. So, to summarize: community wealth does not automatically translate into community wellbeing. For community wealth to serve to promote community wellbeing, the conditions of equity, sustainability, autonomy and security should first be guaranteed.

Figure 1. Livelihood strategies invest in capitals to satisfy needs. Capitals are the accumulated wealth of communities, the products of invested energy, from which they create the ways and means to satisfy their fundamental needs. The extent to which needs are satisfied determines the well-being of communities. Members of communities work to satisfy needs. Work and activities may be directed simultaneously at investing in community capitals and at extracting goods and services (satisfiers) from community capitals to satisfy needs. Source: Livelihoods, Community Well-Being and Species Conservation. Felipe Montoya, Carlos Drews, WWF.
The **International Network of Emerging Ethnobiologists** was founded in 2010 at the International Society of Ethnobiology (ISE) congress in Tofino, BC, Canada. Our mission is to facilitate networking among graduate students, postdocs and others who are interested in research within Ethnobiology—the scientific study of the complex, multifaceted relationships among peoples, culture, biota, and environments.

INEE presents itself as an excellent opportunity to link local ethnobiological traditions to an overall ethnobiological corpus by exchanging points of view. We aim to contact and forge permanent alliances with other student organizations with 2 goals in mind for 2 reasons: a) bring fresh ideas and local perceptions into future ISE & b) bringing broader academic opportunities to all ethnobiologists by providing them with access to information, access to publication channels, and access to external mentoring.

Regarding the mentors’ program, the following are ways in which we would like students and mentors to get involved:

a) Help on paper writing/external paper review  
b) Career advice  
c) Balancing life and academia  
d) Funding and professional opportunity postings.  
e) Grant proposal writing  
f) General advice  

To get involved, join our e-mail list: EmergingEthnoNetwork-subscribe@yahoogroups.ca  
Or send us an e-mail: isestudentpost@gmail.com

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**Mamihlapinatapai**  
(Ma-MI-luh-PEE-na-TAH-pie)  
Yaghan, Tierra del Fuego, South America.  
ENDANGERED LANGUAGE

A meaningful look between two people, expressing mutual unstated feelings  
Literally means “ending up mutually at a loss as to what to do about each other.” This is the unmistakable look of shared understanding.

Today only one native Yaghan speaker remains.

It’s a poignant fact that half the languages spoken on our planet could be extinct by the year 2100. When we lose a language, we lose traditions that connect people to place – and to each other. And the regions where languages are dying are often the same as those where plants and animals are threatened with extinction. Our climate crisis isn’t just an issue of resource and species protection. It’s also about culture, because indigenous traditions and languages carry so much knowledge about how to live lightly on this earth.

The beautiful greeting card described on this page is one in a line of “In a Word” cards created by our Board member Susan Fassberg to foster awareness of the beauty of languages and the tragedy of language extinction (www.connectingdotz.com). The cards celebrate unique words from around the world that have no direct English equivalent, yet express universal sentiments and experiences. Some of these words are from endangered languages spoken spoken by just a few people. Others are from languages that are strong and healthy. All of them speak to our shared humanity.

By creating the “In a Word” line, we’ve initiated a “save the words” campaign. Send these cards, and you not only keep these words in circulation – you support organizations, like Terralingua, that work to preserve traditional environmental knowledge and cultural diversity.
Support Us

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We need your support to continue to work for biocultural diversity!

Where do your donations go? You can choose to support our program work. If you wish, you can earmark your donation for one of the following Terralingua projects:

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- Biocultural Diversity in Policy
- Biocultural Diversity Conservation Web Portal
- Biocultural Diversity Mapping Web Portal
- Eco-cultural Health in the Sierra Tarahumara, Mexico
- Indicators of Biocultural Diversity

Please select the button on the Donate now! page on our website and specify what project you’d like to support.

We also gladly receive support for Terralingua’s general operations. Donations that are not earmarked for a specific project go into our unrestricted funds, thus helping the organization continue the work on Biocultural Diversity Conservation.

For secure online donations, please go to: www.terralingua.org.
Or send us a check to: Terralingua, 217 Baker Road, Salt Spring Island, BC V8K 2N6, Canada

Become a Terralingua Member

Our Membership campaign continues! We are very enthusiastic about the ongoing communication with our network. If you would like to become a Terralingua member, please complete the membership form on our website http://www.terralingua.org/html/member.html or send us an email to members@terralingua.org

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Have you moved or changed emails? Keep us posted!
Send your updates to members@terralingua.org
Next Issue of Langscape
CALL FOR SUBMISSIONS
due October 20, 2010

Highlights from our next issue:

Mbyá culture and biological diversity in the
Atlantic Rainforest in Southeast Brazil
Márcia Gomes de Oliveira and Norbert Suchanek

This project focuses on the Mbyá village of Mamanguá, today the only Mbyá village located inside the Mata Atlântica, far from roads and cities between São Paulo and Rio de Janeiro. Mamanguá is a newly re-occupied site. Years ago, Mbyá Chief Roque Benites had a dream of finding this ancient Mbyá settlement, mentioned by his grandmother. Mamanguá is inside the state-owned nature reserve of Cairuçu, and since 2005 the Mbyá Chief has been trying to get Mamanguá demarcated as indigenous territory. At the moment, there are 2 to 5 Mbyá families living permanently there. But Chief Benites’s dream is to develop Mamanguá into a place where the spiritual leaders of the over 100 Mbyá villages can meet far from the white society, and renew their traditional connection with their sacred environment, their Mata Atlântica. Mamanguá is intended to be the place where the Mbyá can re-establish the inextricable link between their culture and the biological diversity of their traditional land.

VITEK Quick-Step Methods Guide
Stanford Zent

The VITEK assessment quick-step methods guide is a tool to measure and analyze the dynamic states and trends of traditional environmental knowledge (TEK) in your study neighborhood, and compare the results with other communities in which the same method has been applied. The guide breaks down the VITEK (Vitality Index of Traditional Environmental Knowledge) methodology into a simplified format, to make it accessible to a wider range of users.

Conservation in Conversation

By popular demand, we will be hosting a second discussion event on Terralingua’s new web portal- Biocultural Diversity Conservation: a community of practice (www.terralingua.org/bcdconservation). Our first event- Nature and Culture: the true web of life - was attended by over 600 people around the globe.

If you would like to submit an article, story, or artwork for our next issue of Langscape please send your inquiries to ortixia@terralingua.org

"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.” Buckminster Fuller