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From the Editorial Team

Ethnozoology, a sub-discipline of ethnobiology, is the study of the relationships between human cultures and the animals in their environment and how different cultures think about those animals. It includes classification and naming of zoological forms, understanding cultural knowledge and documenting use and management of wild and domestic animals.

In past issues we have included articles about ethnoornithology. This issue of the ISE Newsletter focuses on this interesting sub-discipline, as three ISE members share their research with elephants, triatomines and bees.

Also in this issue are *Research Reports from the Field* on wild edible plants in South India and Ethiopia, the role of ceremonies in preserving biocultural diversity among the Loita Maasai, and reflections on the Bribri and Cabécar peoples in Costa Rica.

We hope you enjoy!

Natasha Duarte, Sarah-Lan Mathez-Stiefel and Leslie Main Johnson

Ethnozoology of Human Elephant Relations

Contributed by Kierin Mackenzie and Dr. Piers Locke

Humans and elephants coevolved in Africa from earlier species. Humans have always lived alongside these amazing beings, and we share much in common with them. Both elephant and human young take a long time to mature. Both share complex social networks. Both communicate in a myriad of ways with fellow species members. Both mourn their dead. As with humans, elephant behaviour varies through time and space via patterns of behaviour taught from generation to generation. As with humans, behaviour also adapts as conditions change, and breaking the flow of information leads to what have been similarly characterized as social problems. Therefore, just like humans, elephant behaviour can be seen as cultural.

Elephants and their kin, the mammoths, have been a successful taxonomic family, covering much of the earth, but their numbers declined as human populations increased, with co-existence in some areas, and extinction in others. We are the main driver pushing them towards extinction. We are wiping them out, generation by generation. Elephant numbers plummeted throughout the 20th century, and although there are success stories, the trend is downwards, as we kill them for their tusks, drive them out of their homes, and fight them for our crops (Choudhury et al. 2008).

It isn't all doom and gloom, however. Over the generations of human-elephant co-existence, there have been many examples of humans and elephants getting along. We appear to have formed direct working relationships with elephants over 5000 years ago in India (Lahiri-Choudhury, 1995) and in order to maintain their numbers for use in warfare, construction, logging and entertainment, we have in the past set aside areas for them, passed laws, and found other ways for giving room to them. Whilst we have tamed elephants, we have never domesticated them (Kurt 2006). Friendly and compliant as they may sometimes be, they always remain wild, and an adult elephant can kill a human easily. We take them captive, but we are ultimately in their care in any working relationship. We need to find ways of living with them, and one way is to document successful relations between them and us. Because of the long history of interaction, and the complexity of engagement, a wide range of techniques have been used to study elephants and humans in the past. From India has emerged the Gajahshastra, a genre of literature of great antiquity concerning knowledge pertaining to the management of elephants dating back to the fifth or sixth century BCE (Sukumar 1994), and with other writings on elephants like the Rig Veda dating

back 4000 years (Radhakrishna and Sinha, 2010). Veterinarians, biologists, ecologists, poets, philosophers, saints, and others have long told stories about elephants, investigated their behaviour and morphology, and speculated on the nature of their being. There are gaps, however. There always are.

A multidisciplinary approach would be fruitful. A new approach to the study of human-primate interactions, shared space, and co-ecologies has blossomed in the field known as ethnoprimatology (Fuentes 2010). We argue that something similar for human-elephant relations is needed, something we call ethnoelephantology. We contend that the perspectives of ethnozoology and ethnoecology, applied to elephants, can not only bring clarity to the manifold ways in which humans interact with elephants and make them meaningful, but also make a positive contribution to elephant conservation and elephant welfare.

Ethnoecology can be seen as "…concerned with the interaction between knowledge, practice, and production and is oriented toward applied research on conservation and community development" (Martin 2001), and the beginnings of such work from an elephant centric perspective has begun. Ethnozoology, focussing on the interactions between various cultural groups of our species with other non-human animals is a field ripe for further differentiation and cross pollination. Our own research inaugurates this nascent sub-field of ethnoelephantology through ethnographic and historical research into captive elephant management, which can be complemented by incorporating the ecological and cognitive dimensions of the human-elephant nexus.

Currently, the documentation of Indigenous knowledge about elephants is inadequate, despite Indigenous peoples being highlighted as making the some of the best mahouts with long and ancient traditions (Lair 1997, Kurt 2006). Traditional territories of Indigenous peoples continue to be the homes of some of the healthiest populations of wild elephants. The range of information that cultures with strong connections with elephants accumulate needs to be brought to the centre of elephant studies.

Piers Locke has been working with elephant handlers in the lowland Tarai of Nepal since 2001. His research has focussed on the history of Nepali captive elephant management (Locke 2008, 2011a), apprenticeship learning, professional identity formation, and the significance of ritual practice and religious belief in the occupational subculture of the elephant stable as an enclaved, total institution (Locke 2007, Hart and Locke 2007, Locke 2011b). His film *Servants of Ganesh* (Dugas and Locke 2010), is a portrait of the lives of humans and elephants and the practice of training juveniles at the Khorsor stable in the Chitwan National Park. In relation to the developing field of multispecies ethnography (Kirksey and Helmreich 2010), he is currently writing on elephant training at the Khorsor Elephant Breeding Centre as a multispecies rite of passage for both trainer and elephant, and on the fluid and multiple status of elephants as animals, persons, and gods as they articulate with the relational modalities of domination, companionship, and veneration. His most recent field research has investigated the role of foreign NGOs in humane elephant training programmes and in the treatment of elephant tuberculosis. He is currently developing a new project on historical photography and human-elephant relations in South Asia.

Kierin Mackenzie, in turn is at the beginnings of work in Southern India with mahouts in government camps where the practitioners are largely Adivasi. He is working out fieldwork plans for documenting the knowledge, practices and belief systems of traditional elephant experts at these camps, who are known for their expertise with captive elephants and who come from a cultural milieu familiar with wild elephants and the landscape they live in. His previous work documenting traditional land use of First Nations in Canada has led him to an approach that will place some emphasis on the spatial and temporal dynamics of this knowledge, in an effort to add depth to other elephant studies in the area. For this he plans to apply the Use and Occupancy methodology as outlined by Tobias (2000, 2009). Such an approach for gathering detailed traditional knowledge of a single species has been shown to be effective

before in the work of Ferguson et al. (2012).

The constituents for an ethnoelephantology are already present. Raman Sukumar has focussed on the history of elephant human relations with his book “The Story of Asia's Elephants” (2011), and has spent years analysing human-elephant conflict, and Asian Elephant ecology. Jamie Lorimer has looked at the biogeography of human-elephant relations. Surendra Varma has looked at the welfare of elephants and the correlations with different methods of care. Richard Lair called for the need for more social scientists to study the skills and knowledge of indigenous mahouts throughout their range (1997). These are but a few of the researchers currently working in this area.

In order to make sure that elephants get a fair chance of making it to the 22nd century, understanding the interrelations between humans and elephants is critical. In order to provide the respect and quality of life our fellow beings deserve requires that we take the utmost pains in finding out under what conditions elephants are healthiest, and how best humans can facilitate the maintenance of these conditions.

What works in one area may not work in another, but we have an ethical obligation to both humans and elephants to find ways of creating and maintaining spaces where both species can thrive, and where interactions are more beneficial than detrimental. We argue that a multidisciplinary approach through the formulation of an ethnoelephantology can be an effective strategy to document previously workable solutions, and to thereby make recommendations for adaptive forms of human-elephant interactions in the future.

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Ethnobiological studies about triatomines (Hemiptera, Reduviidae), vectors of Chagas disease in Bahia State, northeastern Brazil

Submitted by Eraldo Medeiros Costa Neto* and Rodrigo Gurgel Gonçalves[1]

The American trypanosomiasis, or Chagas disease, is an endemic zoonosis in the Americas and its etiologic agent is the haemoflagellate parasite *Trypanosoma cruzi*, which is transmitted by feces of blood-sucking insects of the subfamily Triatominae (Hemiptera, Reduviidae). The total prevalence of Chagas disease was reduced from >16 million to 8 million people, estimated in 2005 (Rassi Júnior et al., 2010), and numbers of deaths were also reduced drastically (Moncayo and Silveira, 2009).

In 2006, the Intergovernmental Initiative of Southern Cone, OMS, certified Brazil as free of vectorial transmission by *Triatoma infestans* (Schofield at al., 2006; Silveira and Dias, 2011). In Brazil, the current estimate is that 1.9 million people are infected (Rassi Júnior et al., 2010), much lower than the 6 million estimated in the 1980s (WHO 2002). Nevertheless, acute disease human cases caused by vectorial transmission are still being registered and triatomines continue infesting homes in different states of Brazil (Gurgel-Gonçalves et al. 2012).

There are few available studies about local perceptions concerning Chagas disease in Brazil. Studies on popular representation of this disease and about triatomines in Mambaí-GO (Bizerra et al., 1981; Silveira et al. 2009), Posse-GO (Willians-Blangero et al., 1999) and Federal District (Maeda and Gurgel-Gonçalves 2012) showed that the majority of the population had a high degree of knowledge on the subject. In a study conducted in Guatemala, on the other hand, 11% of the seropositive did not recognize both the signs and symptoms of Chagas disease (Nix et al., 1995). These authors suggest that the success or failure of the control of this disease in the Americas depends on the participation of the local population in detecting the vectors (blood-sucking bugs) and notify government authorities responsible for the

application of insecticides.

These cultural representations on Chagas disease and its vectors may have a significant impact on the effectiveness of interventions, since local beliefs about the cause of the disease should be evaluated to determine whether education programs in public health are effective to ensure a better form of control. A recent review indicates that an entomological surveillance system based on community participation requires specific actions for communication and education in long-term health (Abad-Franch et al., 2011). Actions designed for individuals seeking health promotion should be directed to their habits, behaviors and social practices. The process of detecting triatomines with the participation of the population means continued vigilance, compared to routine activities performed by field staff from the Health Ministry (Falavigna-Guilherme et al., 2002). For this reason, this project aimed at recording the perception of residents of different localities in Bahia State, Brazil, on the identification, biology, and control of insects, and also how they view Chagas disease.

Methodology

The ethnobiological data were obtained by means of open-ended interviews performed from March 2011 to July 2012 with both men and women from rural areas of 12 municipalities within Bahia States: Alagoinhas, Vitória da Conquista, Feira de Santana, Barra, Ipirá, São Félix, Santo Estevão, Cruz das Almas, Santa Teresinha, Santo Amaro, Conceição do Coité, and Tremedal. A free and informed consent form was read out and made available to those who participated in the study. The aims of the research were explained clearly at the beginning of each interview and those involved were asked whether they would like to participate in the study.

Data were analyzed using the union model. According to this model, all available information on the surveyed subject is to be considered. Controls were done both through consistency checking tests and reply validity tests, which make use of repeated inquiries in synchronic and diachronic conditions, respectively. The former occurred when the same question was put to different people soon after each other; the latter occurred when the same question was asked to the same person at different times.

All ethnographic material (recordings, transcriptions, field notes and photographs) is stored at the Laboratory of Ethnobiology and Ethnoecology of Universidade Estadual de Feira de Santana, to the attention of the curator of the Ethnozoology Section.

Main Results

Most of the respondents positively recognized the insects shown to them as kinds of triatomines. However, very few knew characteristics related to insect's seasonality, forms of reproduction and feeding. Although the respondents (64%) report that tritomine bugs come from the "bush", few recognized the chicken coops as artificial habitats of triatomine bugs. Most respondents (91%) said that these bugs cause illness and knew some way to prevent home infestation. The practices that were cited when someone sees a bug inside his houses were capturing and sending the insects to surveillance agents (58%), and kill the insect (40%). People generally recognize different types of insects that exhibit similar morphological appearance to triatomines, thus eliminating harmless specimens. Traditional resources (medicinal plants and prayers) are also used in the treatment of their diseases (Costa Neto, 2004).

The results indicate that residents of rural areas of Bahia have a satisfactory knowledge about the identification, prevention methods and practices in relation to the triatomines. However, they do not have an adequate notion of the impact of Chagas disease to their lives. Health education programs emphasizing this zoonosis could further encourage population to prevent themselves and to control bugs in Bahia.

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[1]Grant by Fundação de Apoio à Pesquisa do Estado da Bahia (FAPESB). The other members of the project are undergraduates Nilmara Saturnino de Souza, Luiz Rodrigo Lima da Motta, and Karine de Cerqueira Silva Oliveira.

The Sentimiel Initiative: Linking traditional ecological knowledge on honey harvesting and beekeeping in a changing world

Contributed by Edmond Dounias - UMR5175 Center for Functional and Evolutionary Ecology, France

Funded by the French Foundation for Biodiversity Research (Fondation pour la Recherche sur la

Biodiversité, FRB: http://www.fondationbiodiversite.fr), Sentimiel — a play of word with 'sentinel', 'miel' being the French term for 'honey' — is a citizen science operation with the twin aims of i) constructing a network of cooperative initiatives around traditional beekeeping and honey harvesting at the international level and ii) ensuring, via this network, the monitoring of effects of global changes, viewed through the prism of their impact on bees and on their production of honey and associated products. The fundamental challenge of the Sentimiel initiative is to valorize traditional ecological knowledge tied to beekeeping and honey collecting (including the 'hunting' of honey of wild bees) through a network that federates diverse local actors who possess empirical knowledge about bees and their productions and who, by their regular observation of the activity of these insects, can monitor the impact of global change on their local environment.

The functions that bees can play as sentinels of the environment no longer need to be demonstrated. Bees alert us to a multitude of changes in our environment, most of these changes being of human origin, particularly when these changes operate below threshold levels that are not directly perceptible by humans: bees often warn us about changes we ourselves may not see. Nevertheless, analysis of the information delivered by bees has so far been focused on the domestic honeybee in the context of professional or semi-professional beekeeping. Knowledge based on subsistence honey collecting, which concerns an incredible diversity of honey-producing bees, has so far been ignored. Sentimiel's ambition is to gain international recognition for this widespread but neglected knowledge, and to give those who hold it the means to obtain funding from sources which would otherwise be inaccessible to them. Making this knowledge more visible would permit, on the one hand, ending the isolation of cooperative initiatives that have decided to adhere to the project.

The prospective objective of the project is to increase our understanding of the consequences of global change for the world's biodiversity by constituting an international citizen-science network, building a common base of very precise and very localized empirical observations by knowledgeable actors. All those with a passion for the world of bees can thus join together in a collaborative action that valorizes their knowledge and contributions, at the international level, to management practices that are more respectful of nature. In addition, this network longs for facilitating access to funding by large international agencies that may finance participatory research-action projects targeting problems or issues raised locally by members of the network. Funding might also be attracted in support of initiatives to preserve local cultural heritage endangered by globalization. Because the incidence of climate change in tropical forests is subtle and only slightly perceptible, the Sentimiel initiative investigates deeper into local perceptions, along the tight frontier between 'feelings' and 'objective observation'. In the new context of climate change, the capacity of local communities to anticipate on erratic fluctuations of seasons is vital for their livelihoods.

The research focuses on biotemporal signals that are determining events upon which forest dwellers have acquired the capacity to anticipate on climate fluctuations, to organize the calendar of their activities and to take their decisions to invest in some activities and not in others (Dounias 2011). Biotemporal signals are from different kinds: visual, sonorous, olfactory, tactile… Since signals never occur in isolation, forest peoples use a beam of converging signals. This combination of determining events mitigates the risks of misinterpretation. Among the different types of biotemporal signals, insects — and more significantly bees — are probably the most accurate and the most fascinating. Insects are sensitive to very subtle fluctuations of climatic conditions not perceptible to humans. Such indicators of changes in seasons are completely neglected by formal land managers or, at best, simply considered as 'folklore' and informative only to anthropologists.

Even if local interpretations of such signals often refer to mystic and symbolic considerations or invoke supernatural forces, the basic ecological observations of the expert eyes of local communities remains a

fundamental source of information for biologists. The Sentimiel initiative advocates in favor of a greater involvement of local communities into the process of assessing the poorly visible impact of climate change on tropical forests. Through their extensive traditional ecological knowledge and know-how, local communities could play a determining role as sentinels by providing first-hand and accurate observations and supplying databases that dramatically fail at incorporating anthropological data into the elaboration of predictive models on climate change (Salick and Byg 2007).

On the margins of the 13th edition of the ISE Congress (20-25 May 2012 in Montpellier, France), the Sentimiel initiative held a two-day 'by invitation only' pre-congress workshop. This workshop was hosted in the Darwin's house located at the Montpellier zoo, and included a fieldtrip in the Cévennes National Park. The goal of this workshop was to initiate a dialogue between researchers in ethnobiology, traditional beekeepers and honey hunters, and representatives of NGOs. 32 participants attended the workshop, including 13 beekeepers from Cameroon, Mozambique, Morocco, Indonesia, Colombia, two regions of India, and three regions of France.

Each beekeeper participating in the workshop actively contributed to the development of 5 thematic discussions. Each discussion was organized as a round table, and the workshop was concluded by a debate on the dynamics and future of traditional beekeeping. Thematic discussions focussed successively on i) individual experience of beekeeping or honey harvesting practices, ii) detailed descriptions of the biocultural context, iii) perceived emerging threats, iv) adaptive responses to these threats, and v) intergenerational transmission processes.

Besides building on an open access database online, the network will go on expanding, taking advantage of various major events to come like the 10th Conference on Hunting and Gathering Societies (Liverpool, UK, June 2013) and the 43rd International Apimondia Congress (Kiev, Ukrainia, September 2013).

Further readings

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Research Reports from the Field

Present scenario of user knowledge and availability of Wild Edible Plants in Male Mahadehswara Hills, South India

Contributed by Harisha Ranganahalli Puttahariyappa

I have been chronicling the use of Wild Edible Plants (WEPs) species in the Male Mahadeshwara (MM) Hills Reserve Forest region since 2009. The motivation for this study came through interactions with the community, which time and again returned to the subject of disappearing useful species. MM Hills communities, being in a reserve forest area, have always had access to forest land. This too was useful in ATREE's (Ashoka Trust for Research in Ecology and the Environment) continuing perusal of the role of forests in the lives and livelihoods of forest dwelling communities. I tried to contextualize what this

resource of wild edible plants (WEPS) means for poor rural households of the Soliga and Lingayat communities. How the knowledge concerning WEPs availability, seasonality, phenology, use and recipes is now part of traditional knowledge. And also how agriculture intensification and economic development are undermining the importance of wild edible plants in food culture and nutritional security of these communities. Research shows that while WEPs do not bridge the existing gaps in nutrition, without them, this gap would be much wider.

An inventory of WEPs that these communities have traditionally used lists a diverse 92 wild plant species, belonging to 68 genera, spread across 38 families. These include leaves, fruits and tubers. Plants from the Amaranthus, Cleome, Solanum and Dioscoria genera: annesoppu (*Celosia argentea L.*), *kaddisoppu* (*Jasminum pubescens* Willd.), *sundekai* (Solanum species), *sodlihannu* (*Scutia myrtina*(N. Burman) Kurz, J.), *murkihannu* (*Buchanania lanzan* Sprengel, J.) and *noregenasu* (*Dioscorea pentaphylla* L.) are particularly popular.

These plants are collected from surrounding areas of natural forest, farm lands (where farmers often classify these plants as weeds), fallow lands, grazing lands, roadsides and backyards. A household typically uses 12 to 130 kg of wild plants in its diet per annum, using as many as 25 species collected from the wild per household (Harisha et al 2011). Grazers, away from home for the entire day, used to live off the land, on WEPs only.

Key findings are:

1. Less intensively cultivated areas harbor more WEP species; usage of wild edibles is also higher in such areas.

2. Certain wild species are more preferred than others. Households switch to other species in times of species scarcity. Collection behavior favors proximate availability: species found closer are preferred. The continued consumption of WEPs food that are not particularly palatable and that are used primarily as drought foods may also have important implications for availability.

3. The relative importance of WEPs species was higher for poorer households than richer one. The poorer the family, the greater the dependency (unpublished data).

4. More WEPs are consumed in times of agriculture production decline.

5. Knowledge regarding use of WEPs is decided usually by gender, age or social role.

6. Both communities reported a decline in the use of WEPs. The reasons vary:

· Reliance on store-bought foods and a moving away from land-based livelihoods (like grazing, farming etc.). School education has replaced traditional apprenticeships, displacing knowledge about indigenous food plants. 80% of younger generation are migrating to cities and neighboring states in search of jobs. Knowledge of WEPs is confined to elders (above 35 years of age); especially women who have been residents of forest fringe areas throughout their lives.

· Post Veerapan, the forest brigand who terrorized the region, women's earnings from NTFP sales (e.g. firewood) have increased, NTFP collection itself is now driven by an established local market, women and men receive equal wage in the Rural Employment Guarantee Scheme. So women are now spending fewer hours cooking or gathering wild plants, and choose to invest time and effort in economically rewarding activities instead of subsistence level activities. A well-established public distribution system has also provided an alternative buffer against loss in nutrition and food security.

· Changes in agricultural and land use policy, infrastructure development and better access to markets has been a driver of land use change in this region. Shift to market driven commercial crops (maize,

tapioca, sunflower, etc.) has significantly affected wild edible plants' diversity, availability and use.

· In addition, natural forest, grazing land, fallows and roadsides, which were a rich source of wild edible plants, are now filled with invasive such as Lantana (*Lantana camara* L.) and Eupatorium (*Chromolaena odoratum* L.) Lantana cover is very high in natural forest and fallow land— 60% and 58% respectively— when compared to other land use categories (Aravind et al 2010).

A resource mapping exercise with Soliga and Lingayaths participants revealed that in the course of a decade, more than a dozen collection locations have been abandoned due to inaccessibility and loss of wild edible plants in these locations. Research studies reveal that allopathic property of Lantana impact growth of native plants.

7. One hedging mechanism to preserve dietary diversity has been in the form of attempts to transplant select wild species that are disappearing, particularly perennial shrubs and climber species, despite issues regarding water availability.

WEPs play an important role during droughts and food shortages for rural agricultural households. Such plants are innately resistant and adaptive to micro climatic change such as low rainfall, high temperature etc., especially in comparison to introduce or exotic plant species. This has been proven in several ecology, conservation and restoration studies. However since wild plants fulfill a subsistence need and occupy fallow lands and forests, both of which are open accessed and poorly managed (except farm lands), these wild plants are underestimated and not captured in national economic assessments.

WEPs use is more like a living link with the surrounding habitat and a keystone of culture, but not just food and income. Therefore, the decline of traditional ways of life and decreased use of WEPs are interlinked. This is vital when we talk about households that work in near- subsistence circumstances.

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Wild edible plants in Ethiopia: a review on their potential to combat food insecurity

Contributed by Ermias Lulekal[1]; Co-authors: Zemede Asfaw[2], Ensermu Kelbessa[2], Patrick Van Damme[1,3]

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This work reviews literature on ethnobotanical knowledge of wild edible plants and their potential role in combating food insecurity in Ethiopia. Information on a total of 413 wild edible plants belonging to 224 genera and 77 families was compiled in this review. Shrubs represented 31% of species followed by trees (30%), herbs (29%) and climbers (9%). Families Fabaceae (35 species), Tiliaceae (20) and Capparidaceae (19) were found to be represented by the highest number of edible species. About 56% (233) of species have edibility reports from more than one community in Ethiopia.

Fruits were reported as the commonly utilized edible part in 51% of species. It was found that studies on wild edible plants of Ethiopia cover only about 5% of the country's districts which indicates the need for more ethnobotanical research addressing all districts. Although there have been some attempts to conduct nutritional analyses of wild edible plants, available results were found to be insignificant when compared to the wild edible plant wealth of the country.

Results also show that wild edible plants of Ethiopia are used as supplementary, seasonal or survival food sources in many cultural groups, and hence play a role in combating food insecurity. The presence of anthropogenic and environmental factors affecting the wild plant wealth of the country calls for immediate action so as to effectively document, produce a development plan and utilize the plants.

Read the full paper here.

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The role of ceremonies in preserving cultural diversity and conserving biodiversity for sustainable livelihoods

Contributed by Henri ole Saitabau

Exploring cultural diversity and related indigenous knowledge among the Loita Maasai community: Emanyatta oo Lorikan

Cultural diversity is an ethnobiological aspect enshrined within the indigenous knowledge systems. Such systems have remained impeccable in practice and have ensured ***preservation of culture*** and community distinctiveness among the Loita Maasai, factors they share in common with other indigenous community around the world. The Loita Maasai regard their culture and traditions with high esteem and respect and value their indigenous knowledge, kinship and way of life. Indigenous knowledge systems play a significant role in enhancing community values, forming a benchmark for cultural diversity and biodiversity conservation at local level. It is these systems that intertwine indigenous societies with the promotion of mutually beneficial interaction between humans and their environment.

The Loita Maasai have unique ways of interacting with their environment which create considerable possibilities for consistently transmitting their culture and indigenous knowledge systems over generations. These practices reinforce the concept that the earth itself is a living being, in need of protection from the sometimes negatively impacts that "modernization" has on human survival and the health of the environment. Indigenous people realize that the true meaning of life is living through a sacred relationship with nature. Only by respecting and nurturing their relationship with the diversity found in nature can communities promote harmony and good health to both humans and their natural environment.

Various research activities carried out among Maasai communities reveal that the Loita Maasai are more traditional in lifestyle than many other Maasai sub-tribes. Despite pressure from external influences to this relationship, Loita Maasai communities strive to maintain their practices, preserving their cultural heritage through traditional ceremonies and are, in fact, often considered aggressive in their commitment to preserve their ways of life. Their customs are characterized by specific social organization and cyclical ceremonial patterns that begin at child birth and continue to old age, ensuring consistency and observance of their fundamental processes. Each ceremonial event has a specified time within which it must be undertaken, with distinct characteristics, target age groups and with clear leadership from within their social organization.

This paper explores one among the highly valued cultural ceremonies, the *Emanyatta oo Lorikan* during which the junior elders becomes members of the senior elder group and gain capacity to participate and

lead customary activities in the community. This documentation will be vital information for their posterity and creates a base from which the plight of the Loita Maasai and other indigenous populations can be used to entrench their rights and dignity as valued practices, deserving of recognition and respect from civil societies and governments.

Read the full paper here.

A Note on the Bribri and Cabécar Peoples

Contributed by Ali Garcia; Abstract in English by ISE Student Representative, Olivia Sylvester

Written by Bribri scholar Alí García, this note in Spanish provides a background on the history and the current situation of the Bribri and Cabécar peoples in Talamanca, Costa Rica. He explains how the cultural identity of Indigenous peoples is linked to their autonomy and how the Bribri and Cabécar peoples face multiple challenges when attempting to achieve this autonomy; one example is the failure of state institutions to recognize Indigeous peoples' rights and perspectives. In addition, Alí García summarizes

1) Bribri and Cabécar traditional medicine,

2) Indigenous land-use,

3) obstacles to achieving recognition for traditional doctors, and

4) problems accessing state-provided medical services.

Read the full article in Spanish.

Ethnobiologist's Bookshelf

The Living Convention on Biocultural Diversity

Contributed by Harry Jonas and Holly Shrumm

The Living Convention on Biocultural Diversity: A Compendium of Indigenous Peoples' and Local Communities' Rights Relevant to Maintaining the Integrity and Resilience of Territories and other Biocultural Systems contains a comprehensive compilation of international legal provisions organized into categories of rights that support the stewards of biocultural diversity.

The Living Convention is dedicated to all Indigenous peoples and local communities striving to realize the right to self-determination and to maintain the integrity of their territories, areas and ways of life. It is also in memory of Dr. Darrell Addison Posey, one of the founders of the ISE, whose collaborative work on traditional resource rights inspired the methodological approach to this publication.

It is intended to serve as a useful resource for Indigenous Peoples, local communities, NGOs and others who want to reference and use international law at the national and local levels. A first draft of the publication has been completed and we welcome its rigorous peer review.

The Problem

Hard fought UN negotiations are resulting in an ever-increasing amount of international law that is supportive of Indigenous peoples' and local communities' rights to self-determination and, among other things:

· Traditional governance systems and customary laws,

· Knowledge, innovations and practices,

· Education and languages,

· Development,

· Non-removal from lands or territories,

· Governance of territories, lands and natural resources,

· Local agricultural systems,

· Free, prior and informed consent relating to lands, waters and natural resources, and

· Information, decision making and access to justice.

However, these rights are constituted from individual provisions that appear across the full range of international law, including from human rights, cultural, environmental, and agricultural instruments. Community members who want to know what their international right to, for example, respect for their customary laws, will have to consult a number of different international instruments to determine the substance and context of that right.

Local Effects

The diffuse nature of Indigenous peoples' and local communities' rights in international law constitutes an injustice in itself, as it inhibits communities from ascertaining and subsequently asserting those rights. Countries that agree to minimum standards at the international level but do not uphold them at the national and local levels should be held accountable.

Yet the often widespread lack of knowledge about international law by communities and their supporting organisations means that these issues are either not raised at all, or are raised imprecisely and ineffectively. Despite an increasingly number of provisions, the inaccessibility of international law itself further enables the marginalisation, discrimination, evictions, and other forms of abuses of power that Indigenous peoples and local communities continue to face.

Reimagining International Law

While we cannot at this stage change the deep structure of the international legal framework, we can *reimagine* the organisation of those laws and the relationships between provisions that address similar issues, albeit in different ways and in separate international instruments. Developing a new reading of the current legal landscape fundamentally changes our perceptions of the law and opens up new legal and political possibilities.

The Living Convention on Biocultural Diversity

A review of the full spectrum of relevant international law was undertaken, and the relevant provisions were reordered under a number of core rights, including self-determination, land tenure, non-removal from land, custodianship, customary uses of natural resources, control of traditional knowledge, and free, prior and informed consent. A community wanting to know about the right to customary uses of natural resources, for example, can now find all of the provisions that exist in international law – including from human rights, environmental, cultural, and land tenure-related instruments – in one place.

In addition to a published version of the Living Convention, we are developing a website dedicated to providing Indigenous peoples, local communities and other interested parties a range of resources for better using international law and supportive jurisprudence for constructive engagement at the local level. It will consist of an online and interactive version of the Living Convention, with links to every

relevant international instrument. It will also contain a range of other relevant resources such as lists of which countries have ratified each international instruments, landmark regional and national judgments, declarations of Indigenous peoples and local communities, and legal empowerment methodologies and tools to enable the realisation of Indigenous peoples' and local communities' rights in practice.

Looking Ahead

The Living Convention seeks to begin to address the injustice of the complexity and inaccessibility of international law. Simplifying and demystifying the otherwise important rights contained in international law will better position Indigenous peoples and local communities to understand and use them. Legal empowerment will lead to social and environmental justice.

In the long term, the Living Convention constitutes one part of a broader effort to highlight the fact that the fragmented way in which laws are currently being developed (i.e. separate laws for land, wildlife, traditional knowledge, etc.) is further damaging the integrity and resilience of social-ecological landscapes. The Living Convention constitutes a new reading of the legal landscape – one that sets us on a new course of law-making and lawyering.

The Living Convention on Biocultural Diversity is available for download.

About the ISE

The International Society of Ethnobiology (ISE) **is a global network of individuals and organizations working to preserve vital links between human societies and the natural world. For over two decades we have brought together people interested in preserving the planet's biocultural diversity by providing a unique platform for meaningful and respectful dialogue. The ISE community includes researchers, academics, students, lawyers, policy makers, community leaders and others who come together to share their diverse perspectives on the fields of ethnobiology, biocultural diversity, conservation, resilience, resource rights and applied ethics.**

As a (USA) 501(c)3 scientific and educational association we rely on your support **to remain a thriving resource for biocultural diversity.**

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