

The Latin American Studies Book Series

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Aylen Capparelli  
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# Nature(s) in Construction

Ethnobiology in the Confluence  
of Actors, Territories and Disciplines

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# About This Book

This book provides the state of the art of Ethnobiology in Argentina and related Latin American countries, highlighting the current topics of discussion at present as it compiles synthesis studies resulting from the *III Jornadas Argentinas de Etnobiología y Sociedad* (III JAES - 3rd Argentinian Meeting of Ethnobiology and Society, La Plata, 2021). Being a relatively young academic development, Ethnobiology is approached from different points of view, such as biology, anthropology, geography, history, linguistic, among others, and fortunately in recent times from the local vision. Consequently, in the seven parts of this book, we try to put together the 33 contributions of 86 authors of different orientations and disciplines but all of them related to the interrelationships between people(s) and natural environment. Current topics related to biocultural relationships and their historical construction along time, conservation of biocultural and agrodiversity, ethnomycology, ethnophycology and meliponiculture are discussed, between other relevant subjects. The main goal is to propitiate the preservation of biocultural diversity by means of the application of ethnobiological wisdom in a global context with an accelerated loose of traditional knowledge. We hope to transcend the dichotomy nature/culture, frequent in both common sense as in disciplinary developments leading to a harsh separation of social and natural sciences. We also emphasize the inextricable relationship of communities and their environment acting jointly in the construction of the inhabited landscape and local identity as well as the indispensable interaction of different disciplines to their approach.

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**Part I**  
**Biocultural Diversity and Its Construction**  
**in Latin America**

# Introduction: A Review of the State of the Art of Ethnobiology in Argentina and Related Latin American Countries



Maria Lelia Pochettino , Aylen Capparelli , Pablo C. Stampella , and Diego Andreoni 

## Why a New Book on Ethnobiology?

Unfortunately, the nature-culture dichotomy is still present in the agendas of environmental managers and even in many research projects. We understand that in a changing and threatened world, multivocality is indispensable. In this sense, ethnobiology, by addressing multidimensionally (time, space, culture) the relationships between human communities and their environment, makes the voice of local actors heard.

Ethnobiology emerges as a reference approach for the research on the nature-culture relationship, from its development and constitution as a field of study. Although it began as an empirical and descriptive interdisciplinary undertaking, it has been evolving and modifying its perspective. The definition currently adopted by the International Society for Ethnobiology is “the scientific study of the dynamic relationships between humans, biota and environment” ([www.ethnobiology.org](http://www.ethnobiology.org)).

The changes in this type of study have been summarized by Hunn (2007) in four temporal phases. Phase I was characterized by its utilitarian approach, and even if descriptions of plants, animals, and their uses had always accompanied the writings of travellers, at the end of the nineteenth century, within the framework of the

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development of ethnographic research, ethnobotany and ethnozoology became formal fields of study (Ford 1978). Phase II developed during the sixties of the twentieth century under the influence of cognitive anthropology: it thus became part of the ethnosciences and is fundamentally an anthropological discipline (Crivos 2010). In phase III, ethnobiology became interested in the integration of wisdom and practices (Toledo 2002), emphasizing the ecological consequences of the application of this knowledge, and in phase IV it incorporated a concern for the ethics of research, recognizing years of appropriation of traditional knowledge by other actors and promoting the rights of the true owners, the local communities (Posey 1999). More recently, a fifth phase was added by Wyndham et al. (2011) who place contemporary ethnobiology in the context of the global environmental crisis and point out that native knowledge promotes local solutions to the needs of a world undergoing rapid ecological change and changing economic policies, promoting biocultural conservation.

Although this synthesis practically describes the development of ethnobiology worldwide, it derives mainly from the North American tradition. In the European tradition, particularly in France, the *Laboratoire d'Ethnobotanique du Muséum National d'Histoire Naturelle* (Ethnobotanical Laboratory of the National Natural History Museum of Paris) was consolidated in the early 1960s, under the direction of Roland Portères. This researcher established a particularly original project, which subsumed ethnobotany as part of the broader framework of the human sciences (Portères 1966). This hidden tradition is approached in the chapter of Bartl (chapter “[Socio-Anthropological Holism and the Origins of French Ethnobotany](#)”) and their relationships with Argentinian tradition are analyzed.

In Argentina, ethnobiology as a discipline/interdiscipline is relatively recent, as a result of different paths taken by the working groups, often linked to the institutions that housed them. On the one hand, the contributions of archaeologists interested in the animal and plant remains present in their excavations were central, resulting in the establishment of archaeobotany and zooarchaeology as a specialized branch since the 1970s (Capparelli et al. 2007). This interest reverted to—or was a consequence of—research on plant utility (mainly) by botanists and agronomists. Toward 1960, on the other hand, in line with the developments of the two traditions already described, the first research that can be called ethnobotanical began with the studies of Martínez Crovetto (1964). From then on, as already mentioned, there was a continuous increase and a notorious diversification in research groups, topics, and strategies (Arenas and Martínez 2012).

As a consequence of these trajectories, ethnobiological studies in Argentina were inserted in different scientific meetings and only in 2017 it was established for the first time a space for discussion with the realization of the I Jornadas Argentinas de Etnobiología y Sociedad (First Argentine Conference on Ethnobiology and Society). This book is the result of the presentations and discussions held in the third edition of this Conference, developed virtually in November 2021. This meeting was held under the slogan “Nature/s under construction: at the confluence of territories, actors and disciplines” hoping to transcend the nature/culture dichotomy that has soaked both the common sense and the disciplinary developments reaching the

supposed sharp separation of social and natural sciences. It also sought to highlight the inextricable relationship between communities and environments in the construction of the inhabited landscape and local identity and also the indispensable interaction of disciplines for its approach.

In this temporal development of ethnobiology, the two main objectives of this approach were delineated: the interrelationship between human societies and their environment, and local knowledge about that environment and its influence on communities' practices.

Since the end of the twentieth century, a new perspective on the culture/nature links has emerged, with the understanding that there is a dialectical relationship between biological diversity and cultural diversity. Thus, the term biocultural diversity has been coined (Maffi 2001), a concept that refers to the "diversity of life in all its manifestations—biological, cultural, and linguistic—which are interrelated within a complex socio-ecological adaptive system" (Maffi 2005).

The other central concept in ethnobiology refers to local knowledge about the environment. Throughout the construction of this scientific branch, different approaches and terms have been used, being traditional ecological knowledge (TEK) (Berkes 1993) as one of the most widely used. Later, the idea of traditional with its connotation of temporary was replaced by the idea of local in its sense of situated (Nazarea 1999). This knowledge has been studied by ethnobiologists both from a formal (Berlin et al. 1974) or utilitarian (Ellen 1993) point of view, but in recent years, these studies have focused mainly on processes and transformations, pointing out that local knowledge is not only intrinsically dynamic and situated but also often depends on external factors that generate opportunities or constraints (Nazarea 2006).

## **Central Concepts and Topics of the Book**

The central concepts and topics mentioned above are reflected in this book which is organized in seven parts as follows:

### ***Part I: Biocultural Diversity and Its Construction in Latin America***

Apart from this, Introduction discussed the biocultural diversity, the social actors, and the environmental knowledge they possess, which are responsible for the aforementioned construction of the inhabited spaces. Domestication, in its sense of making part of the house, or even building it, has been a central concept in our perspective. Originally thought of as a concept applicable to genetic changes produced in a species (Harlan 1992), the concept was broadened in the sense of incorporating into

human life not only the elements of the environment but the environment itself (Casas and Parra 2016). Consequently, the second chapter of this section deals with domestication as a first step in nature construction. Casas et al. (chapter “[Domestication of Species and Landscapes in Mesoamerica](#)”) analyze how domestication, at both species and ecosystems levels, have been interconnected in Mesoamerica and how such interactions influence the construction of biocultural diversity. This achievement is based on local knowledge and practices generally developed by people within household scope. In recent times the subject “family farming” has been intensively and extensively approached by ethnobiology. According to FAO, family farming is “a means of organizing agricultural, forestry, fisheries, pastoral and aquaculture production which is managed and operated by a family and predominantly reliant on family capital and labor, including both women’s and men’s. The family and the farm are linked, co-evolve and combine economic, environmental, social and cultural functions” (FAO 2018). In this sense, Emperaire (chapter “[The Immateriality of Cultivated Plants in the Context of Rio Negro Region \(Brazilian Amazon\)](#)”) explores the intangible extensions of agrobiodiversity, recognizing that the existence of this diversity is anchored in a multidimensional space and that this intangibility is just as central and relevant as its tangible biological reality. In turn, Katz (chapter “[Local Knowledge, Food, Territory, and Biodiversity: Case Studies from Mexico and Brazil](#)”) reflects on the relationship between local knowledge, food, territory, and biodiversity. By considering case studies from Mexico and Brazil, she demonstrates that indigenous people’s agricultural and food systems are highly efficient and are related to a higher biodiversity in indigenous territories. On the other hand, Flores and Lantos (chapter “[Food Sovereignty: Shared Knowledge and Experiences in Argentine Ethnobiology and Archaeology](#)”) review the different fields in which food related topics were afforded by ethnobiologists and archaeologist and remark their contribution to build up policies of food sovereignty and Good Living. Considering that medical practices are closely related to subsistence, Anconatani et al. (chapter “[Criollos from the “Chaco Húmedo Formoseño”: Some Aspects of Their Ethnomedicine](#)”) present ethnomedical and ethnobotanical information collected from the “Criollos” of the eastern province of Formosa (Argentina) as well as their various etiological and therapeutic conceptions of these diseases. The symbolic aspects underlying the construction of biocultural diversity are also considered in a preponderant place. Trees and forest landscapes in general are highly valued in our country. Maferra and Amuedo (chapter “[Trees in the Conformation of Relational Landscapes in the North of Mendoza \(Central Western Argentina\) from the Pre-Hispanic Period to the Modern Day](#)”) reassemble the biography of the forest landscape in Western Argentina through the synthesis of archaeobotanical, historical, and ethnographic data, considering the different orders (not only environmental but also political ones) where trees are involved.

## ***Part II: Methodological Approaches to the Study of Biocultural Diversity***

This part attempt to present the diversity of possible approaches to the study of the construction of nature, both from the disciplinary and interdisciplinary perspective but also from the dialogue of different types of knowledge, both local and scientific ones. Bartl and Paolocá (chapter “[Methodological Diversity and Reflexivity in Ethnobiological Research](#)”) present a synthesis of methodological concerns that emerge in research as well as the possible assemblage of approaches, knowledge, and objectives. In this line, and from a review of her own previous works, Ladio (chapter “[Confessional Narrative of Patriarchal Misconceptions in Ethnobiological Studies of Northern Patagonia](#)”) discusses how patriarchal misconception crossed concepts and methods in ethnobiology. Multicultural environments are privileged spaces for ethnobiological research. For this reason, Hurrell and Puentes (chapter “[Urban Ethnobiology: A Space for Reflection on the Relationships Between People and Their Environment in Multicultural Contexts](#)”) reflect on theoretical-methodological aspects of current urban ethnobiology, its specific challenges, and research tools. Situated livelihoods tend to be small-scale, diversified and based on an accumulation of specialized skills. The mastery of multiple survival skills is a resource for resilience in times of uncertainty and change. Teves and Doumecq (chapter “[Studies About Environmental Change and Local Knowledge in Latin America](#)”), by means of case studies in different populations, discuss how ethnobiological studies contribute to developing mitigation strategies, conflict resolution, and public policies in situations of environmental change in Latin America. Consideration of others, permanent dialogue, and the joint construction of knowledge are the ethnobiological strategies par excellence. Thus, while Auge et al. (chapter “[Dialogues with the Community: Knowledge Exchange From Ethnobiology](#)”) present a synthesis of current reflections and discussions in Argentina about the ways of establishing links between the university and nonacademic actors and groups; Pochettino et al. (chapter “[“We are the Seeds”: Formal Teaching of Ethnobiology](#)”) discuss the role that formal and systematic teaching has had and still has in the training of young ethnobiologists committed to the inextricable nature/culture relationship. A little addressed but central aspect in these investigations is the material record of the natural resources documented, as it is shown by Gimenez and Vignale (chapter “[Conservation and Identification of Botanical Materials in Ethnobiological Studies](#)”). As it was mentioned before, Bartl (chapter “[Socio-Anthropological Holism and the Origins of French Ethnobotany](#)”) analyzes how socio-anthropological holism allowed the origin of French ethnobotany, considered as part of the human sciences, and how it relates with the Argentinian ethnobotanical tradition.

### ***Part III: The Ethnobiology as a Theoretical and Practical Turning Point Between Cultural and Biological Conservation: Valorization Tools Linking Tradition and Innovation***

In this section, the book presents different case studies in which ethnobiology acquires a fundamental role as an effective link between academia, managers, and communities. The concepts of tradition and innovation are brought into play, whose diverse conceptions influence conservation actions, and actions are put into practice that seek to interweave environmental conservation with the production of goods and services that are sustainable in the long term and that support the well-being of people and environment. Trillo et al. (chapter “[Contributions of Ethnobotanics to the Use and Conservation of Cactaceae Biocultural Heritage in Northwestern Córdoba: Identity Studies, Agro-diversity, and Conservation of Traditional Practices](#)”) present the results of a cooperation project between the university and the community which allowed on the one hand the establishment of an economic resource for the inhabitants of semi-arid areas of central Argentina and on the other hand the conservation of the cacti involved in the project. García et al. (chapter “[Following the Footsteps of Ethnobiologists in the Andresito Peninsula \*Palmitales\*: Basic and Applied Science as Indissoluble Parts When Local Actors Are Involved](#)”) present a long-term ethnobiological study about the productive development of *Euterpe edulis* (Arecaceae), particularly the path followed and the difficulties overcome in implementing a family-community conservation model based on the use of this plant in northeastern Argentina. In recent years, one of the most promoted resources at a worldwide scale has been stingless bee honey. In their chapter, Geisa et al. (chapter “[Development of Meliponiculture in Argentina, Ethnobiology, and Melissopalynology as Tools for Progress](#)”) discuss the development and status of meliponiculture in Argentina, by studying the cultural importance of native stingless bees to diverse communities.

### ***Part IV: Ethnophycology and Ethnomycology***

This part represents the special place given to algae and fungi in this volume. Even when they have great cultural relevance in many societies around the world, they are not usually the focus of interest and study in the field of ethnobiology, and the information about them is generally immersed in ethnographic, ethnobotanical, or utilitarian studies. In their contribution, Suárez and Arenas (chapter “[Ethnophycology and Ethnomycology: Two Fields of Study with Great Potential](#)”) present the state of the art and reflect on the advances and challenges of both disciplines in the region, in order to identify vacancy areas of greater interest within ethnobiology. To illustrate this perspective, three case studies are developed that reflect situated knowledge in different parts of Latin America. On the one hand, Díaz Pla and Rodríguez Careaga (chapter “[Women Seaweed Gatherers of Queilen \(Chiloé, Chile\)](#)”) analyze

wisdom and practices—and their transmission—displayed by women who collect seaweed and shellfish in Chiloé, as well as global influences on their economy. On the other hand, Ruan Soto et al. (chapter “[Ethnomycology of South-East Mexico](#)”) present and discuss local uses and knowledge about fungi in southeast of Mexico, respectively.

### ***Part V: Historical Ethnobiology and the Meaning of the Living Beings in the Documental Sources***

Here, the contributions seek to address the meanings acquired by living beings in a given historical moment from an ethnographic perspective, considering documentary data as a primary source of information on which the classical ethnobiological method of analysis is applied (Medeiros 2010; Scarpa and Rosso 2014). To start with, Scarpa (chapter “[Research on Historical Ethnobotany Carried Out by the Laboratory of Ethnobotany From the Argentine Museum of Natural History](#)”) presents an overview of the research on this topic carried out during the last decade by the laboratory of *Historical Ethnobotany of the Museo Argentino de Historia Natural* (Argentine Museum of Natural History). The overview includes studies either on Jesuit and Franciscan Missions established in the Southern Cone of South America and on other peasant and indigenous groups of Argentina. Hernández Bermejo (chapter “[Historical Ethnobotanical Documentation by Means of Images](#)”) reflects on the wealth of information hidden in the images in search of agricultural, pharmacological, landscape, and botanical knowledge of the past. Cases of forgotten horticultural species, processes of transfer and dispersion of food and medicinal plants, or the introduction of ornamental species are exemplified. Finally, two case studies are presented, approached from the conceptual framework of historical ethnobotany. Stampella and Pochettino (chapter “[Plant Complexes and the Importance of Context in Historical Ethnobotany Identifications](#)”) analyze the role of the Jesuits in the construction of plant complexes (cotton, *yerba mate*, and pepper) using two documentary sources. They also highlight the diversity of plant species that compose them, their origin and use, and discuss the per durability and/or transience of the mentioned complexes in the historical evolution. On the other hand, Rosso (chapter “[An Approach to Qom Ethnobotany of the Nineteenth Century Based on the Work of Ángel Carranza](#)”) brings an approach to *Qom/toba* (*Guaycurú* linguistic family) ethnobotany of the nineteenth century based on the work of Ángel J. Carranza.

## ***Part VI: Pre- and Post-contact Plant Management: A Temporal Vision About Cultural Elections Related to Plant Modes of Use in Past Conjunctural Contexts***

This section joints a set of integrative papers that synthesizes continuities and changes in plant management strategies on conjunctural times linking pre- and post-European presence in the South Cone of America. Combining archaeobotanical and historical ethnobotany approaches and considering direct past botanical evidence such as carporemaines, wood charcoal, microremains from sediment, residues, and dental tartar, as well as isotopes together with indirect evidences like written documents, this section contributes to the understanding of how these strategies are applied by humans to adapt to conquest and colonies establishment. Within this frame, the work of Lopez et al. (chapter “[Post-Conquest Early Changes in Phyto-cultural Systems from the Analysis of Food: A Synthesis for the Argentine Arid Diagonal with Emphasis on the “\*Gobernación de Tucumán\*”: Governorate of Tucumán](#)”), from the perspective of the studies of plant-human relationships and past food systems, evaluates the trajectory of ingredients and culinary preparations as well as the potential resignification of their cultural meanings. They consider the period from sixteenth to eighteenth centuries on the Arid Argentinian Diagonal, with emphasis on the *Gobernación de Tucumán* (Governorate of Tucuman). On the other hand, Colobig et al. (chapter “[Advances in Archaeobotany of Central-Eastern Argentina: Dynamics in the Use of Plants from the Early Holocene to Colonial Times Through the Analysis of Micro and Macro Plant Remains](#)”) expose and discuss the archaeobotanical record of macro and microremains from Central Eastern Argentina from the early Holocene to colonial times, recording ruptures and continuities in plant production and land management. García Lerena et al.’s (chapter “[The Trees in the Construction of Landscapes in the Argentine Pampean Region: Changes, Continuities, and Resignifications in the “\*Primera Estancia\*” of Magdalena \(Buenos Aires\)](#)”) contribution presents the history of the productive establishment “*Primera Estancia*,” the first of its kind in La Plata river shore, Province of Buenos Aires, from its foundation in the seventeenth century to the present days. It focuses on the role of trees in the socioeconomic transformation and in the construction of the current landscape. On the other hand, Belmar et al. (chapter “[Plant Consumption in the Northern Patagonian Archipelago \(41–47° S, Chile\) Since 6000 Years BP to Historical Times: An Integrative Vision Through Ceramic Use Residues and Human Dental Calculus](#)”) addresses the trajectory of plant resources over time in the northern Patagonian archipelago (Chile), based on the analysis of plant microremains attached to ceramics and dental calculus. The consumption of terrestrial resources—plants and animals—among maritime hunter-gatherer groups was evaluated, and the impact of contact and/or arrival of other cultural groups, such as horticultural societies and Europeans, was assessed.

## ***Part VII: The Archaeofaunas and Their Narratives***

This part presents a series of papers that address different theoretical and methodological proposals related to the study of faunal evidence in archaeological contexts. Borrero et al. (chapter “[Taphonomy and Archaeofaunas: Friends with Benefits?](#)”) bring a synthesis of the development of taphonomy in Argentine archaeology, explore the role of fauna in the discipline’s growth, and discuss their future development directions. Day Pilaría and Del Papa (chapter “[Multiple Approaches for Archaeozoological Studies in Argentina](#)”) present different archaeozoological work experiences from diverse regions of Argentina to show how a multiple approach integrating both inter- and transdisciplinary studies contributes to the interpretation of continuities between past and present in the links humans built with animals. The isotopic contribution to the understanding of zooarchaeology is addressed by Tessone et al. (chapter “[Variations in the Isotopic Niche of South American Camelids: A Vision from Applied Zooarchaeology](#)”), who study the variations in the isotopic niches of South American camelids, their interaction with human populations on a broad spatial and temporal scale and the impact generated by modern socioeconomic activities on the isotopic niches of these camelids. Finally, in his chapter, Nielsen (chapter “[Herders and Llamas, Companion Species in the Southern Andes During the Last Three Millennia](#)”), based on ethnographic and archaeological data from northwestern Argentina, southern Bolivia, and northern Chile, explores the characteristics of the mutual breeding relationship and proposes that pastoralism emergence in the Andes was allowed by the consolidation of a companionship relationship (Haraway 2003) between humans and camelids over more than three millennia.

## **Final Remarks**

The integration of this set of papers shapes a comprehensive panorama of the current knowledge about the multidimensional past and present relationships between humans and their biological and physical environment in Latin America and particularly in Argentina. On the other hand, it displays the multiple theoretical and methodological ways that were involved in the development of these kinds of studies in the subcontinent. And finally, it sets out the important contribution of ethnobiology to afford multidimensional and multivocal perspectives in order to generate approaches that overcome nature-culture dichotomy for future management agendas.

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