

**ALL USEFUL PLANTS HAVE NOT ONLY IDENTITIES, BUT
STORIES: THE MYTHICAL ORIGINS OF THE PEACH PALM
(*BACTRIS GASIPAES* KUNTH) ACCORDING TO THE PERUVIAN
ASHÁNINKA**

Joanna Sosnowska¹, Monika Kujawska^{2,3}

¹ *Władysław Szafer Institute of Botany, Cracow*, ² *Instituto de Biología Subtropical, Misiones, Argentina*, and ³ *University of Adam Mickiewicz in Poznan*

Abstract. In this paper we present a myth about the origins of the peach palm (*Bactris gasipaes* Kunth), recorded during a research project dedicated to landscape domestication and the management of palms by the Asháninka people of Amazonian Peru. This myth is most likely the outcome of cross-fertilization between European Christian and Amerindian traditions during colonial times, but which must have undergone significant changes during the ‘indianization’ process. The myth provides an excellent starting point for discussing Asháninka relationships with non-humans and the environment and ways of transmitting ethnoecological knowledge, as well as the importance of the sharing of food. It is also relevant in explaining the purposes of peach palm domestication by the Asháninka, as well as their knowledge and participation in the dispersal of the palm. We conclude that peach palm utilization is only one facet of the relationship between the *kiri* palm and Asháninka people.

Keywords: *Arecaceae*, landscape domestication, historical memory, traditional ecological knowledge

DOI: 10.3176/tr.2014.2.05

1. Introduction

Similarly to other indigenous non-literate societies, the Asháninka preserve their historical memories through myths and performative actions, such as rituals and ceremonies (Santos-Granero 1998). The mythologies of South American Indians often address the origin of significant social institutions and customs, as well as culturally salient plants (Arenas 1992, Keller 2003, Santos-Granero 2002). Myths about plant origins have important mnemonic value for these societies and

play a relevant role in the transmission of knowledge between generations (Etkin 1994). This kind of knowledge is not gained through direct personal experience, but is part of a legacy handed down from one generation to another. However, myth telling may be personal to some degree, as the same myth may differ from one family to another within the same community; "... myths and rituals reveal larger patterns and connections only imperfectly perceived, yet intuitively glimpsed, by ordinary experience" (Århem 1996: 202). These myths of plant origin may also act as a conveyor of 'writing' history into the landscape by indigenous groups. For these societies, landscape has the potential for encapsulating and transmitting historical memory (Schama 1995, Santos-Granero 1998).

Bactris is one of the largest and spiniest American palm genera with 64 species, which exhibit great morphological diversity (Henderson et al. 1995). *Bactris gasipaes* (peach palm), which is domesticated at population level, may have been one of the staple plants in the Amazon. This inference is based on its degree of domestication (Clement 1988) and its importance to many societies, as seen in their myths, legends and festivities (Patiño 1992).

Recording indigenous plant names and cataloguing uses barely scratch the surface of traditional knowledge (Rival 2009). Documenting how things are named and how the named things are classified is not enough, according to some authors (Kohn 2002, Lenaerts 2006), although it is still of central importance to how people come to know nature (Berlin 1992). When conducting ethnobotanical research it is important not to ignore ecological interactions regarding how 'the natural world works' from an indigenous perspective (Rival 2009), because local people know much more about nature than their classifications reflect (Atran 1999).

Berlin (1992) was interested in the effects of domestication on the evolution of ethnobiological categories. He suggested that the ethnobiological inventories of foragers contained significantly fewer named categories of plants and animals than those of agriculturists (Berlin 1992). Brown (1986) found an explanation linking domestication to the growth of ethnobiological taxonomies. He claimed that exploitation of both domesticated and wild plants and animals by cultivators was far more intensive than that of hunter-gatherers, because population density was much higher among agriculturists, who in case of crop failure, had to be less selective about what was edible than hunter-gatherers (Brown 1986). Balée (1994) adds that there is less need among foragers to know the specific properties, possible uses and morphological traits of a great range of wild and domesticated plants. Berlin even argues for a direct correlation between plant domestication and the growth of ethnobiological taxonomies. According to him, domestication leads to the establishment of new folk-specific taxa. The more humans intervene in the reproduction of plants, the more their ethnobotanical inventory will expand, for both wild and domesticated plants (Berlin 1992). However, ethnobiological studies among Ecuadorean Huaorani foragers support the idea that hunter-gatherers may develop equally-sophisticated classification systems based more on ecological relationships than pure taxonomic ones (Rival 2009).

Relationships between humans and non-humans are not universal structures which exist independently of cultural and historical context. One of the modes of apprehending and classifying the natural world is animism, something characteristic of Amazonian societies (Descola 1996a, b). Animistic beliefs, in short, are based on the inclusion of natural beings in the social sphere (Rival 2009). The animistic system endows non-humans with culture, which means knowledge, agency, ritual and other human attributes (Århem 1996). Within the general framework of animism, Descola distinguishes two basic patterns of relating with nature: reciprocity and predation. In both of these approaches non-humans are considered persons, with whom people share a similar essence and are tied by consanguinity (for domesticated plants) or affinity (for forest plants and animals). Reciprocity is based on “strict equivalence between humans and non-humans sharing the biosphere” (Descola 1996b: 89-91). Humans and non-humans contribute jointly to the sustenance of the cosmic equilibrium. Predation is an inversion of reciprocity and is understood as taking life without offering direct replacement. Within this approach non-humans try to take revenge on people who hunt or overharvest plant resources to excess. There is also a third approach, namely protection, not only confined to animism within our understanding. It prevails in situations in which non-humans depend upon humans for their reproduction and welfare. These non-humans may be domesticated plants, which are closely related to people and hence appear as components of a whole society or kinship. Protection may be reciprocal and utilitarian, as it ensures beneficial returns to people. These benefits may be viewed as a base of subsistence, emotional attachment or a link to a benevolent deity (Descola 1996b: 89-91).

Both Amerindian perspectivism (Viveiros de Castro 1998) and eco-cosmology (Århem 1996) have evolved from animism. These authors highlight the highly transformative nature of Amazonian beliefs reflected in their myths. “(...) human beings, animals and plants are undifferentiated: they belong to the same ontological category of mortal beings. In this inclusive society of mortal beings, one class of beings readily transforms into another: humans become animals, animals transform into humans, and one class of animals turns into another” (Århem 1996: 188). In this highly transformative world of humans, animals, plants and spirits can take on different material shapes and go through different worlds to manifest as different classes of beings (Århem 1996, Viveiros de Castro 1998).

The aim of this article is to describe the importance and figurations of the peach palm in Asháninka culture, and from this base try to understand the processes of domestication of the palm, not only managed by the Asháninka but described by them also. The identity and story of *Bactris gasipaes* (*kiri*, peach palm) is presented in ecological, evolutionary and ethnographic context.

2. Asháninka ethnic group and the study area

The Asháninka ethnic group belongs to the Arawak linguistic family. In the southern Amazonia, in areas historically dominated by Arawak-speakers, several headwater basins show evidence of substantial pre-Columbian landscape modification. Arawak is the most widely distributed language family in the Americas, extending across the lowlands from Argentina to the northern Caribbean (Aikhenvald 1999). The origin of Arawak-speakers was in the north-western Amazonia, but during the second millennium BC they expanded to the north and the Caribbean along the Orinoko and to the south and central Amazonia along the Río Negro (Heckenberger 2002). Arawakan languages continued to spread southward along the Purús and Madeira rivers to the lowlands of Peru and Bolivia where Arawak-speaking groups with their characteristic cultural emphasis on river navigation, trade and agriculture established themselves as middlemen in the trade between the lowlands and the Andean highlands. Historical distributions suggest a tendency for Arawak-speaking peoples to expand along river corridors (Heckenberger 2005). In Amazonia, differences between the bottomlands of major rivers and the uplands were significant factors in distinctive regimes of cultural adaptation (Meggers 1996). Riverine groups were generally larger, more settled, and practiced more intensive resource management strategies than upland areas. In Amazonia, early agriculturalists along major rivers are commonly affiliated with the Arawak family (Hill, Santos-Granero 2002), among which today the Asháninka form the biggest group.

Currently Arawak-speakers are represented in the Peruvian Amazon by: Amuesha (Yánesha), Asháninka, Ashéninka, Caquinte, Culina, Piro (Yine), Nomatsiguenga and Machiguenga (Santos-Granero, Barclay 2005, Hvalkof, Veber 2006). The Asháninka represents 26% of the indigenous population recorded in the Peruvian Amazonia (INEI 2009). Asháninka territory is crossed by many navigable rivers. The river Apurimac merges with the Mantaro and forms the river Ene, which merges with the Perené and forms the Tambo. The river Tambo joins the Urubamba and forms the Ucayali, which leaves the Asháninka territory.

The Savareni Asháninka community, in which the myth of origin of *kiri* palm (*B. gasipaes*) was recorded, is located in the department of Junín, at the oriental foothills of the Andes, at 270 m a.s.l. and the distance to the closest town Atalaya is 57 km as the bird flies and a little longer along the Tambo river (Fig. 1). The 170 inhabitants of Savareni live in 26 family groups (20 families near a lagoon of the Tambo river, 6 settlements at a lower density near the Shicapaja stream). Although the population of the study community seems small by urban standards, the village is in fact much denser than traditional Asháninka settlements, which include an older man and woman, the families of their married daughters and houses and gardens constructed with the help of the sons-in-law. The family settlements were autonomous and staunchly independent, and political and economic integration was loose. The tradition of autonomy and independence among extended family units is still strong, and proves to be a constant source of



Figure 1. Location of Savareni village from the study area in Junín department.

negotiation and conflict in larger, modern communities where families live at closer quarters and are subject to communal obligations like every Friday ‘faena’ – communal work.

Every household in Savareni disposes of at least two separate buildings: a dormitory and a kitchen. Because of the rocky soil around the village most of their fields lie on the more fertile island on the other side of the lagoon. Most Savareni inhabitants maintain secondary homes near their fields at some distance from the main community. On the other hand some families living near the Shicapaja stream built their secondary homes in the village, for their children who study in Savareni primary school.

Asháninka swidden agriculture, like that of other indigenous groups in the Amazon, is characterized by a relatively small area of forest disturbance, multi-cropping, great genetic diversity of crop cultivars and a rapid process of forest regeneration (Posey, Balée 1989). The Asháninkas from the Tambo region use the slash-and-burn method to clear lands, mostly for subsistence agriculture. The most important crops are cassava (*Manihot esculenta* Crantz), corn (*Zea mays* L.), bananas (*Musa paradisiaca* L.), beans (*Phaseolus* sp.) and rice (*Oryza* sp.). Small-scale cacao (*Theobroma cacao* L.) plantations generate additional income. *B. gasipaes*, which is a domesticated palm, playing an important role in Asháninka culture and everyday life, is mainly planted on fields outside the village. Hunting and fishing remain important activities. However, traditional bows and arrows or spears often make way for shotguns and artificial nets.

3. Methods

Studies described in this paper lasted from the year 2008 to 2011, after obtaining a permission to carry out research in Asháninka territory. During this period three expeditions were conducted. Every year, getting more experience in working with Asháninka people and palms, the work techniques were adjusted to the actual circumstances, both at the level of own relationship with the community, and the Asháninka way of life. Although we do not consider ourselves experts on their way of thinking, with every journey we were on more friendly terms, which allowed the research and understanding to evolve. The applied interview method and participant observation, along with recording and translating Asháninka legend of *kiri* palm (*B. gasipaes*) origin, assembled the complete material presented here.

3.1. Ethnobotanical data collecting

Most palm vouchers were collected during the first two-month fieldtrip carried out from October to December 2008, when 7 Asháninka villages along Perené and Tambo rivers were visited. Among the visited communities, Savareni was chosen for more profound studies. The second four-month fieldtrip was carried out from October 2009 to February 2010 in Savareni village.

Free-listing interviews (Alexiades 1996, Martin 2007) were used, for example, to determine each item, that is each folk palm name in the cultural domain, and to calculate their relative cultural salience (Martin 2007). Congregated data from 50 interviews was analysed, considering the order of mention of palm names and specific palm uses, by the use of correspondence analysis (CA) (Ryan et al. 2000). Additionally, direct questions were asked about palm characteristics, extraction methods, habitat, forest types, etc.

Finally, during the third fieldtrip carried out from May to July 2011, 45 interviews were conducted with 33 representatives of all households in Savareni village and 12 Asháninkas from other visited villages in the Tambo river region. Free-listing was used to identify the cultivated palms. Information collected by asking direct questions referred mainly to the motivation of the respondents in cultivating palms on their land, their perception of variation, their preference in palm traits and their management practices.

During the years 2009–2011, interviews concerning different topics were often conducted with the same research participants. The age range of the informants was 18–89 years and the gender distribution was 46 males and 25 females.

The Asháninka myth of *kiri* (*B. gasipaes*) origin was recorded, transcribed and translated from Asháninka to Spanish with the help of an Asháninka interpreter. The Asháninka and Spanish vocabulary employed in this paper is distinguished by the use of a different font: *kiri* – Asháninka from Tambo region, ‘pijuayo’ – Peruvian Spanish.

3.2. Botanical material

Palm vouchers were preliminarily identified in the field according to the “Field guide to the palms of the Americas” (Henderson et al. 1995). In total, 72 vouchers of palms (among them 5 vouchers of *B. gasipaes*) were deposited in KRAM in Poland with duplicates in MHN in Peru; herbarium acronyms as in (Thiers 2010). The nomenclature of palm names, including the authors’ names, was written according to the World Checklist of Palms (Govaerts, Dransfield 2005).

3.3. Ethnographic collection

The ethnographic collection of 56 objects made of palm material or with use of tools made of palm wood, by assent of Central Asháninka del Rio Tambo, was deposited in the S. Udziela Museum of Ethnography in Cracow. The collection, films, photographs, drawings and the recorded myth of *kiri* palm origin were presented during an exhibition “Palms and the Asháninka People” in the Museum of Ethnography (09.08.2013–16.02.2014).

4. The myth – Origin of *kiri* palm

4.1. The myth “*Kenkitsarentsi irashi Abireri*” in Asháninka language

Irori ijaneni ijita icharine Abireri. Ijtakia Irori. Iriyokia iriori – Abireri impojimeka. Osheki ipiantayeti ipiyetiri ashaninka.

Ipiayetiri kenpeyetapajariri janankipe ijayeti yantaiti yoba intsipa. Iñapakerikia yora Irori ikantirikia:

– Chaine, chaine pamene!

Te irakabeteari.

– Pameneribe jipajitari yora?

Yamenapaintatiri ‘fuu’ pinpiaytya tsieri. Yora tsieri kisatsoari ipotsotaro iranane. Irotakekia aytake ikanta. Ipiayetiri atiripe aitake ikanta. Ijati ijati iñapakeri atiri yoba pamaki. Ari ikantiri:

– Chaine, chaine pamene! Jipajitari yora? Pamene!

Ari yamenapainti te inkobabeteaji oshekitake ikishetiri.

Ari mekajatanake iñapatiri kontona itaroshitiro irobane ipiyoyetiro irobane. Arime ikantiri:

– Chaine, chaine pameneri itaroshitiro yora irobane.

Yobankakeri. Ari yamenanake fuu...

– Pimpiaytya kontona.

Jau pianaka.

Aisati ikantiri chonkeki. Maroni ayentayetsiri chonkeki. Ineiri ipiyoyeti inchatonkipe ikarayetiro inchatonkipe.

– Chaine, chaine pamene. Pamenerite.

Irotakeyantayeteri yobantayeteri. Inchatonkipe arimeijatanaji. Okantabajiri iriniro:

- Jaukameka pijaitiri oshikipipiake notomi.
Te noñajeri.
- Chaine, chaine pamene!
- Jaukakia ankanteriri arimeka.
Iyotake Abireri.
- Jaa... oninashiriakenatemi.
Ikantirokia noshintoyte ikantiro oshero jero emo:
- Noishintoite nokoypante piarentsi.
- Ario paba.
Aiti kaniri ora oshero osheki anti piarentsi. Ikantetiri obiare tyontikija kametsaja.
- Arimeka tsame antiyashiterita oshemakari ijateta kirinka.
Arimeka ikiake etini yatiribeitani aisati antyarinaki kintero. Ikiakemeka. Ikanta shinkijeitaka meka:
- Tsame noishintoite abeshirienpari.
- Tsameketi paba, abeshiriempa tsameketi.
Ari okenanake ojate omaninkete. Ari iriori te inkenkeshiriajiaji. Omatakeri piarentsi. Ikantetiro kametsaja. Iro kantaicha ari oshinkitake ikantetiro tyontikija. Arimeka okenanake oshiashiataka obeshiriaka. Okenpetari arori abairate. Okantitapaitari teka. Iteitapa omoroki ikiashitakeri kirinka omoro.
- Matsimeka Irori aitake, ishiariri Kenlly ijane impoiji itinanaka tinare iraka.
- Paita Irori?
- Chaine!
- Ja ainiroara. Jaukarika ijati.
Ja ikiyashiyetakeri omoro. Jatake kirinka. Ari ikanta ipokabetaja, ipokabetaja ari okantiri ijina:
- Pimatakeri?
- Jee.
Ikenaitake pianaka etini impoiji kintero aikero ipianajatiri aisati. Arimeka ibashiretaka iraita Irori. Arimeka chorashirori akarajeiti:
- Irori kataje! Nontashitempi parenti.
Ari otashitakeri parenti. Opichakeri:
- Poya!
Ibashiretakotakeri icharine kijiririra. Ari ikanta okantiri:
- Pinkoiratenari nojobentsite.
Ojati otsameti:
- Jee ari.
Ishonkatiri, ishonkatiri. Ari ipokapaji oñapatiri. Iro aisati ishemapakari ipiakeri mapi. Ishiyakotajari icharine.
- Paytayata te ankemeri irempa?
Okanta opokaji ari okantiri:
- Irori ainiro jobentsi?
- Jee, ainiro.
Ari amenitabetari pianaka mapi.

- Iromeka pishiakotajari picharine.
- Iraka, iraka ari entakotajari pashini. Ari okantiri:
- Irori!
- Jaa?
- Katanaje aka.
- Iro isaikimobetapajari. Ari ikanta, ari okantiri.
- Pinkoiratajenari nojobentsite. Nontsametaiteta.
- Jee, ari.
- Ikoiratiri. Ari ishemapajari aisati ipiajiri ishiyakabentajari parenti otsomeki.
- Impoña okisapakeri aisati oñabetapakeri.
- Payta nonkantaytetempiri te añajeri picharine meka abiro obajirori.
- Imajereiti ari ajiri pashini:
- Kataje aka Irori!
- Ari amajiri obakari parenti.
- Pisaikaiteya Irori.
- Tekatsikia ojobentsite. Ari yakero parenti itsarateki opichakeneriri itetakero itsaratejanikiki itetakero. Okenaitake tsamete, okenaitake opokami tampatika oya kaniri.
- Irori! Irori!
- Ojabetaka ashaninkaki:
- Te pineri Irori?
- Te, jaukampa ijatakeri.
- Ojayeбетaka itsipaki atiri kempejiki:
- Te piñabakeri Irori?
- Jee, noñabakeri abisanake ikantanakari aka.
- Irijate kirinka ya bisakeri atiri pashini:
- Te piñabakeri Irori?
- Jee, noñabakeri arankitake.
- Ipankiyetanaji parenti yanajirira posari. Parenti sobatanake. Yobanaka irobakera okantanaka oka. Yobanaka isampiyetiri atiri. Ikantiri jatake apite ikantanaka yanake ichakopite isampiyeti.
- Piñabakeri?
- Jee, irobakera itsonkayetanakero ipankiti parenti.
- Irobakera oshiyokake ari yobanaja iñapatiri atiri:
- Piñabakeri Irori?
- Jee, noñabakeri.
- Ikanta irotakekia irineri ishiretanakarokia nija intikatero. Yantakairirini icharine yakeri antyarite oshero itinakeri okantanakekia soo. Inpoijikia irishenariakeri onkenaytakebei yantakairirini icharine irotake ishiretanajari. Ari ishoikitapari shoi iro itinabetajari oshero yamenanake shoi yapitiri. Ari ikatianaka ikantiri
- Katanaje, tsame! Paita pantiri?
- Tekatsi.
- Paita pantantayetarori? Tsame ajatajeri!
- Ero nojatajitsi.

- Tsame!
- Eiro nojatajitsi.
- Ikantabetanajari
- Jauka ankanteriri?
- Ari yaita shibitsa isarake sara... sara... Yoisotakeri kantachari irijaniki montsoki
- Tsame ankijanakeri.
- Ikijabetanajari ñaitatiro shibitsa birinkanaka. Piotanaja katianaja, ikantabetari
- Tsame ajataje!
- Ari ikisanaka.
- Tsameketi abaitetanakerita.
- Yaitanakaro itintsakero. Ichakopite. Yaitari ‘tac’ iñashitakaro opiyashitakari ishaninka.
- ‘ee’ pikentaytetakena naiti.
- Yobakeri
- Jaukampa nokanteriri.
- Ari ishemapakari ikantabeitari
- Tsame! Tsame!
- Jee kametsatake.
- Ari ikantiri
- Pikoyrinka poyena! Poyena! Irokia pobakena pimpajena noitoki paitekia kirityamaki.
- Ijabetaka ashaninka yamabetapakaro irointi inchakiperori.
- Kari pamaente kirityamaki irotake pimpajantenari irointi.
- Ari te
- Naitempi nainti.
- Ijatake yaiti temeka añajero aka oranki oitsoki kiteritsoki.
- Jero pimpajenayameka aka.
- Itsampitakero ari yaitari ishinekobentaka ‘toc... toc...’ Sokijapake aka irosati iñabeti te inkameji.
- Meka pipajakena meka ari pimpokajanteya pamenajantena.
- Ijatanaji ashaninka yobakeri itsipabetanakari. Monkarataka kitaiteri cuatro.
- Ari pimpokaje pamenajantena.
- Jee ari.
- Iñabajiri atiri
- Jaume priori
- Ainiro te inkobaje impokaje.
- Abisanaji iñanaji atiri kitaite, kitaite ari
- Namenajanterita.
- Irosati iñabeti iñapatiri kitemonkitake kempetaka kamonaki rankini. Oshabiji anitatsi.
- Pinintirinkakia panake kapichaji aparó ishiyompiriake tekia impeshero aparó shiompire yanake.
- Aririnkaya pijatake eiro poinijairi tisoni kiarioya nokantakempi.

Irosati iñabeti. Yanakero ijataji, ijataji. Yaretapaka yobapairo itetanakero tsarateki iñaitatiro piotanaka antyaropeni kiri. Antyaropankaina peni kiri. Arimeka onkotakero ikamantayetabakeri ari pinkantenari pinkotakena pobakiana panojatake pinkonobake piarentsi iritake kamantayetabakeriri. Abarompamekametsa te ajokashiyetaro otaki iñakamaritake tisoni yamenake.

– ‘jum’ imanapitsatakenarobe shiribe.

Ikanta kamarita ari yamenampoireyeteri ijati iñatiro oparitanake aparo yoijumpoireti, yoijumpoireti iñapatiro kitemonkitake. Orijani shokoteki ishiyaitaka ipatakabetapakaro inkantaperome jire. Aitake shirinkanaka aikero, aikero ijenokitanake iñaitatiro otanake kiri Irori. Ijibatake otanake kirinka otinanaka. Te intsi-rekariempa ikenokotanake aisati itinanaka te añasanotajero oitsoki. Kapichabanijitanaji okenakotanake katonko karika añantaro katonko. Kiri kapichaji irointi jekoki irointi orijaniki. Kichokiji akameka chora obatsa ari abasanotakiari jau tsonkanaka oitsoki katianaja arimeka. Isobankanaja isaratikitanaka isantianakero tsee aririnkame isantianakiame otsonkayetanakerime otseki inejiki. Osatakerime ñaitakiro. Tsetanakenpakia irosatimpakia otsetantanaka irosati jau tekatsitanaji oitsoki antamekirinka otimiri antaro pankaina oberanta pakarori katonko. Kapichaji shoki irotakemeka nokenkitsatakotakeri.

Isatakerikameka irirajatanake ainiro tsamiri irotake iriraja kiri. Itiritabakaro iriori imentaki sankati itiritabakaro aka itsanoki. Irokia tsimeripe añayetiriranki iroiti iriraja kiri Irori impoiji kamari tsibani ikiajatake.

– Nontirinkabakiarota irirajani Irori.

Jaiteti ikiajatabakiero iriraja aparajatanakara yonpajakeri jau. Kametsabetanaka.

– Aparomeka!

Jau iñatiro kamarashiteki je ari meka okantaperani te iramparatero iriraja Irori yora yorini kametsa irisati sabaro. Ikiterinaki, kimaro yora meanto iromeka iriraja itiryetabakari jee ariyokiameka okaritimeka.

4.2. The myth – English version

Irori was Abireri’s grandson. His name is Irori, and his grandfather’s name is Abireri, one who would often transform people; children who climbed and ate ‘pacay’ fruit.

One day, they found some children climbing a ‘pacay’ tree (*Inga feuilleei* DC.). Irori pointed this out to his grandfather.

– Grandpa, look!

His grandfather did not pay any attention.

– Look, what’s that?

The grandfather looked. *Fuu...* he transformed the children into monkeys (*tsiero* – ‘pichico’ monkey – *Callimico goeldi*).

A monkey was painting himself with wito (anane – black colouring agent).

This is how Abireri would transform people.

They walked on.

They came across a person eating ‘chimiqa’ (**pamaki** – red fruit – *Pourouma minor* Benoist). Again, he pointed this out to his grandfather:

– Grandpa, look. What’s that? Look!

His grandfather didn’t want to look. People bothered him a lot.

They carried on walking and saw a Partridge (**kontona**) that had once been a person, one who used to clean his field and collect sticks to burn them. He pointed this out to his grandfather:

– Grandpa, look; he is cleaning his field!

His grandfather looked up. *Fuu...* and the Partridge was transformed into a partridge.

Then, he saw an Ant (**chonkeki** – *Formicidae* family). All that is an ant. The ant was collecting twigs. Previously the ant had been a person who cut and broke sticks and twigs.

– Grandpa, grandpa, look!

Abireri transformed the person into an ant he was an ant already, and then walked away. The ant’s mother said to him:

– You have transformed many of my children; I cannot see them anymore.

To the people she said:

– What are we going to do about him?

Abireri knew what they were thinking.

– They hate me.

To his daughters he said:

– My daughters, make some *masato*.

– Yes, daddy.

So Crab went to look for some cassava. Crab liked to prepare his ‘masato’ sweet but strong, so as to get people drunk.

– We are going to prepare ‘masato’, for him to go down.

Then the Armadillo dug a hole.

They got drunk. Abireri said:

Let’s have some fun!

Let’s entertain, uncle!

And so they went on.

Abireri got entirely drunk on the ‘masato’, which was easy to do as masato was sweet but very strong. Locally it was known as **tyontikija**.

He was having fun. As he was dancing, they pushed him into the hole Armadillo had dug.

Iroir was sleeping, like Kenlly. Then he woke up, crying.

– Where is my grandfather?

– There he is.

– Where has he gone?

– He will be back soon.

He did not realize that his grandfather was in the hole. That he had already gone down.

Then the people returned to their houses and Armadillo’s wife asked him:

– Are you back? Have you buried him?

– Yes ...

...and in that moment he was transformed permanently into an ‘armadillo’ (*etini* – *Dasypus kappleri* Krauss). He ran away to forest.

Irori was left to feel saddened by this. There were quite a lot of women. One of them called him:

– Irori, come. I will roast you some plantain.

So she chopped and roasted some plantain for him.

– Eat.

But he was sad about his grandfather; it was a burden upon him.

The woman told him to look after her baby, and went to work.

Irori swung the child in a hammock. He carried on swinging the child until he grew bored, so he transformed him into a grinding stone (*mapi*). Then the child’s mother returned. He was exactly the same as his grandfather. The child’s mother couldn’t hear her baby crying.

– What’s going on? Irori, where is the baby?

– There he is.

The mother went to look at her baby, who had been transformed into a stone.

– You are doing exactly the same as your grandfather did!

Irori started crying.

Then, another woman called him.

– Irori!

– What?

– Come here!

So he found himself in another house. The woman told him:

– Look after my baby. I am going to work.

– Sure, I will look after him.

This time he transformed the baby into ‘bejota’ (*otsomeki* - a peduncle of banana bunch). The child’s mother was upset, and shouted at him:

– What am I supposed to do? Your grandfather is not here anymore, but you are just like him!

Once again, this left Irori feeling sad.

Another woman called him over:

– Irori, come!

She took him home. He ate some plantain. The woman told him:

– Irori, stay.

This woman did not have a baby.

Irori put the plantain in his bag (*tsarato*), the part she had chopped. The woman left to work on her field. At noon she came back for some cassava. She called out:

– Irori, Irori!

He wasn’t at home. The woman and her husband went to ask the neighbours:

– Have you seen Irori?

– No; where has he gone?

Then she went to another neighbour and asked the same:

– Have you seen Irori?

– Yes, I've seen him. He just passed by. He was heading that way.

The husband carried on asking neighbours:

– Have you seen Irori?

– Yes, I've seen him, he passed some time ago. He planted some plantain that I had been cooking. It's now bearing fruit.

He went on and found more plantains. They were young plants. He carried on walking and asked another person. This person had two mates, who were carrying arrows. He asked:

– Have you seen Irori?

– Yes. He recently planted this plantain. It has started growing now.

They carried on walking and found another person:

– Have you seen Irori?

– Yes, I have.

They kept on walking; they would find him soon.

Irori had thought to dam water, like his grandfather used to. He had wanted to grab a large crab and raise a dam to flood it all. Then he overthrew it and the water went down.

Then, the people whistled at him as he was lifting the crab. He looked up at them. They whistled again, so he stood up. They said to him:

– What are you doing? Come, let's go!

– Nothing.

– Why are you doing this? Let's go home.

– I'm not going to come.

– Let's go!

– I am not going.

They spoke amongst themselves:

– How are we going to bring him under control?

So they collected some liana (*shibitsa*) and tied him up.

– He's only a child; we will carry him.

So they carried him. The liana got loose and Irori managed to stand up. They ordered him to come along.

– Let's go!

Then they got angry.

– Let's kill him!

One of the men drew his bow, then released the arrow, intending to kill Irori. But he did not kill Irori, instead killing his mate.

– You have hit me!

And he died. The people asked:

– How will we get rid of him?

Irori was bored. He said:

– Let's go, let's go! If you really want to kill me, then kill me. If you want to kill me, hammer a stake through my head and the whole of my body to impale me to the ground (*noitoki*). Go and find a proper lance (*kirityamaki*).

One of them went and brought one back, but it was just a stick.

– This is not the right one. Go and find *kirityomaki*. With this you are going to impale me.

But the man just could not find it. So Irori said:

– I will fetch it.

So he did. Now, *kirityomaki* cannot be found normally in the Tambo region. Its fruit is yellow. But Irori managed to find it.

The man nailed Irori down; *toc...toc..* The stake went through Irori's skull, but he kept on talking. He didn't seem to be dying.

– You've nailed me down. You will see me again.

The man went home. He had killed his mate. He returned to Irori on the fourth day.

– You will see me again.

– Yes, I will come back.

While walking, he found another person.

– Where's Irori?

– There he is. He won't come.

One day passed, then another one. Irori looked like a palm. Then the man returned. Irori said:

– If you want, take some of my fruit.

And the man took some of his fruit, but he did not remove them using a machete, but just picked them.

– When you go, you should not show them to 'gallinazo' (*tisoni* – *Coragyps atratus* Bechstein). I'm being serious.

The man took the fruit and continued on. He went back to his hut and left his bag, where he saw that there were plenty of *kiri*, big ones.

Then, his wife cooked them, just as Irori said:

– This is how you're going to prepare me. You will cook me. You will eat me. You will make 'chicha' (a fermented drink) out of me. You will mix this drink with 'masato'.

Those were Irori's instructions.

(That's why we eat all of it. We do not throw the peel on the ground.)

Gallinazo saw the peel, and looked.

– He did not invite me!

And he saw one seed and followed it. He followed the shadow of that person. And then he saw Kiri ('pijuayo'). It was rape. It was short. And he ran towards it in order to climb it. He wanted to grab the fruit. Kiri started to grow and grow. The fruit was higher up.

And he saw that Kiri had fallen down and managed to right himself. But Gallinazo did not want to jump off. He bent towards the east, and then he continued upwards. There wasn't much fruit left. Then he bent towards the south. That is why there is not much Kiri fruit in the south. There is little, and its fruit is small.



Figure 2. The *kiri* (*Bactris gasipaes*) palms with thorny stems and outgrowth which looks like climbing Gallinazo.

Here, there is plenty of fruit and it is big. So his fruit was gone. Kiri righted himself, and Gallinazo went down. And Gallinazo passed wind, because thorns pricked his rear. Thorns began to grow on Kiri's trunk (Fig. 2).

And so, his thorns grew. There was no more fruit. Where the sun goes down, there is plenty of *kiri*. Where he lost his fruit, in the north, there is little fruit. This is all that was said.

4.3. *Not quite an old myth*

Variations of this myth are found among other Arawak groups, namely the Yánesha, where the main protagonist is Ayots and his son Poparrona (Santos-Granero 2002), and also among the Nomatsiguenga where Abireri becomes Mábireri and Kiri becomes Quëri (Shavar and Dodds 1990). All these variations present a malicious deity who enjoys making people suffer by transforming them

into other kinds of beings. However, it is the grandson who seems to be responsible for all the evil actions by insisting his grandfather “trigger his transformative powers” (Santos-Granero 2002: 518). After Abireri’s death Irori inherits this transformative power. Irori seems to be a child, but in fact he is an adult in disguise, who refuses to grow.

Santos-Granero (2002) studied the Yánesha variation of the myth in relation to child sorcery among the Arawak. According to the author, there are morphological and thematic similarities between this myth and the Christian story of St. Christopher and the Child Christ. Santos-Granero elicited a number of parallels between Christian legend and Arawak myth (Santos-Granero 2002).

The juxtaposition of these two legends is a result of cross-fertilization between European Christian and Amerindian traditions during colonial times. Local Amazonian myths were taken by missionary agents to be adapted to Christian religion with the purpose of facilitating the evangelization mission. What might look like an original indigenous story in fact seems to be syncretic. However, this Christian story must have undergone significant changes during the ‘indianization’ process for the benevolent Christ to have become the malicious Irori/Kiri (Santos-Granero 2002). Santos-Granero even argues that the very name of ‘Kiri’ resembles Christ. In Spanish ‘Christ’ is ‘Christo’ which the Asháninka pronounce as ‘Kiristu’, “and that could have led to the abridged form, Kiri” (Santos-Granero 2002:521).

4.4. The transformative power of Kiri

The myth about the origins of the peach palm shows the highly transformative capacity of humans and non-humans within Asháninka mythology. In the way the myth is narrated one may think that there are such things as double transformations, as some animals that previously have been people are transformed into animals again (as with the ant). Also, others who are to be transformed into animals later on are elicited by their animal name (as with the crab). It is interesting that Irori seems sad and upset after having transformed infant children into stones and plants. The message, therefore, is that his malicious transformative powers are not intentional, perhaps even involuntary. The Asháninka version of this myth presents Irori as heavily burdened by his transformative power, which differs from his representation in the Yánesha version where he (named ‘Poparrona’ here) is described as a purposely-evil child who enjoys eating human flesh (Santos-Granero 2002).

5. Domestication of *Bactris gasipaes* in Amazonia

Amazonia is an important center of plant domestication. The primary global model for genetic distribution of crops was postulated by Nicolai Vavilov (1951), and involved an Andean centre of diversity in Bolivia, Peru and Ecuador. The Vavilovian centre of crop diversity in Northwestern Amazonia was based mainly

on fruit crops (Clement 1989a). In the lowlands, the center covered some of the upper Amazonian river basins, among them the Ucayali (Clement 1999b). Amazonia seems to rest more on fruit crops than any other region of the Americas, whereas *B. gasipaes* has been a popular and incredibly important crop in human nutrition since pre-Columbian times (Patiño 1963).

The first theory of Carl Sauer (1952) that *B. gasipaes* was domesticated for its starchy fruit, was later discussed by other authors. What else may have motivated domestication of the palm? Clement (1989b) suggests that the initial attraction was oil, since energy is a prime consideration for all subsistence. Patiño (1989) hypothesized the interesting idea that since the wood of the stem is widely used for technological artefacts such as bows, lances and arrows, it could have been the initial catalyst for peach palm cultivation. Bellwood (2005) concludes that species with technological uses might have been among the first to be domesticated, because of their fundamental importance to hunter-gatherer subsistence.

According to Rival (2009), the more the plant is used, the more complete the set of its names is. In the Huaorani language *B. gasipaes* and *Oenocarpus bataua* Mart. palms were named in a manner dependent on context. The name could depend on maturation status and growth, or even on the state of regrowth of the forest path on which they were found (Rival 2009). This is done by adding secondary lexemes, similarly to the Asháninka naming of palm parts: **-shi** – leaves and **-ki** – fruit, or forests (**-mashi**) dominated by palm stands.

5.1. *Kiri* in the Asháninka cultural domain

In the study area seven species of *Bactris* were found. Six of them: *B. bifida* Mart., *B. hirta* Mart., *B. major* H.Karst, *B. maraja* Mart., *B. oligoclada* Burret and *B. simplicifrons* Mart. interchangeably named **ashanki** or **chorintiki**, are small or medium-size palms with limited importance to the Asháninka. Only *B. gasipaes* possess a culturally-salient Asháninka name – **kiri**.

To see the relative saliency of the **kiri** palm name in the cultural domain, firstly fifty research participants were asked to name in Asháninka or Spanish (the language was of their choosing) all the palms which they knew. Respondents free-listed from six to fifteen palm species (Sosnowska et al. 2014). The **kiri** name was mentioned by 47 research participants. The highest number of respondents (48) mentioned **camona** (*Iriarteia deltoidea* Ruiz & Pav.); however, **kiri** had a lower than average number of mentions – 5.32 compared to 6.12 for **camona**. This means that *B. gasipaes* possesses the most salient folk-name in the Asháninka cultural domain and that **kiri** is one of the most important items in an *emic* Asháninka valuation of palms (Sosnowska et al. 2010, 2014).

5.2. *Utility and traditional management of the kiri palm by the Asháninka*

The wood of *B. gasipaes* is widely used by the Asháninka for technological artefacts from nails to raft joints, roofs to hunting traps, bows to arrowheads. Tools for weaving cotton are even named after the palm. **Kiritonki** is a fine stick made of palm wood, which forms the base of **kirikamentotsi** – a weaving spindle (Sos-

nowska 2012). The Asháninka used to emphasize the attributes of the *kiri* wood as exceptional. This tendency is confirmed by free-listing inventory, *kiri* in the *emic* Asháninka interpretation corresponds more with the domain of the ‘stem’ than the ‘fruit’ (Sosnowska et al. 2014).

The second question asked during free-listing interviews regarded uses for each palm from the folk-name list. Correspondence analysis of palm species with general use categories showed for which purposes specific palm species were used more often (Sosnowska et al. 2014). *B. gasipaes* is distinct from the other most useful palms because it does not correlate with ‘construction’. It is worth noting that the relative distance of *B. gasipaes* to ‘tools’ was closer than to ‘food’. It suggests that making tools is more important or at least has the same importance as obtaining food from *B. gasipaes*.

The myth narrated to children in Savareni village is a sophisticated way of passing on traditional ecological knowledge. The myth is narrated in a way that one might think that the events took place in the Savareni region or even in the village itself. The directions of peach palm dispersion and the movement of the protagonists are viewed from the perspective of the village. It is also characteristic that all the food and drink that is mentioned in the myth are staple and culturally important food products for the Asháninka; plantains, cassava, and in the end, the cooked fruit of the peach palm, as well as ‘masato’ (a fermented drink made from cassava) and ‘chicha’ (a drink usually made in Savareni from palm fruit of *kiri*, *chorina* – *Oenocarpus mapora* H.Karst. or *tsirentsi* – *Euterpe precatoria* Mart.). All these foods are widely shared among family members, but not only. All the women Irori meets offered him eagerly-cooked plantains. Hence, we may state after Howell (1996) that the food sharing described in the myth is a question not of biology, but of morality. One of the messages of the myth is that eating alone is considered an anti-social act by the Asháninka.

Thanks to this narrated myth, every child knows that *kiri* wood is the best material for creating an effective weapon, which in the myth is represented by the lance *kirityamaki*. Asháninka children also carefully collect small ‘Irori’s heads’ and know that after eating *kiri* fruit, the seeds should not be thrown away (Fig. 3). The preferred method for growing a new palm is by planting a seed. Asháninka asked about practices associated with planting palms usually mention the destruction of other plants growing near the seedlings.

Of the forty-five research participants who were asked: “Have you ever planted any palms? If so, which one?” all answered positively, and specified from one to a maximum of eight different species. The median of respondents had planted four different palm species. *B. gasipaes* was planted by twenty-four research participants as the fourth most commonly-cultivated palm, with the following palms used for roof thatch (*tsiaro* – *Attalea phalerata* Mart. ex Spreng., *chorina* – *O. mapora*, *compiro* – *Phytelephas macrocarpa* Ruiz & Pav.).

B. gasipaes was found both in current Savareni fields and homegardens and at the nearby former location of the village on the western bank of the Tambo river. However, in the nearby former forest location of the Savareni, only individuals



Figure 3. Fruits and seeds of *Bactris gasipaes*. According to Asháninka the seed shape resembles *Irori*'s head with the hammered spike.

abandoned around 20 years ago were found, which had been covered by the forest canopy, and had lost their reproductive potential and therefore no longer bear fruit. *B. gasipaes* is in an advanced stage of domestication and human intervention is necessary for its maintenance and survival.

6. Conclusion

The process of domestication of *B. gasipaes* seems to have been instigated by the exceptional attributes of *kiri* wood used in technological artefacts, and to a lesser extent its edible fruit. However, this palm utility is only one facet of the relationship between the *kiri* palm and the Asháninka people. *B. gasipaes* is of key importance both for the subsistence of and cultural identity of the Asháninka people. Their understanding of this culturally-important species is integral to their world view. The village and surrounding forest are their cultural space, full of signs which they know how to interpret from practical and mythical (cosmological) perspectives. The Asháninka live within and surrounded by a domesticated landscape, viewed from an ecological perspective, and at the same time maintain a meaningful dialogue between themselves and plants and animals. Thanks to oral transmission, the landscape acquires new meanings, and encapsulates and transmits historical memory.

Of the three approaches within animism mentioned in the introduction, the relationship between the Asháninka and the peach palm resembles that of reciprocity. This equivalence between the palm and humans is achieved by plant

management. The palm cannot survive without human intervention, but at the same time it also contributes via fruit and wood so is greatly appreciated by the Asháninka. This reciprocity, of which the outmost aim is to sustain the cosmos, is also revealed in the importance of the myth itself, passed down from generation to generation.

Nevertheless, this myth has the potential of not only transmitting values to Asháninka children, but also transmitting accurate ecological information relating to peach palm morphology, dispersal, culturally-important food and beverages and the behaviour of some animals.

Acknowledgements

We would like to thank to members of Savareni community, who were willing to share their knowledge with us. We are particularly grateful to Carmen Noemi Churihuinti who narrated the myth in Asháninka language, and her grandchildren Haroldo and Pilar Sebastian Antunez for Spanish transcription.

Thanks to Hector Sebastian Noemi, president of Central Asháninka del Río Tambo for permits and hospitality during fieldwork. Thanks to Betty Millán, head of the Museum of Natural History UNSM in Lima, for the use of facilities and application for research permits. Damaso Ramirez and Carlos Martel provided valuable help in the field while collecting, identifying and pressing palm specimens.

This project was funded by the Polish National Center of Science grant no. N305 296240 and Ministry of Science and Higher Education in Poland grant no. N305 022036.

Finally, we thank the Peruvian Government for issuing permission to conduct the study: MINAG – autorisacion no. 427-2009-AG-DGFFS-DGEFFS.

The notion of “Every useful plant has not only an identity but a story” in the title is borrowed from Rival (2009).

Addresses:

Joanna Sosnowska
Władysław Szafer Institute of Botany
Polish Academy of Sciences
ul. Lubicz 46
31-512 Cracow, Poland

E-mail: j.sosnowska@botany.pl

Monika Kujawska
University of Adam Mickiewicz in Poznan
ul. Św. Marcin 78
61-809 Poznan, Poland

E-mail: monikakujawska@gmail.com

References

- Aikhenvald, Alexandra Y. (1999) "The Arawakan language family". In *The Amazonian languages*, 65–106. R. M. W. Dixon and A. Y. Aikhenvald, eds. Cambridge: Cambridge University Press.
- Alexiades, Miguel N. (1996) "Collecting ethnobotanical data: an introduction to basic concepts and techniques". In *Selected guidelines for ethnobotanical research: a field manual*, 53–94. Miguel N. Alexiades, ed. (Advances in Economic Botany, 10.) Bronx: New York Botanical Garden.
- Arenas, Pastor (1992) "El 'cebil' o el 'árbol de la ciencia del bien y del mal'". *Parodiana* 7, 1–2, 101–114.
- Århem, Kaj (1996) "The cosmic food web: human-nature relatedness in the Northwest Amazon". In *Nature and society: anthropological perspectives*, 185–204. Philippe Descola and Gísli Pálsson eds. London: Routledge.
- Atran, Scott (1999) "Itzaj Maya folkbiological taxonomy: cognitive universals and cultural particulars". In *Folkbiology*, 119–203. Douglas L. Medin and Scott Atran, eds. Cambridge, Mass.: The MIT Press.
- Balée, William L. (1994) *Footprints of the forest: Ka'apor ethnobotany – the historical ecology of plant utilization by an Amazonian people*. New York: Columbia University Press.
- Bellwood, Peter (2005) *First farmers: the origins of agricultural societies*. Oxford: Blackwell.
- Berlin, Brent (1992) *Ethnobiological classification: principles of categorization of plants and animals in traditional societies*. Princeton: Princeton University Press.
- Brown, Cecil H. (1986) "The growth of ethnobiological nomenclature". *Current Anthropology* 27, 1, 1–18.
- Clement, Charles R. (1988) "Domestication of the pejibaye palm (*Bactris gasipaes*): past and present". *Advances in Economic Botany* 6, 155–174.
- Clement, Charles R. (1989a) "A center of crop genetic diversity in Western Amazonia". *BioScience* 39, 9, 624–631.
- Clement, Charles R. (1989b) "The potential use the pejibaye palm in agroforestry systems". *Agroforestry Systems* 7, 201–212.
- Clement, Charles R. (1999b) "1492 and the loss of Amazonian crop genetic resources. II. Crop biogeography at contact". *Economic Botany* 53, 2, 203–216.
- Descola, Philippe (1996a) *La selva culta. Simbolismo y praxis en la ecología de los achuar*. Cayambe: ABYA-YALA.
- Descola, Philippe (1996b) "Constructing natures: symbolic ecology and social practice". In *Nature and society: anthropological perspectives*, 82–102. Philippe Descola and Gísli Pálsson, eds. London: Routledge.
- Etkin, Nina L. (1994) "The cull of the wild". In *Eating on the wild side: the pharmacologic, ecologic, and social implications of using noncultigens*, 1–21. Nina L. Etkin, ed. Tucson: The University of Arizona Press.
- Govaerts, Rafaël and John Dransfield (2005) *World checklist of palms*. Kew: The Board of Trustees, Royal Botanic Garden.
- Hill Jonathan D. and Fernando Santos-Granero, eds. (2002) *Comparative Arawakan histories: rethinking language group and culture area in Amazonia*. Illinois: University of Illinois Press, Urbana-Champaign.
- Henderson, Andrew (1995) *The palms of the Amazon*. New York: Oxford University Press.
- Heckenberger, Michael (2002) "Rethinking the Arawakan diaspora: hierarchy, regionality, and the Amazonian formative". In *Comparative Arawakan histories: rethinking language family and culture area in Amazonia*, 99–122. Jonathan D. Hill and Fernando Santos-Granero, eds. Urbana: University of Illinois Press.
- Heckenberger, Michael (2005) *The ecology of power: culture, place, and personhood in the southern Amazon, AD 1000–2000*. New York: Routledge.
- Howell, Signe (1996) "Nature in culture or culture in nature? Chewong ideas of 'humans' and other species". In *Nature and society: anthropological perspectives*, 127–144. Philippe Descola and Gísli Pálsson, eds. London: Routledge.

- Hvalkof Søren and Hanne Veber (2006) “Los Ashéninka del Gran Pajonal”. In *Guía etnográfica de la alta Amazonía*. Vol. 5, 77–279. Santos-Granero, Fernando and Frederica Barclay, eds. Lima: IFEA.
- Instituto Nacional de Estadística e Informática (2009) “Población indígena de la Amazonía Peruana supera los 330 mil habitantes”. Nota de prensa no.014 Febrero 2009. Lima: Oficina Técnica de Difusión INEI.
- Keller, Héctor A. (2003) “Mythical origin of *Chusquea ramosissima* (Poaceae), the ancient knife of the Guaranis”. *Economic Botany* 57, 4, 461–471.
- Kohn Eduardo O. (2002) “Natural engagements and ecological aesthetics among the Avilá Runa of Amazonian Ecuador”. Unpublished doctoral dissertation, University of Wisconsin, Madison.
- Lenaerts Marc (2006) “Substances, relationships and the omnipresence of the body: an overview of Ashéninka ethnomedicine (Western Amazonia)”. *Journal of Ethnobiology and Ethnomedicine* 2, 49. doi:10.1186/1746-4269-2-49
- Martin Gary J. (2007) *Ethnobotany: a methods manual*. London: Earthscan.
- Meggers Betty J. (1996) *Amazonia: man and culture in a counterfeit paradise*. Washington: Smithsonian Institution Press.
- Patiño Victor M. (1963) *Plantas cultivadas y animales domésticos en América Equinoccial*. Tomo I. *Frutales*. Cali, Colombia: Imprensa Departamental.
- Patiño Victor M. (1989) “Comportamiento de plantas nativas colombianas bajo cultivo: situación actual del cultivo del chontaduro”. *Revista de la Academia Colombiana de Ciencias* 17, 65, 259–264.
- Patiño Victor M. (1992) “An ethnobotanical sketch of the palm *Bactris (Guilielma) gasipaes*”. *Principes* 36, 3, 143–147.
- Posey Darrel A. and William Balée (1989) *Resource Management in Amazonia: indigenous and folk strategies*. (Advances in Economic Botany, 7.) New York: New York Botanical Gardens.
- Rival, Laura (2009) “Towards an understanding of the Huaorani ways of knowing and naming plants”. In Miguel N. Alexiades, ed. *Mobility and migration in indigenous Amazonia*, 47–68. Oxford: Berghahn Books.
- Ryan Gery W., Justin M. Nolan, and P. Stanley Yoder (2000) “Successive free listing: using multiple free lists to generate explanatory models”. *Field Methods* 12, 83–106.
- Santos-Granero, Fernando (1998) “Writing history into the landscape: space, myth and ritual in contemporary Amazonia”. *American Ethnologist* 25, 2, 128–148.
- Santos-Granero, Fernando (2002) “Saint Christopher in the Amazon: child sorcery colonialism and violence among the Southern Arawak”. *Ethnohistory* 49, 3, 507–543.
- Santos-Granero, Fernando and Frederica Barclay (2005) *Guía etnográfica de la alta Amazonía*. Vol. 5. Lima: IFEA.
- Sauer, Carl O. (1952) *Agricultural origins and dispersals*. New York: American Geographical Society.
- Schama, Simon (1995) *Landscape and memory*. London: Harper Collins.
- Shaver, Harold and Lois Dodds (1990) *Los nomatsiguenga de la selva central*. Lima: Ministerio de Educación and Instituto Lingüístico de Verano.
- Sosnowska, Joanna, Damaso Ramirez and Betty Millán (2010) “Palmeras usadas por los indígenas Asháninkas en la Amazonía Peruana”. *Revista Peruana de Biología* 17, 3, 347–352.
- Sosnowska, Joanna (2012) *Palm diversity in a management area of the Asháninka people in Amazonia – resources, distribution, utilization*. PhD thesis. W. Szafer Institute of Botany, Polish Academy of Sciences, Cracow.
- Sosnowska, Joanna, Adam Walanus, and Henrik Balslev (2014) “Palm management and domestication by Asháninka in the Amazon” *Human Ecology* (in press)
- Thiers, B. (2010). “Index Herbariorum: A global directory of public herbaria and associated staff”. In *New York Botanical Garden's Virtual Herbarium*. Available online at <<http://sweetgum.nybg.org/ih/>>. Accessed on
- Vavilov, Nikolai I. (1951) *The origin, variation, immunity and breeding of cultivated plants*. Waltham: Chronica Botanica.
- Viveiros de Castro, Eduardo (1998) “Cosmological deixis and Amerindian perspectivism”. *Journal of the Royal Anthropological Institute*. N.S. 4, 469–488.