

MUSICAL BAMBOOS

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MUSICAL BAMBOOS

Standing at the edge of a mountain abyss, in the Yungas of La Paz, surrounded by dense clouds hanging over the treetops, I feel like a wayfarer over the sea of fog.

From above, I gaze at the treetops of the cloud forest with its dense vegetation. Elsewhere there is forest loss, deforestation, and destruction of habitats, in a region recognized worldwide for its high level of biodiversity.

It is home of the musical bamboos, a natural haven of wildlife and an earthly shelter.



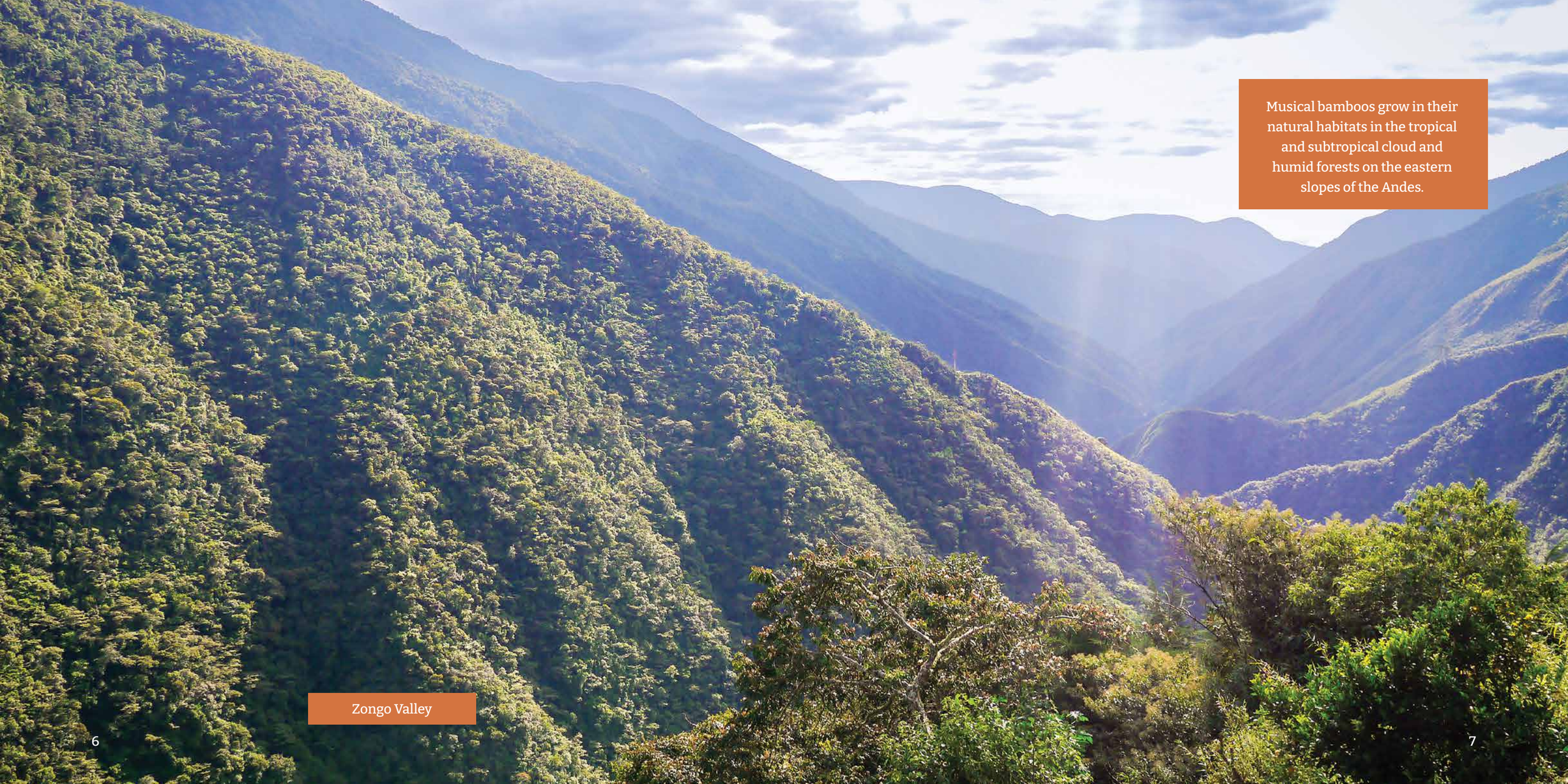
Ecotone of the Yungas in Takesi

Tuquru

The term Musical Bamboos highlights the musical value of Andean bamboos in the context of highland flute making on the Altiplano.

These native woody bamboos are used to make a variety of Andean flutes, such as panpipes, as well as vertical and transverse flutes.

Chhalla



Musical bamboos grow in their natural habitats in the tropical and subtropical cloud and humid forests on the eastern slopes of the Andes.

Zongo Valley

CHHALLAS

Musical bamboos for panpipes *(sikus, zampoñas)* are locally known by their Aymara name, *chhalla*. Etymologically, the word *chhalla* refers to a dry corn stalk. When specifying that *luriris* (Andean flute makers) are talking about woody bamboos for making panpipes, the word *siku* is often added. The combination *sikuchhalla* would then mean something like dry *siku* canes. The *chhallas* are available in an impressive diversity, with different types (different species in the genera *Rhipidocladum and Merostachys)* used for *sikus* of various rural styles and for urban zampoñas.



Chhalla of Zongo
(Rhipidocladum sp.*nov.* af. *harmonicum)*

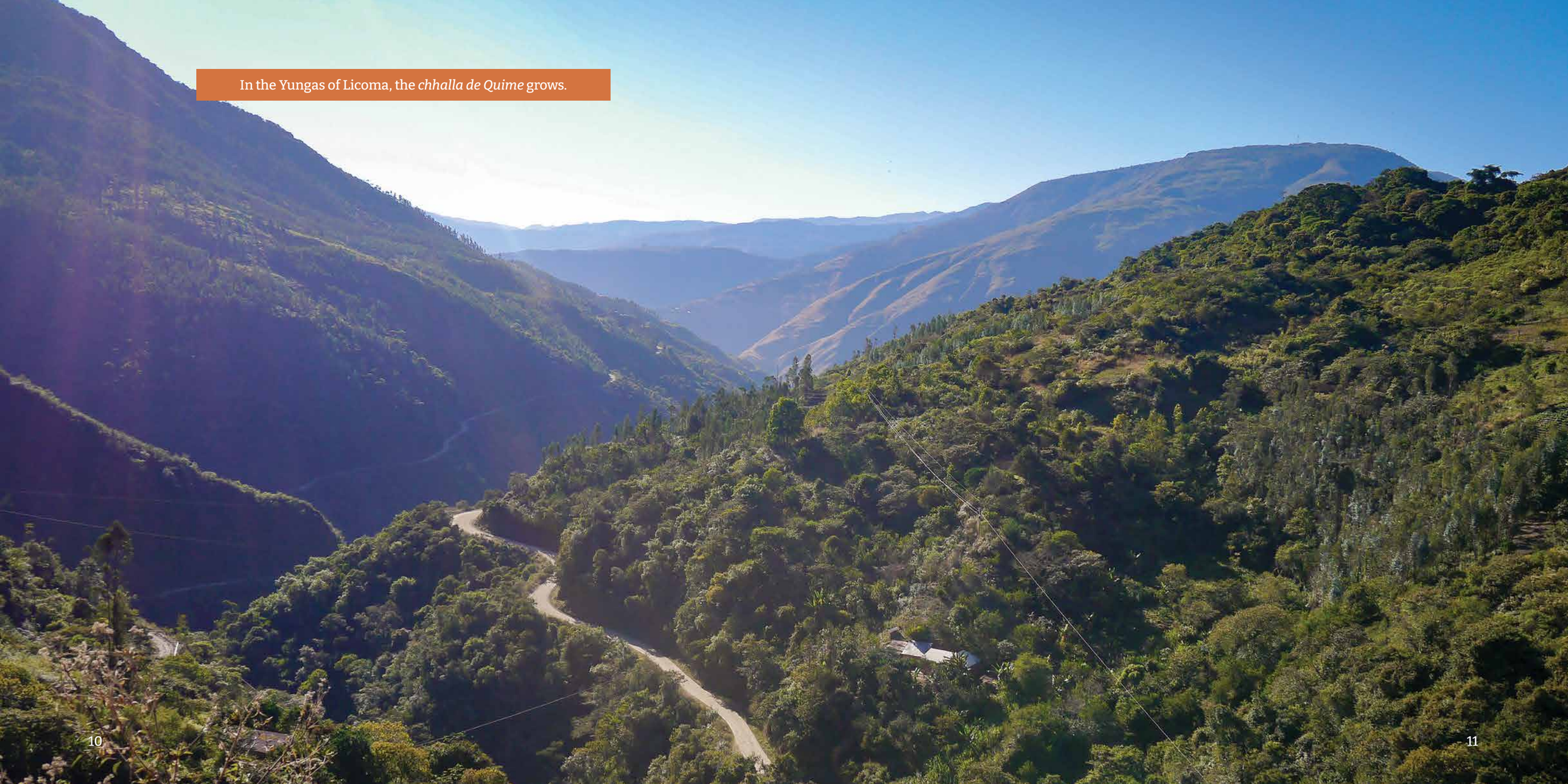


Chhalla of Alto Beni
(qipu) (Rhipidocladum sp.*nov.)*

Many of the *chhalla* species have not yet been botanically described.

Chhalla of Quime
(juvenile plant)
(Rhipidocladum sp. *nov.* af. *racemiflorum)*





In the Yungas of Licoma, the *chhalla de Quime* grows.

▲

"Rhipis" - fan-like branching pattern in *chhalla de Zongo (Rhipidocladum* sp.*nov.* af. *harmonicum)*



Clump of Culms in Chhalla of Zongo



Flowering of Chhalla of Alto Beni *(lluq'a)* in 2018

Musical bamboos are monocarpic plants, which means they produce flowers and set seeds only once after prolonged life cycles, before quickly decaying and dying within a comparatively short period of several months. When they flower, the event is usually gregarious and synchronized within the same cohort.

They produce enormous quantities of seeds that fall to the forest floor, where new seedlings grow for the same amount of time as their progenitors, thus repeating the process. This phenomenon has ecological implications for the material supply of the *luriris.* The collective die-off of bamboos results in recurrent periods of material scarcity at specific intervals.



Chirimoyani, Zongo

The distribution of *chhallas* is diverse and their altitude ranges vary from 500 to 2500 meters above sea level.



Chhallero Alejandro Colqe in Chirimoyani, Zongo









New Banana plantations in Inicua Bajo, Alto Beni





▲

Drying of *chhalla de Alto Beni (qipu)* in half-shade, under banana plants

Chhallero René Condori in Fernández, Alto Beni

The *chhallas* are used in Alto Beni as fire accelerant in the slash-and-burn agriculture.





The different types of *chhalla* have varying wall thicknesses and are used in different *siku* panpipe styles.

▲ Zongo

▲ Quime

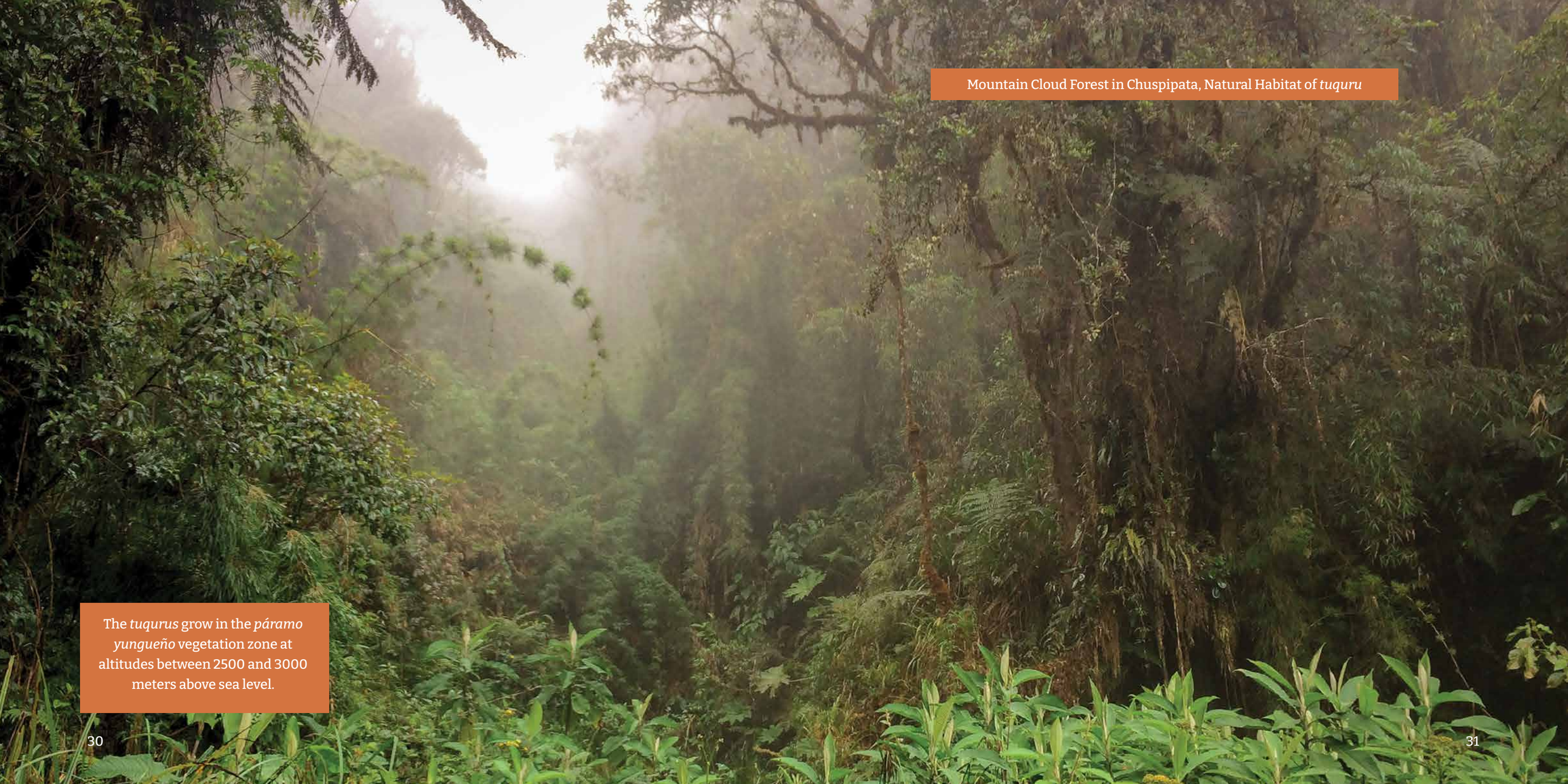
▲ Alto Beni *lluq'a*

▲ Alto Beni *qipu*

▲ Kjirki

▲ Bermejo

Panpipe-Making Workshop of Andrés Mamani (†), El Alto



Mountain Cloud Forest in Chuspipata, Natural Habitat of *tuquru*

The *tuqurus* grow in the *páramo yungueño* vegetation zone at altitudes between 2500 and 3000 meters above sea level.

TUQURU

The musical bamboos for making vertical and transverse flutes *(qinas, pinkillus, musiñus, phalas)* are called *tuquru*.

According to the musical classification, the *luriris* use 3 types of *tuqurus* (different species in the *Aulonemia* genus) to make a diversity of Andean flutes.



Kjirki Tuquru in Umamarka *(Aulonemia* sp.*nov.)*



Tuquru Cochabamba in Kara Huasi *(Aulonemia* sp.*nov.* af. *herzogiana)*

The *tuqurus* belong to the Andean woody bamboo genus called *Aulonemia*.



Tuquru Paceño in Carijana *(Aulonemia hirtula)*



Páramo Yungueño between Choquetanga and Palomani, Inquisivi Province

Diformism of Internode



"Triple-Nodes" of the *tuquru:* The *tuqurus* are characterized by having a very long internode (up to 180 cm) followed by two short internodes on which the culm leaves grow.

Culm Leaves



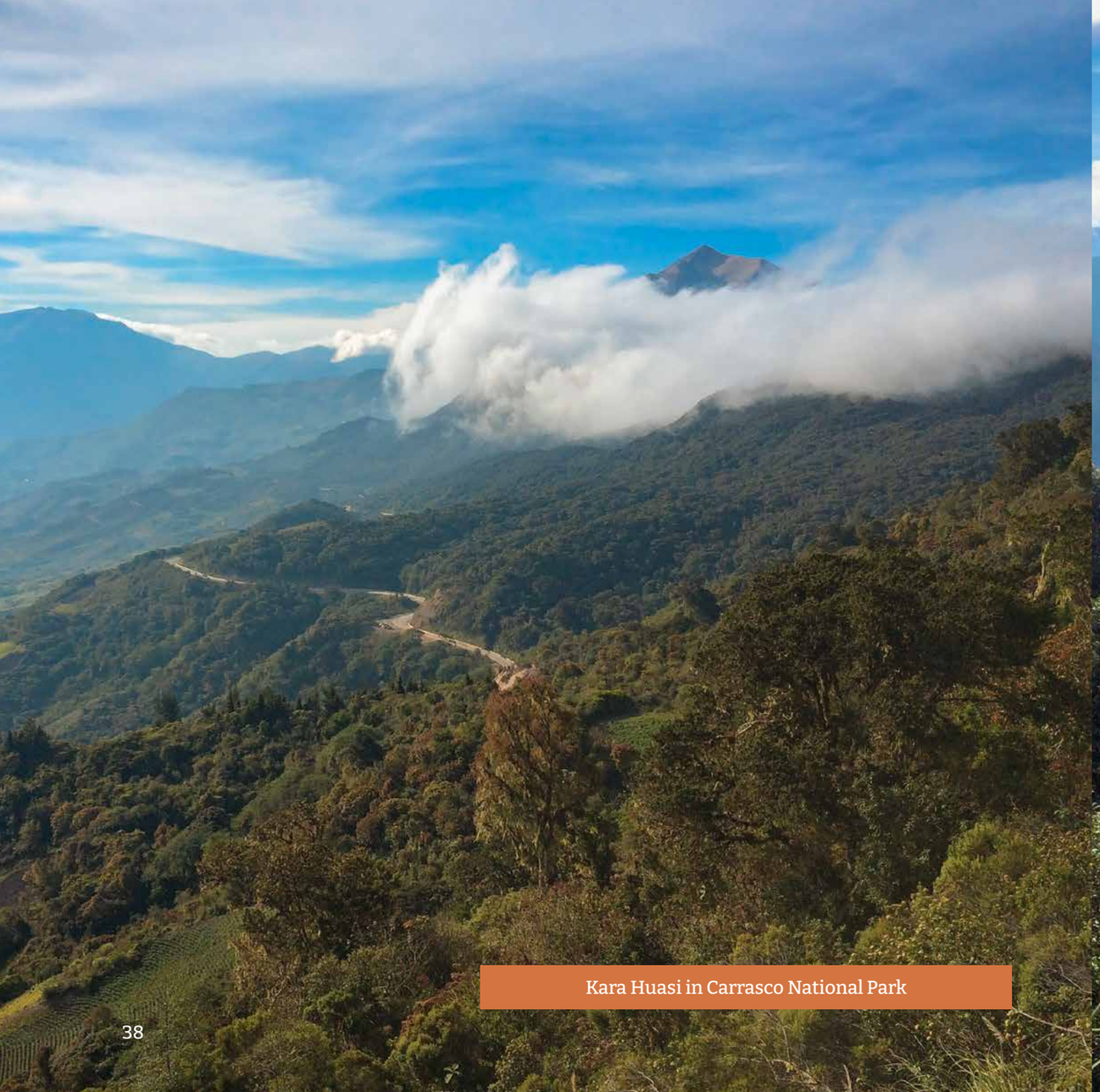
▲ Tuquru Paceño (Immature or *llullu*)



▲ Kjirki Tuquru (mature)



▲ Tuquru Cochabamba (mature)



Kara Huasi in Carrasco National Park

When there are branches on adult plants, the culm leaves open and fall to the ground.

Tuquru Cochabamba



Culms with final diameter in Tuquru Paceño



Musical bamboos and their culms form round clumps due to their pachymorph rhizome system. The culms grow out of the cloud forest soil with their final diameter, as musical bamboos only have primary growth (unlike trees; they do not have secondary growth). Depending on the age of the plant and its rhizome system, culms of different diameters emerge.



Chuspipata, with Mount Mururata in the background



Chuspipata, with Mount Mururata in the background

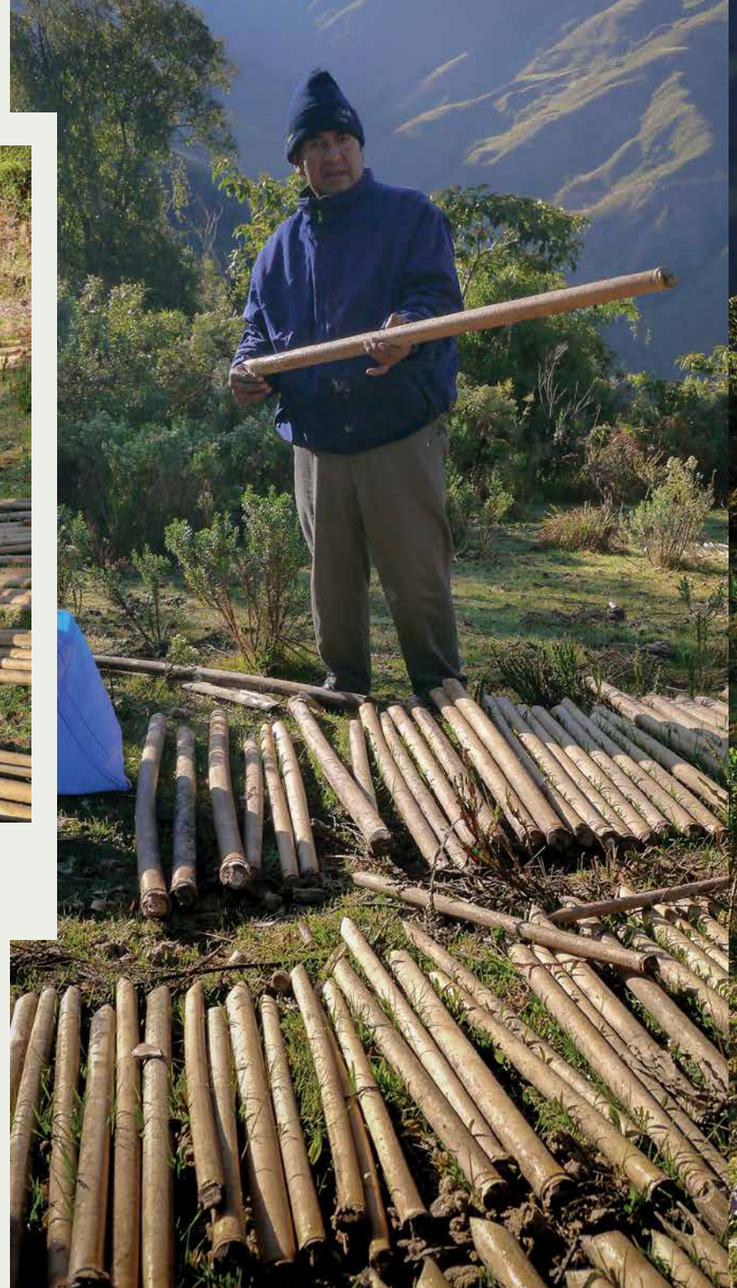


Decayed Tuquru Paceños in Chuspiapta 2018



Páramo Yungueño of Umamarka with Kjirki Tuquru







Maestro *luriri* Ignacio Quispe in Umamarka, selecting Kjirki Tuquru

The different types of *tuquru* have their own characteristics and are used in various vertical and transverse flutes.

▲ Tuquru Cochabamba

▲ Kjirki Tuquru

▲ Tuquru Paceño (Carijana, Chuspipata, Choquetanga)

▲ Musiñu-Making Workshop of Ignacio Quispe, El Alto



Flute-Making Workshop of Basilio Uri, El Ato



Flute-Making Workshop of Favio Mamani, La Paz



Unduavi, Nor Yungas



Research Blog

Interactive Map

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