



Medicinal plant use in two Andean communities located at different altitudes in the Bolívar Province, Peru

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ABSTRACT

Ethnopharmacological relevance: The study documents current medicinal plant knowledge and use in two Andean communities and depicts the dynamic nature of ethnobotanical relationships by illustrating cultural integration of biomedicine and local plant medicine into a complementary system.

Aim of the study: In order to elucidate the importance of medicinal plants, the following research questions were addressed: Which position do medicinal plants have in the local health care system? Which plants are used medicinally, and do they differ between the communities? Is their use supported pharmacologically?

Materials and methods: Fieldwork was done for seven months in 2010. Semi-structured interviews were conducted with 120 informants in Uchumarca and Pusac/San Vicente de Paúl, and the medicinal plant species mentioned by the informants were vouchered.

Results: In total, 2776 plant remedy use reports were recorded. Most people in both communities know at least some medicinal plants, usually from their parents, grandparents, sometimes from books. There are different types of local plant specialists, who are consulted above all for the treatment of diseases thought to have a magical origin or for recommendations of plants to treat minor diseases. Overall, 140 medicinal plants were documented, with a conformity of over 90% between the communities. The effective use of the most frequently cited medicinal plants is supported by scientific literature. Most uses were reported for the treatment of gastrointestinal (17%), nervous (14%), respiratory (14%), urological (13%) and dermatological diseases (8%); nervous diseases were more prevalent in the mountain community, while dermatological and urological diseases were more common in the valley.

Conclusions: People combine medicinal plant use and biomedicine depending on the kind of disease, their beliefs, and their economic situation. The local use of different available medical resources is reflected by the combination of related epistemologies to explain disease causes. Medicinal plant use and biomedicine complement each other to form the local health care system.

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1. Introduction

The botanical richness of Peru is reflected in the diversity of plant uses: about 5000 plant species are used by the Peruvian population for alimentation, medicine, ornaments, construction, fodder, dyes, toxins, and firewood, among other uses. Above all, rural communities depend to a great extent on plants for their subsistence (Brack Egg, 1999).

Whereas most ethnobotanical research in Peru has been conducted in the Amazon (e.g., Phillips and Gentry, 1993; Jovel et al., 1996; Greene, 1998; Polesna et al., 2011), rather few studies have been done in the northern Peruvian Andes (Hammond et al., 1998; de Feo, 2003; de-la-Cruz et al., 2007). Bussmann and

Sharon (2006) documented more than 500 medicinal plant species used by local healers on the northwestern flanks of the Peruvian Andes down to the Pacific lowlands. The majority of plants were used for the treatment of “magical/ritual” ailments (207 species), followed by respiratory disorders (95) and problems of the urinary tract (85). On the northeastern flanks of the Peruvian Andes, anthropological investigation, with small ethnobotanical components, concentrated mostly on cloud forest dominated regions (Schjellerup et al., 2009). In the dryer inter-Andean valleys of the Marañón watershed, no ethnobotanical research has been done so far. However, the seasonally dry tropical forests of this region are highly biodiverse, endangered remnants of these previously much more extensive habitats (Linares-Palomino, 2006; Särkinen et al., 2011). Furthermore, this area lies within the territory of the pre-Inca Chachapoya Amerindians, who were described by Hispanic chroniclers as famous for their powerful sorcerers and healers (Schjellerup, 2005).

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Extensive knowledge of medicinal plant use can thus be expected among today's mestizo communities.

This study aims to document and analyze comparatively the local medicinal plant knowledge and use among the inhabitants of two communities living at different altitudes in the inter-Andean valleys of the Marañón watershed. The main research questions include: How is medicinal plant knowledge distributed within the communities? What position do medicinal plants have in the local health care system? How is the medicinal plant knowledge transmitted? Which plants are medicinally used, and is their use supported pharmacologically? Which differences exist between the inhabitants of the two communities regarding medicinal plant knowledge and use?

2. Research area

2.1. Geographical aspects, vegetation, and agriculture

Research was conducted in Bolívar Province, located in the northeastern part of the department of La Libertad in northern Peru. Interviews were carried out in two communities situated in different elevation zones: (1) in the town Uchumarca (capital of the Uchumarca District) in the mountains at 2900 m, and (2) in

the neighboring villages Pusac (Uchumarca District) and San Vicente de Paúl (Longotea District), which are treated as one community, close to the valley bottom at 1400 m (Fig. 1).

The climate in the study region is seasonal, with a wet season from October to April, followed by extensive flowering at the beginning of the dry season in May and the first half of June. The vegetation below 1800 m is typically seasonally dry tropical forest, which consists of deciduous trees and shrubs forming a woody vegetation without a continuous grass layer. Characteristic genera include *Prosopis* (Fabaceae), *Bougainvillea* (Nyctaginaceae), *Ceiba* (Malvaceae), *Jacquinia* (Primulaceae), *Loxopterygium* (Anacardiaceae), *Tecoma* (Bignoniaceae), and Cactaceae genera in areas with increasing aridity (Pennington, 2004); For the rather dry Marañón valley *Bombax* (Malvaceae), *Bursera* (Burseraceae), *Cereus*, *Cephalocereus* and *Opuntia* (Cactaceae), and *Ochroma* (Malvaceae; Schjellerup, 2005). Crops are grown within these altitudinal zones on irrigated fields and orchards and include *Arachis hypogaea* L. (Fabaceae), *Manihot esculenta* Crantz (Euphorbiaceae), *Saccharum officinarum* L. (Poaceae), and various tropical fruits, e.g., *Carica papaya* L. (Caricaceae), *Citrus* spp. (Rutaceae), *Lucuma bifer* Molina (Sapotaceae), *Mangifera indica* L. (Anacardiaceae), *Musa paradisiaca* L. (Musaceae), and *Persea americana* Mill. (Lauraceae; Schjellerup, 2005). Between 1800 m and 3500 m, the vegetation consists of Andean montane forests with frequent

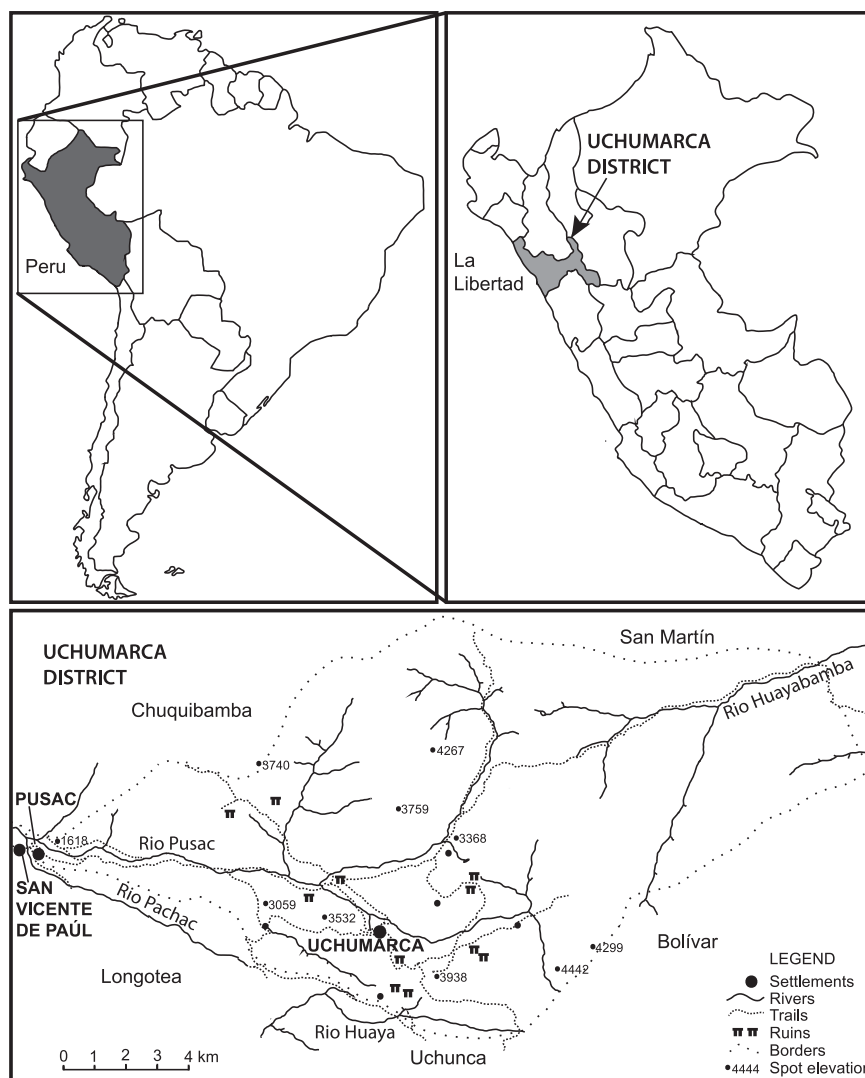


Fig. 1. Map of the research area. The study sites are capitalized (adapted from Brush, 1971).

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