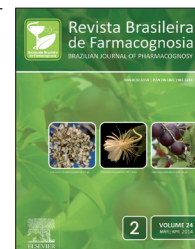




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Original article

Documentation of the medicinal knowledge of *Prosthechea karwinskii* in a Mixtec community in Mexico



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ABSTRACT

In Mexico, native orchids are appreciated for their ornamental value and traditional uses and in many indigenous communities they comprise part of a biocultural heritage. The orchid *Prosthechea karwinskii* (Mart.) J.M.H. Shaw, Orchidaceae, is particularly relevant in this context, although some of its traditional uses have been attributed to a very similar species, *P. citrina*. A recent study of *P. karwinskii* reported unknown medicinal and other traditional uses by the Mixtec community in Mexico. Unfortunately, increasing acculturation of indigenous communities has resulted in a loss of the community's traditional knowledge, thus, we herein documented the worldview and practices associated with the medicinal use of *P. karwinskii* as well as the socioeconomic aspects that characterize the holders of this knowledge. People with this knowledge are mainly indigenous women with little or no schooling, who learned the medicinal practices from family tradition. They use pseudobulbs, leaves, or flowers of the plant to treat coughs (infusions), wounds and burns (poultices), diabetes (tea or chewed), to prevent miscarriages and to assist in childbirth (infusions). These results show a promising future for ethnopharmacological research on *P. karwinskii*.

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Introduction

Medicinal plants are the most important traditional therapeutic resource of many indigenous communities where access to health services is scarce or nonexistent. In many cases, the virtues of these plants are based on empirical practices dating from ancient times. In some cases these have been confirmed by current pharmacology (Viesca, 1993). In many cases, knowledge regarding these practices is verbal, maintained and transmitted among few people, scarcely accessible to others, and rarely incorporated into formal studies. For this reason,

it is important to document this information before it is lost due to processes of acculturation or cultural erosion suffered by indigenous people (Argueta and Aguilar, 1993; Sanfilippo, 1993; Naranjo, 1995; Pardo-Santayana and Gomez-Pellon, 2002; Reyes-Garcia et al., 2004; Boege and Chan, 2008).

In Oaxaca, Southern Mexico, the Mixteca is a region inhabited by people of Mixtec and Triqui ethnicities, for whom the native surrounding plants have traditional uses and are part of their biocultural heritage (Boege and Chan, 2008). Such plants include orchids, appreciated for their ornamental, medicinal and ceremonial value, and are also used as edible

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herbs (Hagsater et al., 2005; Solano et al., 2010; Cruz-Garcia, 2013). A particularly valued orchid in the Mixteca is *Prosthechea karwinskii* (Mart.) J.M.H. Shaw, Orchidaceae, endemic to Southern Mexico where it grows as an epiphyte in oak or pine-oak forests, this plant has showy yellow flowers with a very pleasant aroma.

The use of *P. karwinskii* in traditional medicine has not been previously reported. Until recently, this orchid was confused with its sister species, another Mexican endemic orchid known as *P. citrina* (La Llave and Lex.) W.E. Higgins; it is a very similar species, so in the past the available information for the first was invariably attributed to the second. In the present study we agree with Pridgeon et al. (2005) and Soto et al. (2007) on including both species in *Prosthechea* genus and not in *Euchile*, which is synonym of the first, according to these authors. The literature reports few medicinal uses for *P. citrina* or any of its synonyms (*Cattleya citrina*, *Encyclia citrina*, *Euchile citrina*, *Epidendrum citrinum*, or *Sobralia citrina*). Francisco Hernández, a Spanish physician who visited Mexico in mid-16th century illustrated an orchid named *cozticoatzontecoxochitl* by the Aztecs, which means "yellow pendant flower snake-like" (Hernandez, 1959). This plant was used by Aztec doctors to heal infected wounds. Urbina (1903) identified Hernández's drawing as *Cattleya citrina*. García-Peña and Peña (1981), Hagsater et al. (2005), and Ossenbach (2005) reported that poultices were the way in which this plant was used to heal wounds.

Regarding other traditional uses for *P. karwinskii*, Hagsater et al. (2005) described the "agua de gloria" (glory water) prepared in the Mixteca of Oaxaca, which is a scented water made with flowers of this orchid used at processions during Easter. Moreover, Solano et al. (2010) indicated that during Easter, in several towns from Oaxaca, people create

elaborate ornaments with these flowers and these are placed in churches, streets and homes. Cruz-García (2013) mentioned that in Tlaxiaco, Oaxaca, this orchid is used for ceremonial and food purposes, as an inspiration for artistic expressions, and is used to treat several diseases or conditions in traditional medicinal practices. Given that there was previously not known medicinal use for this orchid, and as the process of globalization and acculturation is becoming more common in indigenous communities causing the loss of traditional knowledge, the purpose of this work was to document the remaining medicinal and traditional knowledge of *P. karwinskii* of the people from Tlaxiaco.

Materials and methods

This study was conducted in the municipality of Tlaxiaco (17°16' North latitude, 97°41' West longitude, 2040 m elev.), one of the most important settlements in the Mixteca of Oaxaca, Mexico. A previous study in the community documenting the traditional knowledge of Orchidaceae in this zone (Cruz-García, 2013) recorded two of the 37 orchid species sold there as medicinal, *P. karwinskii* (Mart.) J.M.H. Shaw, Orchidaceae, and *P. michuacana* (La Llave and Lex.) W.E. Higgins. The latter is used to treat kidney problems while the first has more medicinal uses that are herein documented.

Much of the traditional knowledge about wild plants prevails in people for whom these are a resource. Keeping this in mind, weekly visits (every Saturday) were made between September 2011 and August 2012 to the Tlaxiaco's market and *tianguis* (a weekly open-air street market) in which a total of 56 orchid dealers were identified. All of them agreed to answer a semi-structured questionnaire (see format in Annex 1) and

Annex 1

Interview format for informants of orchids' medicinal uses.

Date: ____/____/____

Name: _____ Age: _____

Occupation: _____ Schooling: _____

Place of origin: _____

Do you speak a native language? _____ What language? _____

Do you belong to a society of traditional healers? Yes ___ NO ___ Which? _____

How did you acquire the knowledge about traditional medicine? _____

Do you practice traditional medicine? _____

For how many years have you practiced traditional medicine? _____

How did you acquire your knowledge about the use of orchids in traditional medicine? _____

Do you authorize the inclusion of this information in a publication of the results of this study providing that your name is kept anonymous? _____

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