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Short Commentary

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Understanding the Exchange of Medicinal Plant Information during the Mission Period in California: It's Relevance to Current Barriers Facing the Exchange of Indigenous Medicinal Plant Information Today

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Commentary

Although many modern medicines have been derived from the knowledge of the use of plants by indigenous people, we believe there are more cures known to indigenous people that are yet to be communicated to the modern world. The main barriers to communication about these plants are a sense of the part of many members of the developed world that indigenous people are primitive, and their knowledge of medicine is rudimentary and fear on the part of indigenous people that their intellectual property will be taken without proper compensation. There is some truth to both barriers. Our study demonstrated that these and other barriers to communication about medicinal plants occurred in California during the Mission period (1760-1821). In our study we investigated barriers interfering with the transfer of knowledge from the Native Californians to the Franciscan priests at the Missions. We believe a brief review of our study will shed light on the current situation concerning the transfer of medicinal plant information [1].

The use of native plants for medicinal purposes was widespread among indigenous people in what is now known as California at the time of European exploration and colonization (1542 to 1821). Knowledge of some of these plants occurred at the household level where common ailments such as colds, headaches, and constipation were treated. The collection, preparation, and application of these medicinal herbs on the household level were the responsibility of women who passed this knowledge down to their daughters. More complicated ailments were treated by shaman whose knowledge of the use of plants extended to more serious ailments [2].

The transfer of information about medicinal plants from indigenous people in California to Europeans was, however, limited in part by the reluctance of the indigenous people to share this knowledge. Shaman saw little incentive in revealing information that was the basis of their income and stature in local communities. European explorers and colonists often regarded the indigenous people as primitive and rejected the value of their knowledge regarding medicinal plants. This was especially true in the case of missionaries sent to California to Christianize and acculturate indigenous populations. Acculturation required the suppression of most indigenous beliefs and practices, including medicinal cures.

Our study found that the Native Californian communities living in the vicinity of what was to become a system of 21 Missions utilized 265 plant species for medicinal purposes prior to the arrival of the Spanish explorers. These were used to treat 14 categories of human ailments (e.g., cardiovascular diseases, gastrointestinal problems, nervous system problems, respiratory complaints, etc.). Some examples of these native medicinal plants are trees like California bay (Umbellularia californica) which was used for the treatment of skin problems, shrubs like California coffeeberry (Rhamnus californica) used to treat rheumatism, herbs such as yerba buena (Mentha arvensis) used for the treatment of eye problems, and grasses like saltgrass (Distichlis spicata) used to treat fevers. One hundred ten of the 265 plants were used to treat Pulmonary problems.

The preparation and application of plant materials by the Native Californians included the direct application of leaves to the affected area (e.g. Rhamnus californica – treat rheumatism); drinking water in which the plant material had been boiled or soaked (e.g. Rubus ursinus – treat diarrhea); application of a poultice prepared from the plant material (e.g. Malva parviflora – treat wounds), eating a plant or a plant part (e.g. Rorippa nasturtium-treat liver ailments), bathing the skin with water in which to plant had been boiled or soaked (e.g. Wyethia helenioides-treat sores); rubbing dry ashes of a plant on the skin (e.g. Scripus californicus-treat poison oak); chewing plant parts (e.g. Lomatium californicum-treat pain). The large number of medicinal plants and the variety of their uses and preparations suggest a highly developed pharmacology among these people. However, there was not complete transfer of their knowledge of these plants to the priests at the Missions. Records we summarized of native plant species incorporated into the medicinal herb gardens at the Missions indicate only 34 of the 265 species were grown.

Several reasons could account for the limited transfer of information about medicinal plants from the Native Californians to the priests at the California Missions. These include:

(1) A significant power imbalance existed between the priests and

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the Native Americans.

(2) Priests thought the Native Americans were savage heathens or children who knew nothing.

(3) Language barriers to communication.

(4) Reduction in the availability of medicinal herbs due to the elimination of Native Californians burning of grasslands and the introduction of Spanish livestock.

(5) Knowledge of medicinal plants was a source of power and income for the Native Californian shamans who did not want to share it.

(6) Structural organization in the administration of Missions left little time for direct communication between priests and Native Californians concerning medicinal plants.

The suppression of knowledge about medicinal plants known to indigenous people during the Mission period occurred in other parts of the western hemisphere. A notable example was the burning of the Mayan Codices by Diego de Landa in the Yucatan in 1562 [3]. These codices contained information about various aspects of Mayan history, religious beliefs, family lineages, agriculture, and medicinal plants.

John Edington (2017) examined the value of the use of native plants for medicinal purposes by indigenous people in the Himalayas of Nepal [4]. 46% of the medicinal plants used by local people were characterized as having probable value in the treatment of human ailments based on their biochemical properties. Although 32 percent of the plants studied had no obvious biochemical or pharmacological justification many of them may have been effective as placebos. Only 6 percent of the plants used were considered of questionable value for medicinal purposes. No data was available for 16 percent of the plants investigated. Edington expressed concern about the use of unsound remedies and emphasized the need for the restriction of harmful treatments.

What is needed in relation to the exchange of medicinal plant information between indigenous people and the modern world going forward is a willingness on the part of the modern world to not reject out of hand the value of medicinal plants. The modern world, as Edington has demonstrated, has the capacity to test the efficacy of medicinal plants. At the same time, it is imperative that appropriate compensation be provided for the sharing of indigenous knowledge.

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