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· Native American Ethnobotany - Mexico

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RE: Medicinal Plant Use by Mexican Native Cultures

Heinrich, M., A. Ankli, B. Frei, C. Weimann, and O. Sticher. Medicinal Plants in Mexico: Healers' Consensus and Cultural Importance. *Soc Sci Med* Vol. 47, No. 11, 1998. pp. 1859–1871.

Most ethnobotanical studies focus on uses of plants within one culture. Little emphasis has been placed on cross-cultural plant uses, yet this can be an important factor in seeking potential sources of new medicines. This fascinating and detailed study examines use of medicinal plants by four groups of Mexican Indians: Maya, Nahua, Zapotec, and—for comparative purposes—Mixe, from a study conducted earlier. (In one instance, data is included from a study on the Tzeltal/Tzotzil Indians by ethnobiologists Berlin and Berlin).

With the first three, similar methodology makes direct comparison of results possible. Specialists in medicinal plants were interviewed and use reports for each plant recorded. Uses were grouped into 9–10 disease categories. Plants reported in each use category were ranked by number of reports. The data were analyzed using a method (Trotter and Logan, 1986) based on the concept of “informant consensus” to identify potentially effective medicinal plants which compares the total case number of each ailment with the number of separate remedies for the ailment. Compared to this, F_{ic} gives the relationship between the “number of *user-reports in each category* (n_{ur}) minus the number of taxa used (n_1)” and the “number of *use-reports in each category* minus 1”.

Indigenous forms of medicine are important in Mexico. Lack of biomedical facilities in many communities and distrust of allopathic medicine contribute to this situation. A wide variety of indigenous healers, including herbalists, midwives, spiritists and spiritualists, *hueseros* (bonesetters), *sobadores* (masseurs), *chupadores* (healers who suck out an illness), and traveling salespersons with minimal experience in Western medicine all practice, to greater or lesser degree, in the areas studied. Gastrointestinal disorders and respiratory illnesses are major health problems. Infected wounds and other dermatological diseases are common. The study found cultural differences in the groups studied on how medicinal plants are selected, ranging from a hot-cold classification system to classification based on smell and taste properties and classification based on symbolic characteristics. Ethnographic background and information on medical practices of four cultures are summarized in Table 1.

Table 2 shows the number of medicinal plants and use reports in all use categories, and the degree of informant consensus. Among Maya plants and uses were 320/1549; Nahua 203/816; and Zapotec 445/3611. Table 3 shows

the principal species used to treat gastrointestinal illnesses among the four groups studied, as well as data from the Tzeltal/Tzotzil study. Table 4 shows principal species used to treat dermatological problems among the four groups studied, and Table 5, principal species used to treat respiratory illnesses. Tables 6 and 7 compare individual use reports for various species for a variety of gastrointestinal illnesses among the Nahua and Maya, respectively. The authors point out that “Even if several informants describe a similar use, we know very little about the underlying clinical problems.” However, several plants are used consistently within this category to treat symptoms which likely have the same cause.

Gastrointestinal illnesses and dermatological conditions yielded the largest number of use reports (5,976) and the largest number of plant species used (388). Generally, the informant consensus factor was highest among the Maya and Nahua for the larger categories of use. The authors point out that their findings support those of Trotter and Logan, which also found high informant consensus for gastrointestinal illnesses and problems treated topically, which would include dermatological problems. Guava (*Psidium guajava* and other species of this genus) and American wormseed (*Chenopodium ambrosioides*) are used to treat gastrointestinal disorders by all five ethnic groups for which data is presented. Black sage (*Artemisia ludoviciana* ssp. *mexicana*) and rue (*Ruta chalepensis*) were named in this use category by all four groups in the current study (the fact that they were not reported by Berlin and Berlin may be due to differences in methodology). Several other species were used by three or two of the groups.

The consensus factor is lower for dermatological disorders among the Maya and Nahua. The Zapotecs, however, have a well-defined category of plants used to treat skin disorders, most importantly aloe (*Aloe barbadensis*) and *Tournefortia densiflora*. Only one species is commonly used by three of the four groups for dermatological problems: Mexican arnica or sunflower (*Tithonia diversifolia*). Experiments have shown that its leaf extract is a potent inhibitor of an inflammatory transcription factor. Its widespread use is presumably due to its pharmacologic effect and to its superficial resemblance to European arnica, which European settlers may have used as a model for use of this plant.

Only one plant, *Bougainvillea glabra*, was used by three of the four groups to treat respiratory conditions; however “this may not be due to specific pharmacological effects”.

Parallel use of plant taxa in different cultures arise by coincidence, similar criteria for selecting plants, or shared information on potential usefulness. Sharing information is probably responsible for the parallel use of guava and wormseed, which are widely distributed throughout Mexico. Cultivated plants are important in the medical systems of the four groups studied. Potential medicinal plants pass from one area to another because they are perceived to be effective; they are then cultivated for ready availability.

Underreporting the healers' consensus may occur when a particular plant is used often, but is normally combined with other, varying, species. While voucher specimens for the studies are on deposit at various herbariums and research institutes, the use of non-identified species occurred frequently.

—Mariann Garner-Wizard

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