

## Early JEP Contributions

An abstract of some early JEP contributions, which highlights the research focus that directed the Journal into the future...

The editorial of the first JEP issue in 1979 starts with a quotation by Schultes and Swain: "Peoples whom we have chosen to consider members of less-advanced societies have consistently looked to the Plant Kingdom - without which no animal life on earth could have evolved - for the betterment of life. Should we as chemists, pharmacologists, and botanists - with so many and varied means at our disposal - not take a lesson from them?"

In "Hallucinogenic plants of the Tarahumara" R. Bye (1979, 1: 23-48) dedicates to the problem that the "peyote" described in ethnographic literature on Tarahumara culture belong in fact to different hallucinogenic and medicinal species. "To alter their states of mind, the Tarahumara employ a number of hallucinogenic plants for which they have great respect. All forms of life, including plants, have feelings, according to the Tarahumara. Certain plants, such as the alleged psychotropic cacti and herbs, demand special treatment because they are said to be powerful and could cause harm if offended". Bye reports five Tarahumara plants for the first time as hallucinogenic, including Cactaceous species of the *Coryphantha*, *Echinocereus*, and *Mammillaria* genera. As one of the most important hallucinogenic plants of the central and western Tarahumara Bye describes a *Scirpus* sp. (Cyperaceae) referred to as "bakinoa", "bakbnawa", or "bakana" by the Tarahumara. Alkaloids have been isolated from *Scirpus* spp. but apparently, so far no compound that comes in consideration for the hallucinogenic effects have been detected.

In her contribution entitled "A Bug and a Bonfire" (1979, 1: 103-110) about the spiritual relationship between an etiologic agent and its antidote D. Kamen-Kaye summarizes: "The bug is an insect called coya; the bonfire is made of a grass called guayaca'n. The connection between the two is that an unusual - and potentially fatal - physical harm is done to a human being by the coya, the effects of which must be counteracted by the victim's being passed through the flame of a fire made of guayaca'n. Both cause and cure seem today so bizarre as to suggest a background of folklore rather than fact. In the eighteenth century, however, and in the still virtually unknown areas of South America, both were accepted as fact." But while the identity of the grass could be established as a *Sporobolus* species, the coya remains a mystery: "All things considered must be emphasized in the case of the coya; perhaps in this case science should not be permitted to have the last word. So many contradictions and discrepancies in accounts of its appearance and activity suggest a strong element of folk belief. If this possibility be considered, the coya becomes at once more interesting - and even more baffling. A final comment concerning folk belief: the question of the "cure" by the fire of a certain grass. This suggests the mystical and symbolic

purification by which man can be “saved” by magico-medicinal means, by not only the symbolic flame (which may or may not actually be efficacious) but also by stoic endurance of ritual salvation. In the end, then, science identifies - but it does not always explain. The folk often know the answers, sometimes without knowing why they know them. In this instance, it is the relationship between man, animal and plant” (Kamen-Kaye 1979).

In the early years of the *Journal of Ethnopharmacology* there were many contributions by one of the pioneers and biggest scholars in ethnobotany: Richard Evans Schultes. In his short communication (that takes over 28 pages) and entitled “De Plantis Toxicariis e Mundo Novo Tropicales Commentationes. XIX. Biodynamic Apocynaceous plants of the northwest Amazon“ (1979, 1: 165-192) Schultes dedicates to the Apocynaceae: “It is the family reputedly richest in alkaloids. Consequently, it is to be presumed that such a family would loom significantly in native pharmacopoeias, especially in an area - such as the northwest Amazon - extraordinarily rich in species and genera of the Apocynaceae. Yet, in relation to the representation of the family in this region, the number of species with alleged medicinal properties is disappointingly small”. Mostly uses as fish and dart poisons and topical medicinal uses by different indigenous communities are then reported together with the result of the Dragendorff test for the presence of alkaloids. This is accompanied by a short but accurate botanical description illustrated by scientific drawings.

In “Symbols and selectivity: A statistical analysis of native American medicinal ethnobotany“ (1979, 1: 111-119) D. Moerman points out to the different and paradoxal employments of native American plants as medicine in different cultural settings: “While Pauite and Shoshone are reported to use a decoction of the root of *Berberis repens* (barberry) as an antidiarrhoeal, the Ramah Navaho use the same decoction as a laxative” and “While Mohegan Indians reportedly used an infusion of blossoms of *Humulus lupulus* (hops) as a sedative to relieve nervous tension, the Delaware of Oklahoma use a decoction of leaves of the same plant as a stimulant“.

“Native Americans use a wide range of plants medicinally. Many of these plants have profound meaning to their users. Does this mean, as some assert, that tribal medicine is “all placebo”? Since the essential character of meaning is the arbitrariness of the sign, then insofar as this medicine is symbolic, the plants used medicinally will be a random representation of plants available in nature. Several regression analyses of plants used by native Americans on plants available to them indicate substantial selectivity in plant use.” Moerman concludes: “It is clear that much of medicine (ethno- or otherwise) is symbolic, based on meaning and placebo. But these data indicate substantial selectivity in the medical use of natural species by native American peoples”. “Evidently, native American medical ethnobotany was not only placebo medicine” (Moerman 1979).

Based on indications in several historical sources and the fact that different species of Convolvulaceae have been shown to contain ergot alkaloids M.

Albert-Puleo (1979, 1: 193-195) hypothesizes the presence of ergot alkaloids in Scammony (*Convolvulus scammonia*): “An examination of certain ancient and early modern herbals suggests that Scammony may also contain ergot alkaloids, although such compounds have not yet been chemically isolated. Theophrastus, a Greek who wrote his *Enquiry into Plants* around 300 B.C., mentions Scammony as a plant with medicinal properties but does not elaborate. On the other hand, the Roman Pliny the Elder (23-79 A.D.) discusses the use of Scammony at length. In a fascinating section of his *Natural History*, Pliny asserts that grape vines have “a remarkable property of drawing into themselves the flavour of some other plant”, and continues: “Scammony [is planted among the grape vines] and the wine so obtained is called by a Greek name denoting miscarriage, because it produces abortion. Scammony taken in drink or used as a pessary forces out a dead fetus. Dioscorides, who wrote his Greek Herbal in the first century A.D., likewise recommends Scammony for headache, and also indicates its effects on the uterus, noting: “But ye juice being laid to ye matrix [the uterus] in wool, doth kill ye Embryo” (Albert-Puleo,1979).

In a more pharmacognostic contribution R. Verpoorte et al. (1979, 1: 197-202) dedicate to the sterols of Vietnamese toad venom collected from *Bufo melanostictus* Schneider:

“In several countries toad venoms are used as drugs in the traditional health care. In China toad venom of the local occurring toad species is used and is named Ch’an Su; in Japan this toad venom is known as *senso*. The toad venom is highly toxic to mammals and to frogs and has a digitalis-like action on the heart, due to the presence of bufadienolides. The sterols present in the toad venoms have not been studied as extensively as the bufadienolides. The toad venom was collected by squeezing the venom directly from the parotid glands into a collection vessel. The toads were collected in the suburbs of Hanoi. 40000 toads yielded 1 kg of dry venom”.

“The toad venom was separated into four fractions by means of extraction with solvents of different polarity. The mixture of non-polar sterols present in fraction A was studied by means of gas-liquid chromatography. By comparison with reference compounds these three components were identified as cholesterol, campesterol and  $\beta$ -sitosterol. As minor components stigmasterol,  $\Delta$ -22 campesterol (brassicasterol) were identified” (Verpoorte et al. 1979).

In “Traditional Medicine in Latin America, with particular Reference to Mexico“ C. Zolla (1980, 2: 37-41) gives an overview on the development of traditional medicine by delineating the main common factors, which have determined each particular aspect of traditional medicine:

“For instance, in South America, the dominant culture at that time was that of the Inca society, which had an important degree of medical knowledge. On the other hand, in Central America, the indigenous medical knowledge is undoubtedly representative of the Aztec and Maya cultures. Modern countries throughout America reflect in one way or another the influence of those pre-Hispanic cultures, and it seems that indigenous medical knowledge has been

better preserved in those geographical regions where the local societies achieved substantial agricultural development. The conquest of the continent by Europeans, and the colonial period that followed, resulted in the implantation of a new culture and led to the disappearance of many of the indigenous medical concepts, and also to the beginning of a complex process of combination of ideas – interculturalization that constitutes the starting point for our understanding of contemporary Latin American traditional medicine. Nevertheless, for historical reasons, some areas with minor contact with the new culture preserved more deep-rooted forms of healing. Three factors at least have to be considered historically in order to understand the cultural roots of contemporary Latin American traditional medicine as a whole:

- (1) the indigenous medical basis;
- (2) the cultural influence of 16th century European medicine through the expanding societies of that time;
- (3) the important cultural influence of African contingents in America.

Actual traditional medicine in Latin America is the result of dynamic transformations over 300 years, having undergone the evolution inherent in every cultural process. It is incorrect, therefore, to think about traditional medicine as the static product of a simple combination of historical circumstances; on the contrary, the continuous interaction with the modern world is a major characteristic of this process. Contemporary traditional medicine has thus incorporated many elements of modern medicine through a process of continuous interculturalization.“

“The definition of traditional medicine is by no means an easy task, considering the different viewpoints of contemporary sociology, medicine, and anthropology. Considering that each culture is characteristic of a given society, the “art of healing” constitutes an indivisible part of the culture. The contemporary world has seen the impressive development of different forms of medicine as a result of the predominance of certain cultural patterns, which involve social, economic and political aspects. But in no way does this necessarily imply the disappearance of the local subjacent medical manifestations. The survival of these manifestations is the object of our study” (Zolla 1980).

## References

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