

Editorial

Current Trends in Ethnobotany

Peoples of all cultures have always depended on plants for their primary needs (food, shelter, warmth, medicines, etc.), and have naturally learned diverse applications of plants. In the course of nomadic roaming this knowledge was exchanged with neighboring tribes, friends and foe, and was gradually expanded upon. Thus, plant knowledge has been passed around the world since the beginning of time, and frequently, the actual plants themselves have spread along as well. The investigation of plants and their uses is one of the most primary human concerns and has been practiced by all cultures for tens, if not hundreds, of thousands of years, though it wasn't called 'Ethnobotany' then Ethnobotany is the scientific study of plant lore and agricultural customs of a people. Given their extensive range of knowledge of medicinal plants, indigenous people remain the ultimate resource for retrieving this information for the purpose of application, particularly in modern medicine. Tropical rainforests are particularly endowed with plants possessing curative properties. These richly biodiverse environments provide a veritable trove of flora containing compounds of medicinal value which indigenous people have utilized and benefited from for centuries.

Ethnobotany today - who are the players?

Ethnobotany is a rapidly growing science, attracting people with widely varying academic background and interests. It is still predominantly linked to Economic Botany, and thus pursued to determine the potential economic value of various plants. There is a

romantic allure to the life of an explorer and the promise of finding 'gold' in the form of plants or animals as potential sources for life-saving drugs that could become important in the treatment of serious diseases such as AIDS and cancer. Today, Ethnobotany has become a hot topic.

Scientists working in this field are often sponsored by major pharmaceuticals companies but with much indifference about the well-being of the actual geographical areas from which their laboratory specimens have come and of the indigenous people who may have provided the lead towards 'discovering' their promising plants. More than ever, researchers in pharmacology are looking to tropical rainforests to supply cures to all that ail humanity. The collision of eastern knowledge and western technology has resulted in a unique synthesis of medical belief and practice, along with the development and processing of innovative and effective drugs. The problem modern science faces in benefiting from this incredible wealth of material and information is the problem of access. Many of the traditional methods and general knowledge of medicinal flora is being lost to time. As healers and tribal elders age and die, their knowledge is dying with them. Scientists are searching for ways to preserve this knowledge and to test them against contemporary diseases.

Fewer than 5 % of tropical forest plant species have been examined for their chemical compounds and medicinal value.

This leaves great potential for even more discovery, but also the potential for great loss as rainforests are felled around the globe and unstudied species are lost to extinction.

Ethnomedicine is a sub-field of medical anthropology that deals with the study of traditional medicines, not only those with relevant written sources (e.g., Traditional Chinese Medicine and Ayurveda), but also those whose knowledge and practices have been orally transmitted over the centuries. While the focus of ethnomedical studies is often the indigenous perception and use of traditional medicines, another stimulus for this type of research is drug discovery and development. Ethnomedical investigations have led to the development of important drugs such as reserpine (a treatment for hypertension) podophyllotoxin (the base of an important anti-cancer drug), and vinblastine (used in the treatment of certain cancers)

Modern approach

The application of scientific knowledge relating to bio-resources for human welfare demands data on socio-economic aspects, impact on environment or conservation of biodiversity. Ethics demands preservation of the knowledge base, capacity building among the indigenous people and fair sharing of benefits accruing from commercial use of the indigenous knowledge. Modern scientific approach to the study of ethnobotany demands precision in information, statistical support to data and quantitative or semi-quantitative analysis of field observations.

Precision

Several papers dealing with ethnobotany in some parts of the world mention the traditional uses of the plant very briefly, using words or phrases such as 'edible', 'used as drink', 'is medicinal', 'used in fertility', 'for house building', etc. Such phrases indicate a very broad and vague use of the plant. For medicinal species, elaborate data are needed on symptoms of disease, plant part

used, single drug or mixture, preparation, dosage, frequency, etc. Data are needed on informants' age, experience, approximate number of patients treated, how procured, i.e., from forest, market, etc.

Statistical support

Benefits of statistical or quantitative methods are summarized below:

1. Data are more accurate because from the very start of the field work, statistical methods are employed on age, sex, occupation, etc, of resource persons.
2. Numerical data make analysis easy and precise.
3. False or cooked up data are easily detected and data become more reliable.
4. The above three factors lead to better conclusions, models, forecasts, projections or extrapolations, resulting in more intensive ethnobotanical activity.
5. The above benefits lead to newer approaches, e.g., if a particular forest type is threatened by any ethnobotanical uses, the development officers can be cautioned. Ranking the importance of bio-cultural resources becomes possible. The proposals of conserving certain areas have been strengthened by quantitative data [1].
6. Quantitative evidence of importance of species or dependence of people on certain species can help even in pleading IPR cases.

Information on folk uses is considered more dependable when it satisfies one or more of the following criteria:

1. Same or similar use of a species reported by more than one informant.
2. Same use reported from different locations (i.e., multi-location)
3. Same use reported among different ethnic groups (multi-ethnic) [2]
4. Same use corroborated also from published literature on that area or literature from other regions and countries.

5. Same use recorded on labels of old herbarium sheets or museum specimens.

On the basis of some of these criteria and by assigning different values to each factor, credibility to traditional knowledge through various terms like Reliability Index, Credibility Index, Relative Importance, Fidelity Index or Fidelity Level, Informant Agreement Ratio, Cultural Significance, Use Value, etc, can be ascertained.

For quantification, the following' three approaches have been proposed:

1. *Consensus on information*: If the same use is reported by several persons, and in different locations, it can be termed consensus on information [3].
2. *Subjective allocation*: The researcher allots subjective value (as per his judgment) to a use or a species and builds up data. This is simpler than 1. above, and can be quicker, but has less objectivity.

Total utility

All the uses to which a species or a vegetation patch is put are totalled, and then its value judged. This approach is quick, quite objective, is utility-based, but the main shortcomings are that minor and major uses are rated as equal, and that some theoretically conceived or presumed uses might have been reported and they

may not be in actual practice. For credibility of claims, the Relative Reliability Index Values (RRIV) 1, 2, 3 or 4 should be assigned to factors such as; claim heard from how many persons, in how many different locations, whether corroborated (or not) by patient, details on preparation, dosage, frequency, etc, available or not. The higher the point, the greater was the credibility [4,5].

With this new trend approach, we can hope to enter a next phase - the phase of *objective ethnobotany* - bringing it to a level of a more respectable science. Any science is as good or bad as its practitioners are!

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