



**AN INTRODUCTION TO ETHNOBOTANY AND  
ETHNOBOTANICAL IMPORTANCE OF RAUVOLFIA  
SERPENTINA (L).**

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**Introduction :**

Ethnobotany is the study of how people of a particular culture and region make use of indigenous plants. Since time immemorial the human society has developed in close association, with the plant life (De, 1980 a). plants have influence the culture, thought and economic activity of human beings through the ages (De, 1980 b). The relationship between the indigenous people and their plants surroundings forms the subject of ethnobotany, a science (De, 1968).

Though the term “ethnobotany” was not coined until 1895 by the US botanist Jhon William Harshberger, the history of the field begins long before that. In pythagoreanism which originated in 500 BC refused to eat beans because of the human relationship to it through matter. In A.D. 77, the greek surgeon Dioscorides published “De Materia Medica”, which was a catalog of about 600 plants in the Mediterranean. It also include information on how the greeks used the plants, especially for medicinal purposes. This illustrated herbal contained information on how and when each plant was gathered, whether or not it was poisonous, its actual use, and whether or not it was edible (it even provided recipes). Dioscorides stressed the economic potential of plants. For generations, scholars learned from this herbal, but did not actually venture into the field until after the middle ages due to the inquisition.

In 1542 Leonhart Fuchs, a renaissance artist, led the way back into the field. His “De Historia Stirpium” cataloged 400 plants native to Germany and Austria.

Jhon Ray (1686-1704) provided the first definition of “species” in his “Historia Plantarum”: a species is a set of individuals who give rise through reproduction to new individuals similar to them selves.

In 1753 Carl Linnaeus wrote “Species Planatarum”, which included information on about 5,900 plants. Linnaeus is famous for inventing the binomial method of nomenclature, in which all species get a two part name(genus, species).

The 19<sup>th</sup> century saw the peak of botanical exploration. Alexander von Humboldt collected data from the new world, and the James Cook’s voyages brought back collections and informations on plants from the south Pacific. At this time major botanical gardens were started, for instance the Royal Botanical Gardens, Kew.

Edward Palmer collected artifacts and botanical specimens from people in the North American West(Great Basin) and Once enough data existed, the field of “aboriginal botany” was founded. Aboriginal botany is study of all forms of vegetable world which aboriginal peoples use for food, medicine, textiles, ornaments, etc.

The term “ethnobotany” was first used by a botanist named John W. Harshberger in 1895 while he was teaching at the University of Pennsylvania. Although the term was not used until 1895, practical intrest in ethnobotany go back to the beginning of civilization when people relied on plants for survival.

Other scholars analysed uses of plants under an indigenous/local perspective in the 20<sup>th</sup> century: e.g. Matilda Coxe Stevenson , Zuni plants(1915); Frank Cushing , Zuni foods(1920); KeewaydinoquayPeschel, Anishinaabe fungi(1998), and the team approach of Wilfred Robbins, JP Harrington, and Barbara Freire-Marreco, Tewa pueblo plants(1916).

Beginning in the 20<sup>th</sup> century , the field of ethnobotany experienced a shift from the raw compilation of data to a greater methodological and conceptual reorientation. This is also the beginning of academic ethnobotany. The so-called “father” of this discipline is Richard Evans Schultes even though he did not actually coin the term “ethnobotany”. Today the field of ethnobotany requires a variety of skills: botanical training for the identification and preservation of plant specimens ; anthropological training to understand the cultural concepts around the perception of plants; linguistic training, at least enough to transcribe local terms and understand native morphology, syntax, and semantics.

## **ETHNOBOTANICAL IMPORTANCE OF RAUVOLFIA SERPENTINA**

*Rauvolfia serpentina* (L). Benth ex Kurz (Apocynaceae) commonly known as sarpgandha is an important medicinal plants of Indian subcontinent and South East Asian countries.

**Vernacular Names :**

India :Naakuli, Candrika, Chandramarah(Sanskrit) , Chandra(Bengali), Chhotachand(Hindi), Chivan-amelpodi or Covannamiloori(Tamil), Sarp Gandhi, Patalgandhi(Telegu), Sutranabhu, Patalgaruda, Sutranabhi(Kannada), Dhannerna or Dhanbarua(Oriya), Amelpodi(Gujrati), Phlalganni or phtala-gandi (Telegu), Amalpori, Cuvannaamalpori (Malayalam), Adkai, Chandra (Marathi), Bhungmaraja(Arunachal Pradesh), Ceylon : Acawarya. Java: AkarTikoes, PoelPandak

**Ethnobotanical Uses :**

In the vast rural areas of India, at the first signs of insomnia, melancholia, schizophrenia or more violent mental disorders, used to soak the roots of the plants in rose water and administer it (Sharma, 1958). Use of *Rauvolfia serpentina* against snake bite was also reported (Parinitha *et al.*, 2004; Sankaranarayanan *et al.*, 2010). There are many folk lores about this plant. One of which is that a mongoose would first chew upon its leaves to gain power before combating a cobra. According to another, its freshly ground leaves when applied to the toes could serve as an antidote for snake poison. A third one is that, the mentally challenged person is relieved of his insanity if he eats root (Pandey, 1984). This plant was found to be used very commonly by tribes indicating the authenticity of their usefulness (Saxena *et al.*, 1988; Sarkar *et al.*, 1999). The inhabitants of Macassar use the petioles as an antidote for infusion, decoction and extracts of the roots are employed to increase uterine contraction for expulsion of fetus, to treat painful affections of bowels, diarrhea, dysentery, cholera and colic (Ghani, 1998). Ethnomedical use of this plant to treat circulatory disorders (Ajmalicine), as antihypertensive and tranquilizer (Reserpine, Deserpidine and Rescinnamine) was reported by Fabricant and Farnsworth (2001). Young shoot extract of this plant (ca 10 ml) is given three times daily to cure pneumonia in early stage by the Meche People of Jhapa District, Eastern Nepal (Rai 2004). Juice extracted from the leaves along with the juice of *Andrographis paniculata* and *Azadirachta indica* with honey to cure malaria. In case of snake-bite, juice extracted from leaves taken twice a day for three days. Fifteen grams of roots along with roots of *Cassia tora* and *Holarrhenapubescens* paste applied twice a day for two days. Juice extracted from leaves of *Andrographis paniculata* and *Nyctanthes arbor-tristis* is mixed with *Rauvolfia serpentina* root juice to treat scabies (Mohanta *et al.*, 2006). De-Britto and Mahesh (2007), while exploring the Kani tribal botanical knowledge in Agasthiayamalai biosphere reserve, South India, have reported that the leaves and the flowers of this species are consumed to treat asthma. Local people of Madhupur, Tangail, Bangladesh use *Rauvolfia serpentina* (locally called Do-greek-mi) root and leaf paste to make pills and sun dried to use in malarial fever; the root juice is used during the time of liver pain; the fresh leaf juices are used to prevent eye inflammation (Anisuzzaman *et al.*, 2007). Rural people of Kanyakumari district, India, use the decoction of roots during labour and juice of leaves for removal of opacities of the eye cornea (Raj and Sukumaran, 2008). Roots are chewed

for stomach pain and fever by Khamptis of Arunachal Pradesh, India (Senetal.,2008). Singh(2008)has reported the ethnomedical use of this plant against snake-bite. Garo tribe inhabiting the Madhupur forest region of Bangladesh uses this plant to treat malaria, spleen diseases.

### **Conclusion :**

Ethnobotany is the scientific study of the relationship that exist between people and plants. *R. serpentina* is a major plant species of ethnic use. So far little work has been done to bridge up the vast ethnomedicinal utilization of this plant species and its active principles related to the treatment of various ailments. It is to be noted that the tribal use of this plant species must be verified by further scientific experimentation and this folk lore can be utilized in herbal therapy and drug discovery.

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