

## **Ethnobotanical Observations on some Endemic Plants of Eastern Ghats, India**

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### **ABSTRACT**

The present paper reports ethnobotanical usage of 28 endemic plant species used by the tribes of Eastern Ghats, India. All the species were enumerated with botanical name, family name, vernacular name, habit, habitat and information on ethnic uses.

### **INTRODUCTION**

The Eastern Ghats are isolated hill ranges in Peninsular India, harbours primarily tropical Deciduous vegetation, which represents species of high economic, timber, medicinal potential, lies in 11<sup>0</sup> 30' to 21<sup>0</sup> 0' N Latitudes and 77<sup>0</sup> 22' to 85<sup>0</sup> 20' E Longitudes. Based on geological and tectonic considerations, the Eastern Ghats are formed of four sections (Meher-Homji, 2001): the portion north of the Mahanadi river covering Mayurbhanj and the adjoining territory (Keonjhar, Angul, Jajpur, Balasore districts of Orissa); the portion between the Mahanadi and the Godavari where the mountainous character of the Eastern Ghats is most clearly marked (Phulbani, Boudh, Dhenkanal, Sambalpur, Bolangir, Baragarh, Nayagarh, Ganjam, Gajapati, Rayagada, Koraput and Malkangiri districts of Orissa; Srikakulam, Vizianagaram, Visakhapatnam, East Godavari, West Godavari and Khammam districts of Andhra Pradesh), the third section lies between the Krishna river and the Chennai city along the arcuate eastern margin of the Cuddapah basin. This section includes the Nallamala hills of Kurnool, Prakasham, Mahabubnagar, Veligonda, Palakonda hills of Cuddapah and Nellore districts, Seshachalam hills of Cuddapah and Chittoor districts of Andhra Pradesh. The last section comprises the tract between Chennai and the Nilgiri hills where they join the Western Ghats. Prominent features are the Javadi hills of North Arcot, the Gingee and Kalrayan hills of South Arcot, Pachamalai hills of Tiruchirapalli, Shevaroy and Kolli hills of Salem district (Tamil Nadu) and Biligirirangan hills in Chamrajnagar, Kolar hills and Sandoor hills in Bellary district (Karnataka).

Eastern Ghats is “tors” of geological antiquity and older than Himalayas and Western Ghats. The number of flowering plant taxa occurring in the Eastern Ghats is about 3200 with 98 endemic species (Reddy et al. 2002). Most of the endemic plants in Eastern Ghats show narrow range of distribution. Ethnobotanical studies were carried out in ethnically different groups of Eastern Ghats of Andhra Pradesh and Orissa during 1997 to 2006. This has resulted in the collection of information on

28 endemic plant species used by local ethnic groups namely: Bagatas, Chenchus, Gonds, Kondareddis, Koyas, Lambadas, Nukadoras, Valmiki, Yanadis, Yerukalas of Andhra Pradesh and Kondhas, Gadabas, Sauras, Didayis and Kolhas of Orissa. Of the 28 endemic medicinal plants, only 7 species were included under Red Data Book of Indian Plants (Nayar & Sastry 1987, 1988, 1990). The data are presented here as the outcome of exploration trips conducted over a period of nine years. Voucher specimens were deposited in the Herbarium of Kakatiya University (KUH), Warangal.

## ENUMERATION

Taxa are alphabetically arranged. The botanical name of the species is followed with family name in parenthesis, vernacular name, habit, habitat, information on ethnic uses and notes.

### 1. *Albizia thompsonii* Brandis (Mimosaceae)

*Vernacular Name:* Velugu Chinta

*Habit:* Large Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Skin diseases:** Stem bark paste used as an external application. **Ulcers:** Leaf paste used as an external application.

*Note:* In Red Data Book of Indian Plants it was included under Vulnerable (VU) category. It is found in parts of Anantapur, Cuddapah, Mahabubnagar districts of Andhra Pradesh and Angul, Dhenkanal districts of Orissa.

### 2. *Atylosia cajanifolia* Haines (Papilionaceae)

*Vernacular Name:* Adavi Kandi

*Habit:* Undershrub

*Habitat:* Tropical Moist Deciduous forests

*Uses:* **Food:** Seeds used for curry as a vegetable.

*Note:* In Red Data Book of Indian Plants it was included under Vulnerable (VU) category. It is found in hilly areas of parts of East Godavari, Srikakulam, Visakhapatnam districts of Andhra Pradesh, Gajapati, Kalahandi districts of Orissa and Bastar district of Chhattisgarh.

### 3. *Boswellia ovalifoliolata* Balakr. & Henry (Burseraceae)

*Vernacular Name:* Guggilam

*Habit:* Large Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Scorpion sting:** Resin used as an external application; **Children's diseases:** Gum burnt and fumes spread out in home.

*Note:* It is found in hilly areas of parts of Kurnool, Chittoor, Cuddapah districts of Andhra Pradesh.

#### 4. *Ceropegia spiralis* Wight. (Asclepiadaceae)

*Vernacular Name:* Nimmati gadda.

*Habit:* Tuberous Climber

*Habitat:* Tropical Dry Deciduous forests among grasses

*Uses:* **Indigestion:** A teaspoon of tuber paste taken daily once for three days.

*Note:* In Red Data Book of Indian Plants it was included under Vulnerable (VU) category. It is found in hilly areas of parts of Kurnool, Chittoor, Cuddapah districts of Andhra Pradesh.

#### 5. *Cleome chelidonii* L.f. var. **pallai** V.S. Raju & C.S. Reddy (Cleomaceae)

*Vernacular Name:* Adavi Aavalu

*Habit:* Erect Herb

*Habitat:* Margins of lakes

*Uses:* **Condiment:** Seeds were used as a condiment.

*Note:* It is restricted to Pakhal lake of Warangal district (Reddy & Raju, 2001).

#### 6. *Crotalaria paniculata* Willd. var. **nagarjunakondensis** Thoth. (Papilionaceae)

*Vernacular Name:* Gutta Vempali

*Habit:* Erect Herb

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Eczeema:** Handful of roots crushed with common salt and turmeric (*Curcuma longa*) and extract applied externally.

*Note:* It is restricted to type locality in Nagarjunakonda hill of Nalgonda district.

#### 7. *Curcuma inodora* Blatter (Zingiberaceae)

*Vernacular Name:* Chara Pasupu

*Habit:* Tuberous Herb

*Habitat:* Tropical Moist Deciduous forests

*Uses:* **Swellings due to wounds:** Slightly warmed tuber paste used as an external application.

*Note:* It is found in hills of East Godavari, Khammam, Visakhapatnam and Warangal districts of Andhra Pradesh.

#### 8. *Cycas beddomei* Dyer (Cycadaceae)

*Vernacular Name:* Paireetha

*Habit:* Shrub

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Debility:** It is learnt that people cut the Cycas plant and take out the pith and make it into pieces and used in their diet in case of debility.

*Note:* It is restricted to Seshachalam hills of Chittoor and Cuddapah districts of Andhra Pradesh. In Red Data Book of Indian Plants it was included under Vulnerable (VU) category.

### 9. *Cycas sphaerica* Roxb. (Cycadaceae)

*Vernacular Name:* Potteetha

*Habit:* Shrub

*Habitat:* Tropical Moist Deciduous forests

*Uses:* **Flour:** Pith pieces are used to make 'sago' flour.

*Note:* It is found in northern part of Srikakulam district of Andhra Pradesh and eastern part of Orissa.

### 10. *Decalepis hamiltonii* Wight. & Arn. (Asclepiadaceae)

*Vernacular Name:* Nannari

*Habit:* Climber

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Tonic:** Root extract is taken orally to rejuvenate the body and it is the popular health tonic for rural people.

*Note:* It is found in Rayalaseema districts of Andhra Pradesh.

### 11. *Decaschistia cuddapahensis* Paul & Nayar (Malvaceae)

*Vernacular Name:* Magasiri Gadda

*Habit:* Shrub

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Aphrodisiac:** Half teaspoonful of root paste taken with jaggory (*Saccharum officinarum*) daily once 15 days.

*Note:* It is restricted to Seshachalam hills of Chittoor and Cuddapah districts of Andhra Pradesh.

### 12. *Eriolaena quinquelocularis* (Wight & Arn.) Cleghorn (Sterculiaceae)

*Vernacular Name:* Nara Botku

*Habit:* Small Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Fibre:** Stem bark fibre used as ropes.

*Note:* It is found in Karimnagar and Warangal districts of Andhra Pradesh.

**13. Glochidion tomentosum** Dalz. (Euphorbiaceae)

*Vernacular Name:* Pageri

*Habit:* Medium Sized Tree

*Habitat:* Tropical Semievergreen forests

*Uses:* **Wounds:** Leaf paste applied as an external ointment.

*Note:* It is found in Visakhapatnam, East Godavari districts of Andhra Pradesh and Gajapati, Ganjam, Phulbani districts of Orissa.

**14. Habenaria roxburghii** (Pers.) R.Br. (Orchidaceae)

*Vernacular Name:* Malle Leena Gadda

*Habit:* Erect Herb

*Habitat:* Tropical Moist Deciduous forests

*Uses:* **Wounds:** 10-15 g tubers are crushed with 2-3 g each pepper and garlic. The extract is given orally in snake-bite by Konda Reddis of Khammam district.

*Note:* It is found in Khammam, Karimnagar, Warangal, East Godavari, Visakhapatnam, Kurnool districts of Andhra Pradesh and Salem, Dharmapuri districts of Tamil Nadu (Reddy et al. 2003).

**15. Heterostemma deccanense** (Talb.) Swarup. & Mangaly (Asclepiadaceae)

*Vernacular Name:* Pedda Joola pala

*Habit:* Climber

*Habitat:* Tropical Semievergreen forests

*Uses:* **Stomach ache:** Stem bark juice is used for stomach ache and gas troubles.

*Note:* In Red Data Book of Indian Plants it was included under Endangered (EN) category. It is found in Maredumilli hills of East Godavari and Sukkumamidi hills of Khammam district of Andhra Pradesh (Reddy et al. 2001).

**16. Hildegardia populifolia** (Roxb.) Schott. & Endl. (Sterculiaceae)

*Vernacular Name:* Gali Budda

*Habit:* Small Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Dog bite:** 4-5g of upper epidermis of stem bark removed from finger nails, crushed with equal quantity of garlic (*Allium sativum*) mixed in 100 ml of water, mixture taken twice in a day for three days; **Malaria:** 3-4 teaspoons of stem bark extract taken daily twice for 5 to 7 days.

*Note:* In Red Data Book of Indian Plants it was included under Endangered (EN) category. It is found in Anantapur, Chittoor, Cuddapah districts of Andhra Pradesh and Villupuram, Salem districts of

Tamil Nadu (Reddy, Reddy, & Jadhav, 2001).

**17. Hypericum gaitii** Haines (Hypericaceae)

*Vernacular Name:* Jangli Kaly

*Habit:* Shrub

*Habitat:* Tropical Moist Deciduous forests

*Uses:* **Skin eruptions:** Leaf paste used as an external ointment.

*Note:* It is found in Simlipal Biosphere Reserve of Mayurbhanj district of Orissa.

**18. Memecylon jadhavii** K.N. Reddy, C.S. Reddy & V.S. Raju (Memecylaceae)

*Vernacular Name:* Konda Alli

*Habit:* Shrub

*Habitat:* Tropical Moist Deciduous forests

*Uses:* **Fuel:** Stem branches are used as fuel wood.

*Note:* It is found in Sapparla hills of Visakhapatnam district of Andhra Pradesh (Reddy et al. 2004).

**19. Oryza jeyporensis** Govind. & Krish. (Poaceae)

*Vernacular Name:* Dhani

*Habit:* Erect Grass

*Habitat:* Tropical Moist Deciduous forests

*Uses:* **Food:** Cultivated for its grain by natives.

*Note:* It is found in Biorgumma, Boipariguda areas of Koraput district (Orissa).

**20. Phyllanthus indofischeri** Bennet (Euphorbiaceae)

*Vernacular Name:* Konda Usirika

*Habit:* Small Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Food:** Fruits edible.

*Note:* It is found in Chittoor, Cuddapah, Kurnool districts of Andhra Pradesh.

**21. Pimpinella tirupatiensis** Balakr. & Subram. (Apiaceae)

*Vernacular Name:* Konda Kottimeera

*Habit:* Small Tree

*Habitat:* Tropical Moist Deciduous forests

*Uses: Scorpion sting:* Root paste applied over the bitten area and tied with bandage.

*Note:* It is found in Chittoor and Cuddapah districts of Andhra Pradesh.

## 22. *Premna calycina* Haines (Verbenaceae)

*Vernacular Name:* Naguru

*Habit:* Small Tree

*Habitat:* Tropical Moist Deciduous forests

*Uses: Stomach ache:* 4-5 teaspoons of stem bark decoction taken twice in a day.

*Note:* It is found in Mayurbhanj, Angul, Nayagarh districts of Orissa.

## 23. *Pterocarpus santalinus* L.f. (Papilionaceae)

*Vernacular Name:* Erra chandanam, Raktha chandanum.

*Habit:* Large Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses: Diabetes:* A pinch of stem bark powder taken with a cup of hot water daily once to till cure.

*Note:* It is found in Chittoor and Cuddapah districts of Andhra Pradesh.

## 24. *Rhynchosia beddomei* Baker (Papilionaceae)

*Vernacular Name:* Adavi Kandi

*Habit:* Undershrub

*Habitat:* Tropical Dry Deciduous forests

*Uses: Abortifacient:* Half cup of leaf decoction taken twice in a day for two days.

*Note:* In Red Data Book of Indian Plants it was included under Vulnerable (VU) category. It is found in parts of Cuddapah, Chittoor, Anantapur districts of Andhra Pradesh.

## 25. *Shorea tumbergaia* Roxb. (Dipterocarpaceae)

*Vernacular Name:* Thamba Jalari

*Habit:* Large Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses: Ear ache:* Leaf juice is used as ear drops for children.

*Note:* It is found in parts of Chittoor, Cuddapah, Nellore districts of Andhra Pradesh and Chengalpattu district of Tamil Nadu.

## 26. *Syzygium alternifolium* (Wight) Walp. (Myrtaceae)

*Vernacular Name:* Thamba Jalari

*Habit:* Large Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Diabetes:** One teaspoon dried fruit powder taken with honey daily once to 15 days. **Dry cough:** Leaves fried in cow ghee and used as a curry.

*Note:* It is found in parts of Chittoor, Cuddapah, Kurnool districts of Andhra Pradesh.

## **27. Terminalia pallida** Brandis (Combretaceae)

*Vernacular Name:* Tella Karakkaya

*Habit:* Large Tree

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Dysentery:** 10-12 grams of fruit powder taken twice in a day. **Piles:** 10-15 ml of fruit decoction taken daily once to till cure.

*Note:* It is found in parts of Kurnool, Chittoor, Cuddapah districts of Andhra Pradesh.

## **28. Torenia indica** Saldanha (Scrophulariaceae)

*Vernacular Name:* Chinna Mogakura

*Habit:* Erect Herb

*Habitat:* Tropical Dry Deciduous forests

*Uses:* **Ear ache:** Leaf juice is used as ear drops for children.

*Note:* It is found in parts of East Godavari, Khammam districts of Andhra Pradesh.

The investigations revealed the medicinal properties of 28 endemic species of 27 genera belonging to 20 families. Papilionaceae is the dominant family (4 spp.), followed by Asclepiadaceae, Sterculiaceae, Euphorbiaceae and Cycadaceae, each with two species. The other families contributed with one species each. Among all the species, trees are found to be more (11) followed by herbs (7), shrubs (7) and climber (3). Out of 28 species, seven species are included in Red Data Book of Indian Plants (Botanical Survey of India).

## **DISCUSSION AND CONCLUSION**

The present work is the result of intensive systematic ethnomedicinal survey conducted in three states of Eastern Ghats region. All the 28 species of endemic plants of ethnobotanical interest are recorded after critical screening with the available literature. These species are recommended for further phytochemical and pharmacological studies, which might result in the discovery of new drug molecules. Since these plant species are being exploited from the forest areas of Eastern Ghats, there is an urgent need for their conservation before they get extinct.

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## REFERENCES

- Meher-Homji, V.M. 2001. *Bioclimatology and Plant Geography of Peninsular India*. Scientific Publishers, Jodhpur, India.
- Reddy, C.S., M.S.R. Murthy & Dutt. C.B.S. 2002. Vegetation Diversity and Endemism in Eastern Ghats, India. Proceedings of National Seminar on Conservation of Eastern Ghats, EPTRI, Hyderabad.
- Nayar, M.P. & A.R.K. Sastry 1987. *Red Data Book of Indian Plants*. Vol. 1. Botanical Survey of India, Calcutta.
- Nayar, M.P. & A.R.K. Sastry 1988. *Red Data Book of Indian Plants*. Vol. 2. Botanical Survey of India, Calcutta.
- Nayar, M.P. & A.R.K. Sastry 1990. *Red Data Book of Indian Plants*. Vol. 3. Botanical Survey of India, Calcutta.
- Reddy, C.S. & Raju, V.S. 2001. A new variety of *Cleome chelidonii* (Cleomaceae). *Journal of Economic and Taxonomic Botany*, 25: 217-218.
- Reddy, K.N., Reddy, C.S., & Jadhav, S.N. 2001. *Heterostemma deccanense* (Talb.) Swarup & Mangaly (Asclepiadaceae): An endangered and endemic taxon in Andhra Pradesh. *The Indian Forester* 127: 1403-1404.
- Reddy, K.N., Reddy, C.S. & Raju, V.S. 2003. Ethnobotanical observation on some Orchids of Andhra Pradesh. *Journal of Non-Timber Forest Products* 9: 146-147.
- Reddy, K.N., Reddy, C.S. & Raju, V.S. 2004. *Memecylon jadhavii* : A new species from Andhra Pradesh, India. *Journal of Economic and Taxonomic Botany*, 28: 165-166.