

# Lesser Known Ethnomedicinal Plants of Alagar Hills, Madurai District of Tamil Nadu, India

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## Abstract

The ethnobotanical uses of plant species viz. *Embelia basal* (Roxb.) DC., *Gymnema lactiferum* R.Br., *Ophiorrhiza mungos* L., and *Syzygium alternifolium* (Wight) Walp. were recorded from Alagar hills of Madurai district, Tamil Nadu.

## Introduction

During the recent ethnobotanical investigation of Alagar hills, Madurai district of Tamil Nadu, the authors have documented many plant species used to treat local ailments by various communities inhabiting in the area. The earlier studies on the ethnomedicinal plants of Alagar hills (Ganesan *et al.*, 2007) are not reported these plant species and their uses hitherto in this area. The present communication provided descriptions, ethnobotanical uses, distribution limits, phenology and photographs to facilitate the future identification and conservation measures for the respective plant species.

## Study area

The study area of Alagar hills lies approximately between 77°30' and 78°20' longitude and 10°05' – 10°09' latitude. The elevation of the area of investigation ranges from 1000 to 3000 feet above sea level. Variations in the altitude and rainfall have a bearing on the vegetation in general. The floristic divisions of the area of investigation consist of dry deciduous forest, deciduous thorn forest, evergreen and grasslands

## Methods

Ethnomedicinal information was gathered by interviewing the local medicine man and persons with informal interviews a thorough knowledge of plants. The information gathered was confirmed by different groups of local inhabitants dwelling in different places of the area of investigation. The methodology of previous workers was adopted (Jains and Goel, 1995). The data was meticulously entered in a field notebook. The voucher specimens were collected and identified by referring to standard floras (Gamble, 1957; Matthew,

1981; Nair and Henry 1983; Henry *et al.*, 1987; Henry *et al.*, 1989; Matthew, 1991). All the voucher plants were preserved in the form of herbarium specimens, deposited in the Centre for Research and PG Department of Botany, The Madura College (Autonomous), Madurai, Tamil Nadu-625011.

## Results

### *Embelia basal* Burm.

*Description:* This climbing shrub, has to be differentially identified from *Embelia tsjeriam-cottam*. The roots are brownish gray, with hairy reddish rootlets. The stem is whitish gray, studded with lenticels, with a mature girth of 45-72 cm. Leaves thick, elliptic, lanceolate 6-10 cms long and 2-4 cm broad, alternating, acuminate entire, perfectly glabrous and petiole 1.0 cm - 0.8 cm. Midrib prominent, inflorescence axillary or on mature stems or older leaf scar usually basal part of branches, spike up to 8 cm in long, pubescent. Flowers pentamerous, minute, pinkish. Fruit a berry, 2.4-1 cm across, subglobular tipped with style, smooth, succulent, deep red in colour, in dry condition with wrinkles with loss of calyx (Fig. 1).



Fig. 1. *Embelia basal* (Roxb.) DC.

*Distribution:* Southern Peninsular India, Tamil Nadu (endemic).

*Flowering Phenology:* Flowering in August to October; Fruiting: October onwards.

*Medicinal uses:* Dry fruit powder is used to oral contraceptive for prevent the pregnancy. Fresh fruits are eaten as raw for rheumatoid inflammation.

*Specimen examined:* Alagar hills, way to Natham valley, S. Karuppusamy and G. Muthuraja, 26638.

***Gymnema lactiferum* R.Br.**

*Description:* A large climber with spirally twisted stems, lenticellate; branchlets glabrous.

Leaves opposite, broadly ovate-lanceolate or ovate-elliptic, thick, coriaceous, darken above, apex abruptly acuminate. Flowers large, in crowded axillary cymes. Ovary 2-carpels, style free to near the top. Fruit double follicle, seeds ovate, margined, ending in a silky coma (Fig. 2).



Fig. 2. *Gymnema lactiferum* R.Br.

*Distribution:* Peninsular India, Sri Lanka.

*Flowering:* July – August. *Fruiting:* August – November.

*Medicinal uses:* Leaves and latex are used to treat septic wounds. Fresh leaves pasted with water taken orally for constipation and intestinal ulcers. Leaves along with pepper seed powder is administered orally for intestinal worms.

*Specimen examined:* Alagar hills, way to Nupuragangai on the road sides, 550 m msl, 15-07-2009, S. Karuppusamy & K.M. Rajasekaran 24535.

*Taxonomic note:* The genus *Gymnema* is closely related to *Bidaria* and included in it by most authors. *Bidaria* can easily be recognized by pubescent internodes, bifarious with umbel like cymes. J.D.Hooker in Fl. Brit. India 4; 31. 1883 treated *Bidaria* (Rndl.) Decne and *Gymnema* R.Br. as congeneric under the latter name. However, recently Huber (in Abeywick., Rev. Handb. Fl. Ceylon 1: 47. 1973) reinstated the genus *Bidaria* by clearly pointing out the generic distinctions.



## **Ophiorrhiza mungos L.**

*Description:* This is a half-woody, erect, smooth, plant up to 30 centimeters in height. The leaves are very thin, elliptic or elliptic-lanceolate, 4 to 12 centimeters long, 2 to 6 centimeters wide, and pointed at both ends. The cymes are flat-topped, 2 to 7.5 centimeters in diameter, and smooth or hairy; their branches are subumbellate and very spreading. The calyx-teeth are very short. The corolla is white and smooth, with very short, obtuse lobes which are keeled at the back. The pedicelled capsules are 2 to 5 millimeters in diameter. The seeds are many, minute, and angled (Fig. 3).



Fig. 3. *Ophiorrhiza mungos* L.

*Flowering:* April – June. *Fruiting:* June – August.

*Distribution:* India, Indo-china, Java and Philippines.

*Medicinal uses:* Leaves and roots used to treat poisonous bites and external tumors. Roots extensively collected for medicinal purposes by local medicine man.

*Specimen examined:* Alagar hills, on the way of Gnetum falls stream banks, S. Karuppusamy and G. Muthuraja, 26542.

***Syzygium alternifolium* (Wight) Walp.**

*Description:* Deciduous tree, up to 12 m tall; bark fissured, branchlets pale, glabrous. Leaves alternate, 10-15 x 7-10 cm, glabrous, midrib thick, prominent lateral nerves parallel, numerous, petiole up to 4.5 cm long,

reddish. Cymes axillary and lateral, sometimes form the old branches on the leaf scars. Flowers yellowish white, sweet scented. Berry globose, dark purple to light purple or yellowish pink (Fig. 4).



Fig. 4. *Syzygium alternifolium* (Wight) Walp.

*Flowering:* March – April. *Fruiting:* April – June.

*Distribution:* This tree is endemic to Southern India. It was reported from hilly areas of Andhra Pradesh (Gamble, 1919; Pullaiah *et al*, 2007), Karnataka (Saldanha, 1996) and northern districts of Tamil Nadu (Chitra, 1983; Britto *et al*, 2008). The present report of its occurrence is new to the flora of Alagar hills of southern Eastern Ghats, Madurai district of Tamil Nadu.

*Medicinal Uses:* Bark is used to treat the external wounds. Unripe fruits are eaten for stomach pain due to indigestion. Seeds largely collected by local people to prepare antidiabetic herbal powder mix with *Gymnema sylvestre* leaves. Ripe fruits are edible.

*Specimen examined:* Alagar hills, way to the Natham valley, 700 m msl, 25-2-2009, S. Karuppusamy & G. Muthuraja 27683.

*Taxonomic Note:* Pullaiah *et al.*, (2007) and Mohan and Laksmi (2000) noted that the tree is associated with *Terminalia pallida* Brandis, *Shorea tumbuggaia* Roxb., *Boswellia ovalifoliolata* Balakr. & Henry and *Pterocarpus santalinus* Roxb. In Alagar hills, the tree is associated with *Terminalia chebula*, *Shorea roxburghii*, *Buchanania axillaris*, and *Gareya arborea*. Monkeys were identified the major herbivore on this tree and the main dispersal factor of the species.

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