Orchids of Talakona Sacred Grove, Andhra Pradesh, India

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Abstract: Talakona, a virgin sacred grove tropical forest located in the state of Andhra Pradesh, India, harbors a good number of rare orchids. Out of thirteen species recorded, 62% were terrestrials, rest 23% occupied by Epiphytes and 15% by Lithophytes. The present study shows that the thirteen species are additional to Habenaria roxburgii, Vanda spathulata, Geodorum densiflorum which were previously reported by Savithramma in 2005 from Talakona forest. The most common species were Vanda testacea, Geodorum densiflorum, Habenaria roxburgii, Eulophia graminea.

Key words: Orchids • Talakona • Eastern ghats

INTRODUCTION

Orchids come under the family Orchidaceae and are monocotyledonous plants and known for its floral morphology, evolution with other life forms and for its floral and morphological beauty. All talks about orchids are because they are the top favourite ornamental flower worldwide and also for its medicinal and horticultural uses. They are characterized by distinct pollination mechanism, association with unique fungal partners (Mycorrhizae) and microscopic seeds. Orchidaceae includes about 788 genera [5] and 24,500 species [1] and is the second largest family of flowering plants in the world. In India orchids are represented by 1,129 species and 184 genera and show maximum diversity in the Eastern Himalaya, including the North-Eastern region, Western Ghats, eastern Himalaya and eastern part of Western Himalaya (Kumaon Himalaya) [14]. Misra [16] listed 1,331 taxa from the current political boundary of India.

Orchids in Andhra Pradesh have not been well documented. Pullaiah [9] reported 33 genera belonging to 66 species to be occurring in the state of Andhra pradesh. Reddy [12] reported 190 orchids from the state of Andhra Pradesh. Jonathan and Raju [8] studied the terrestrial and epiphytic orchids of Eastern Ghats. Reddy [13] published an article on ethnobotany of orchids of Eastern Ghats. Madavachetty [6] published the flora of Chittoor district, Andhra Pradesh and documented significant plant resources encountered in Talakona sacred grove. There is no study available on the orchids of Talakona except Savithramma [11]. Talakona harbors good diversity and endemism. These hills are listed under 11th Hot Spots of Indian flora and this forest area is a part of one of the micro Hot Spots of endemism [7, 11]. Hence, the present work on Talakona sacred groove has immense significance as the study area is part of one of the endemic centres Tirupati-Kadapa hills and registered with heavy biotic interference.

MATERIALS AND METHODS

Study Site: The study was conducted in Talakona sacred grove forest which extends over a 50 ha area and is a part of the endemic centre-Tirupati-Kadapa hills located in Chittoor district of Andhra Pradesh state, India.

Topography and Soils: The study area is a hilly terrain with an altitude range of 400-900m a.m.s.l. The study area consists of quartzite rock and mostly sandy black soils. The pH is slightly acidic. The colour of forest soil in the surface horizons varies from black to dark brown and the surface soil generally has numerous fine roots of plants, which may penetrate up to 20-30cm depth. Silt soil is present in lower elevations and clayey-loam in higher elevation (above 600m MSL).

Climate: In the study area, the average monthly minimum temperature varies from 18 °C to 22.7 °C, the least being in January; and the average monthly maximum temperature
varies from 33.4 °C to 36.2 °C, with the highest in May. The average minimum and maximum relative humidity is 48% and 79%, respectively. The annual rainfall varies between 569.4 and 1230.8mm, bulk of it received during June-September.

**Data Collection:** The vegetation of the grove represents moist deciduous vegetation with peripheral scrub. The grove under study was explored for a period of 12 months during 2008-09. Twenty four exploration trips were conducted. Barring common species, all other orchid species encountered in the grove areas were collected either at flowering or fruiting stage. Every attempt has been made to study the habit, habitat, colour of the flower, flowering and fruiting seasons and frequency of distribution of the species. The specimens were collected in well-tied thick polythene bags. Herbarium for the collected specimens are deposited in Sri Krishnadevaraya University herbarium. Every specimen was carefully studied by dissecting the floral parts of duplicate specimens under a binocular microscope. Provisional identification was made following ’Flora of the Presidency of Madras’ [2] and other regional and local floras [2, 3, 4, 6, 15] following Benthem and Hooker classification. The identifications were further confirmed after a critical perusal of monographs and other allied material and matching with the authenticated specimens housed in Sri Krishnadevaraya University herbarium (SKU), Anantapur and Madras herbarium (MH), Coimbatore.

**RESULTS AND DISCUSSION**

In the study 8 Terrestrials, 3 Epiphytes and 2 Lithophytes were recorded. Dominance of Terrestrials can be because of the deciduous type of forest, Rainfall, elevation, canopy etc… *Vanda spathulata* earlier reported by Savithramma [11] was not found. All orchid species are protected for the purpose of international commerce under CITES (Convention on the international trade in endangered species of wild flora and fauna) as potentially threatened and endangered in their natural habitat (www.cites.org) [11]. In Talakona Heavy anthropogenic effects are seen during the Shiva temple festivals and also due to collection of forest products, illegal collection of endemics like *Pterocarpus santalinus* L.f. (Red sanders) are seen. Orchids are mainly collected for medicinal purposes by locals and Tribes. Huge sacred groves like Talakona can be best conserved through community based management.

**List of Species in Talakona**

Genus: Bulbophyllum Thouars

1. *Bulbophyllum kaitiense* Rchb.f. [Lithophytic].
   Basionym: *Cirrhopedalum nigherrense* Wight.
   Genus: *Dendrobium* Sw.

2. *Dendrobium herbaceum* Lindl., [Epiphytic].
   Basionym: *Callista herbacea* (Lindl.) Kuntze.
   Genus: *Eulophia* R. Br. ex Lindl.-wild coco

   Basionym: *Graphorkis graminea* (Lindl.) Kuntze.

4. *Eulophia spectabilis* (Dennst.) Suresh [Terrestrial].
   Basionym: *Wolflia spectabilis* Dennst.
   Genus: *Geodorum* Jacks.

5. *Geodorum densiflorum* (Lam.) Schltr., [Terrestrial].
   Basionym: *Limodorum densiflorum* Lam.
   Genus: *Goodyera* R. Br.

6. *Goodyera procera* (Ker Gawl.) Hook., [Lithophytic].
   Basionym: *Neottia procera* Ker Gawl.
   Genus: *Habenaria* Willd.

   Basionym: *Plantaginorchis plantaginea* (Lindl.) Szlach.

   Basionym: *Orchis roxburghii* Pers.

   Basionym: *Habenaria barbata* Wight ex Hook.f.

    Basionym: *Leptorkis deflexa* (Hook.f.) Kuntze.
    Genus: *Malaxis* Sol. ex Sw.

11. *Malaxis rheedii*, Sw. [Terrestrial]
    Basionym: *Malaxis versicolor* (Lindl.) Abeywick.
    Genus: Vanda W. Jones ex R. Br.

12. *Vanda tessellata* (Roxb.) Hook. ex G.Don [Epiphytic].
    Basionym: *Epidendrum tessellatum* Roxb.

    Basionym: *Aerides testacea* Lindl.
REFERENCES