

PHALAENOPSIS MYSORENSIS SALDANHA (ORCHIDACEAE): NOTE ON DISTRIBUTION AND ECOLOGY

**Samantha Suranjan Fernando^{1*}, I.A.U.N. Gunatilleke², Samantha Gunasekara³, C.V.S. Gunatilleke²
and U.T.I. Abewardana¹**

¹Post Graduate Institute of Science, University of Peradeniya, Peradeniya, Sri Lanka.

²Department of Botany, Faculty of Science, University of Peradeniya, Peradeniya, Sri Lanka.

³Biodiversity Protection Unit, Sri Lanka Customs, P.O. Box 518 Bristol Street, Colombo 1, Sri Lanka.

Accepted 8 October 2008

ABSTRACT

Phalaenopsis mysorensis Saldanha, an orchid species endemic to South India has recently been recorded in Sri Lanka from a few isolated hill forests in the northern and eastern dry lowlands. The minute habit, small white flowers and short unbranched peduncle distinguishes *P. mysorensis* from its congener *P. deliciosa*, the only recorded *Phalaenopsis* in Sri Lanka. The habit and habitat of the species are described based on recent observations and collections.

Key words: Orchid, *Kingidium*, isolated hills, Sri Lanka, India

INTRODUCTION

Phalaenopsis Blume, represented by about 40 species, is a tropical Asiatic genus mainly distributed in Indonesia and the Philippines (Seidenfaden and Wood, 1992). All species are small to medium sized epiphytes with flattened roots, which are sometimes photosynthetic. A few leaves are clustered together on a reduced stem. The inflorescence is either short or long and sometimes rather flattened. Flowers are small to medium in size (Seidenfaden and Wood, 1992; Dressler, 1993). *Phalaenopsis deliciosa* Reiehb. (*Kingidium deliciosum* (Reiehb.) Sweet), the only other species previously recorded from Sri Lanka belongs to this genus (Jayaweera, 1981). Although Christenson (2006) has mentioned that this species occurs in Sri Lanka, information on its distribution and ecology has not been recorded.

MATERIALS AND METHODS

After the identification of the species by using type description (Saldanha, 1974), information on its distribution and population size was recorded over a period of four years (2000 – 2004), prior to collection of voucher specimens. Its phenology was studied in three different isolated hills from 2003 - 2005. Voucher specimens were deposited in the National Herbarium Peradeniya, Sri Lanka.

Phalaenopsis mysorensis Saldanha, Indian Forester 100: 571. t.3. 1974; Saldanha and Nicolson, Flora of Hassan District Karnataka 842. 1976; Abraham and Vatsala, Introduction to orchids, 464. 1981; Christenson, *Phalaenopsis* a monograph, 223. 2001; Fernando and Ormerod, *Rheedea* 18(1):19. 2008 Type: India, Karnataka state, Hassan District, Vanagur, *Saldanha 15915* (JCB).

Kingidium mysorensis (Saldanha) Sathish, Catalogue of Indian Orchids 95. 1994; Sathish and Manilal in Manilal and Sathish, Orchid Memories, 199. 2004.

Kingidium niveum Sathish in Sathish and Manilal Catalogue of Indian Orchids 53-57. 1994; Sathish and Manilal in Manilal and Sathish, Orchid Memories 199. 2004.

Epiphytic herb. Roots flat, green, 2.5 mm broad and tapering. Stem short, 4.5 - 6.5 mm. Leaves 2, rarely 3 or 4; oblong elliptic, 2.3 - 4.6 x 0.8 - 1.5 cm; fleshy, coriaceous, base acute narrowed into a short petiole, apex acute unequally bilobed, blade with numerous parallel veins with inconspicuous cross veins. Inflorescence 1.4 - 2 cm long; lateral raceme, green with purplish dots. Floral bracts 1 mm, entire and acute. Pedicel with ovary 2 - 4 mm long. Flowers 1 - 4, white, 6 - 7 mm across; dorsal sepal 4 x 2.5 mm, obovate, 5-veined, obtuse; lateral sepals 4.40 x 3.5 mm, broadly ovate, slightly falcate, 5-veined sub acute; petals 3.6 x 2.5 mm, obovate, slightly falcate, 5-veined,

* Corresponding author's email: sasurh@gmail.com

obtuse; lateral veins in all petals and sepals not reaching the tip; lip three lobed; lateral lobes 4.6 x 1 mm, erect, deep yellow, margin slightly toothed, lamellate; lamella single, thick, fleshy, yellow and sub entire; mid lobe 4.6 x 3 mm, base thick, triangular, fleshy with a liner callus, warted within, sub entire or obscurely toothed.

Disc with two pairs of asymmetrical antennae that cover the narrow groove of the mid lobe. Column 2 mm long slightly winged with a 2 mm long foot. Operculum 2 celled. Pollinia 0.8 x 0.4 mm, 4 in 2 unequal pairs on a stipes, attached to a triangular viscidium. Capsule 1.3 x 0.4 cm long, oblong (Fig. 1).

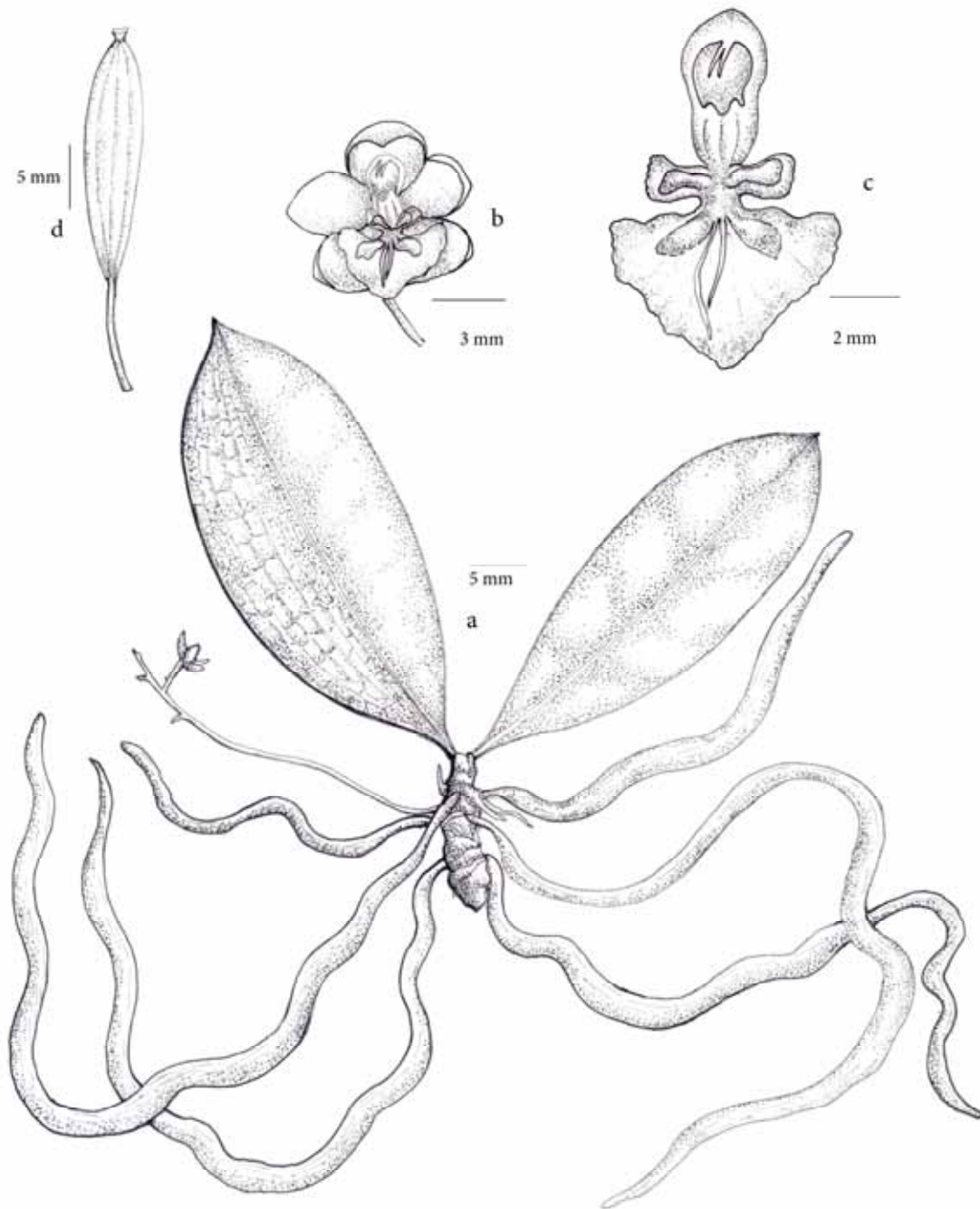


Figure 1. *Phalaenopsis mysorensis* Saldanha (a) mature plant, (b) a single flower, (c) lip and column, (d) young fruit.

Specimens collected: SRI LANKA, **Monaragala District:** Monaragala, Uppukotha Nov. 2004, S.S. 2004-01, S.S. 2004-02, S.S. Fernando and U.T.I Abewardhana (PDA); Maragala Nov. 2004 S.S. Fernando (PDA).

Distribution: *Phalaenopsis mysorensis* is found in the wet and moist vegetation in summit forests of isolated hills above 600 m in the Intermediate zone and Dry zone. Anuradhapura District: Ritigala Strict Nature Reserve (720 m). Kurunegala District: Doluwakanda Forest Reserve (620 m) and Ampara District: Kokagala (660 m). Specimens were collected only from Maragala and Uppukotha hill ranges (1000 - 1100 m) in Monaragala district.

The preferred habitat of the species is tree trunks and small branches covered by mosses and liverworts in wind swept, stunted vegetation seasonally covered by mist. No observations have been made on lithophytic growth.

In Ritigala (760 m), the most common host species are *Memecylon umbellatum* Burm. f. and *M. capitellatum* L. (Melastomataceae), in Dolukanda (600 m) on *Balanocarpus brevipetiolaris* (Thw.) Alston (Dipterocarpaceae) and in Monaragala (1100 m) on *Eugenia rotundata* Trimen (Myrtaceae) and *Cullenia* sp. (Bombacaceae).

So far, this species has not been recorded from the mid or high elevation Wet zone forests in Sri Lanka, which also have wet, misty, windswept microhabitats similar to those in the Dry and Intermediate zone hill tops.

In India, it is distributed in Kerala state in the districts of Trivandrum, Palghat, Thrissur and Wayanand; and in Karnataka state in the districts of Hassan and Trichur (Saldanha, 1974; 1976; Sathish Kumar and Manilal, 1994; Sathish Kumar and Manilal, 2004).

In Sri Lanka, flowering and fruiting have been recorded from October to March coinciding with the North-East monsoon. In the dry season (April to September), leaves dry out, become paler and are shed, when only the flat roots and tiny stem are visible. Roots remain green and photosynthetic. In the next rainy season, new leaf shoots appear. During the dry period the plants can be misidentified as some other leafless orchid species such as *Taeniophyllum* sp. or *Cheiloschista* sp.

This unique phenological condition is characteristic for some Himalayan subgenera such as *Aphyllae*, *Parishianae* and *Proboscidioides*, which are subjected to extreme wet and dry conditions annually. As a water conservation measure, they shed their leaves during the drought period (Christenson, 2001). However, *P. mysorensis* along with its other Sri Lankan congener, *P. deliciosa* belong to the subgenus *Phalanopsis*. Such phenological conditions have not been recorded in the above subgenus. In these hill tops, cool but extreme desiccating conditions prevail during the dry period of the South-West monsoon. However, in the North-East monsoon it is exposed to very much wetter conditions.

Phalaenopsis mysorensis was previously known to be endemic to Karnataka and Kerala states of India (Abraham and Vatsala, 1981; Sathish Kumar and Manilal, 1994; Christenson, 2001, 2006; Sathish Kumar and Manilal, 2004).

In Sri Lanka this species has an unusually fragmented distribution pattern restricted to a few isolated hill tops. The major threat to the species is death resulting from felling of host trees.

ACKNOWLEDGEMENTS

We are grateful to the following: Dr. Siril Wijesundara, Director General National Botanic Gardens; Curator and staff of the National Herbarium Peradeniya, for permitting the use of reference specimens; Dr. J. J. Wood, Orchid Herbarium, Kew; Dr. E. A. Christenson in Florida, USA and Dr. S. C. Kumar, Tropical Botanic Garden and Research Institute, India for verifying the identification of the species; Mrs. S. M. Goonatilleke for illustrating the plant; Mrs. C. Seneviratne for proof reading the manuscript; anonymous reviewer for giving constructive criticisms on the manuscript. This species was recorded while conducting a larger study on "Biodiversity on selected hills in the lowland penepain of Sri Lanka", funded by the National Science Foundation, Sri Lanka (Grant no. RG/2003/BM/01).

REFERENCES

- Abraham, A. and Vatsala, P. (1981). *Introduction to Orchids with Illustrations and Descriptions of 150 South Indian Orchids.*

- Tropical Botanic Gardens and Research Institute, Trivandrum, India. Pp. 533.
- Christenson, E.A. (2001). *Phalaenopsis: A monograph*. Timber Press. Oregon, USA. Pp 330.
- Christenson, E.A. (2006). Notes on Phalaenopsis. *Australian Orchid Review* **71**(1): 34-35.
- Dressler, R.L. (1993). *Phylogeny and Classification of the Orchid Family*. Cambridge University Press. Pp. 143-144.
- Fernando, S.S. and Ormerod, P. (2008). An Annotated Checklist of the Orchids of Sri Lanka. *Rheedea* **18** (1): 1-28.
- Jayaweera, D.M.A. (1981). Orchidaceae In: M.D. Dassanayake and F.R. Fosberg (Eds.), *A Revised Handbook to the Flora of Ceylon II*. Amerind Publishing Co., New Delhi. Pp. 5-368.
- Saldanha, C.J. (1974). Three new orchids from southern India. *Indian Forester* **100** (9): 566-572.
- Saldanha, C.J. (1976). Orchidaceae. In: C.J. Saldanha and D.H. Nicolson (Eds.), *Flora of Hassan district, Karnataka*. New Delhi. Pp. 809-855.
- Sathish Kumar, C. and Manilal, K. (1994). *A Catalogue of Indian Orchids*. Bishen Singh Mahendra Pal Singh. Dehra Dun, India. Pp. 162
- Sathish Kumar, C. and Manilal, K. (2004). Orchids of Kerala. In: K.S. Manilal and C. Sathish Kumar (Eds.), *Orchids Memories: A tribute to Gunner Seidenfaden*. Mantor Books and Indian Association for Angiosperm Taxonomy, India. Pp. 197-198.
- Seidenfaden, G. and Wood, J.J. (1992). *The orchids of Peninsular Malaysia and Singapore*. Olsen and Olsen, Fredensborg. Pp. 667.

