

## Promising Wild Orchids of Andaman and Nicobar Islands and their Conservation

**KN Shiva<sup>1</sup>, Sujatha A Nair and RP Medhi**

*Division of Horticulture and Forestry, Central Agricultural Research Institute, Port Blair-744 101 (Andamans)*

*<sup>1</sup>Indian Institute of Spices Research, Calicut-673 012 (Kerala)*

Andaman and Nicobar group of islands are one of the three major habitats of orchids in India. A great diversity is observed in the flora of orchids, growing wild in the territory. Considering its importance, a survey was conducted in some potential forest areas of these islands and a germplasm collection of about twenty species of orchids made over a period of three years. Some of the promising species have been listed along with its description, status, occurrence and importance in this paper. The collected germplasm will be very useful in the breeding programme, besides ornamental values.

**Key words :** Andaman and Nicobar Islands, Conservation, Occurrence, Status, Wild Orchids

Floriculture trade has increased many folds in the recent times, considering its vast scope in the international and domestic market. Among the flowers, orchids occupy the premier place in the global market, contributing nearly 8 per cent by establishing a large spectrum of commercial potentialities. Orchids have immensely contributed to the economy of many developed and developing countries in the form of cut flower and pot plant.

Orchids are known for their diversity in forms, colours, appearances, size, shape and fragrance. Endowed exotic and delicate beauty with the long-lasting qualities are lured by scientists and layman alike. This majesty of nature represents the most highly evolved family *Orchidaceae*, among cotyledons, which is one of the largest groups in the plant kingdom. They are distributed throughout the world, right from tropical to temperate climates with more than 20,000 species in 800 genera. However, majority of orchids presently under cultivations are native to the tropical countries.

Many of our Indian species of orchids have contributed considerably for evolving famous hybrids as progenitors in Europe and USA. Still, there is a preference for hybrids endowed with beauty and novel color in the floriculture trade, where many of our native species can stand as competitors with them. India is the origin for the species like *Cymbidium*, ranking one of the top ten important plant in the floriculture trade of international market.

The climate conditions prevailing in Andaman and Nicobar group of islands are very much conducive for the luxuriant growth and development of various ornamental species, including flowering and foliage plants. A number of trees, shrubs, climbers, herbs, creepers, ferns, and other ornamental plants are found

growing in the wild state. Among these, orchids share as one of the largest groups in these islands, among the flowering plants. The tropical rain forests of these island ecosystem harbor over 110 species of orchids in wild state, of which most of them are epiphytic in nature except a few. Out of 110 species occurring in these islands, 25 species from 19 genera are reported to be endemic (Rao, 1996) and nine species in the rare and threatened category (Nayar, 1994).

### Materials and Methods

Botanical explorations were conducted over a period of three years in the forest areas of Andaman and Nicobar group of islands, which have lead to a collection of about twenty species of indigenous orchids. All the collected species were subjected to cataloguing, description and evaluation in the wild natural forest ecosystem and also under the low-cost orchidarium. Based on the morphological and characters, it was found that most of the species are having ornamental values.

Among the collections, some of the promising wild species of orchids occurring in the Andaman and Nicobar Islands are listed below along with its botanical description, distribution, status and importance.

### Results and Discussions

#### *Eulophia andamanensis* Reichb. f

It is a rare, terrestrial, sympodial type of orchid arising from stout pseudobulb with several clustered leaves. It is an endemic species distributed in the forest floor of Andaman group of islands especially in little Andaman reserved forests areas. The spike is arising from the side of pseudobulb, erect with about 24 florets in a

length of 70-100 cm, each flower measuring 3.0 to 3.7 cm across. Flowers are pale green with maroon streaks, white to pale green lip. Flowering is in November-March. Usually 3-4 spikes are produced from one pseudobulb and it remains on the plant for at least 1½ months. It can be used as cut flower and pot plants due to its long-lasting quality.

***Dendrobium formosum* Roxb.**

It is an epiphytic orchid found in the trees, growing at higher altitude. It is the largest flower among the wild orchid flora of Andamans, bearing 4-5 flowers, each measuring 8-10 cm across at the tip of the cane. Flowers-white fragrant with yellow throat and attractive. Flowers last for about 5 weeks in the plant. It is distributed only in the Andaman group of islands in the forest area of Mount Harriet (South Andaman). Flowers during November-January and May-July. It can be used as cut flower and pot plant due to its attractive flower and long-lasting quality.

***Dendrobium Crumenatum* Sw.**

This is an epiphytic herbaceous orchid commonly seen in 'rain tree' (*Samanea saman*) and mango tree as its hosts along the roadside. The plant grows fast and forms a bushy appearance in short time. Flowers borne in single usually; rarely in two or three produced at nodes, 3-4 cm across, white with yellow throat and highly fragrant. Blooms at least 4-5 times in a year, each flower remains for 2-3 days in the plant. Flowers look like bat. It is growing wild in the interior forest areas of Andaman and Nicobar group of islands. Owing to its fragrance, it can be grown as pot plant in the garden as well as at home.

***Dendrobium aphyllum* Roxb.**

An epiphytic orchid found in the branches of the trees in the hanging position. Flowers white with light maroon streaks in the light yellow base, usually 10-12 flowers per long spike. Flowers appear in the stem alternatively at leafless condition. Flowers during March-April. Each flower is short-lived for 2-3 days only. It is distributed only in Andaman group of Islands. It can be used as pot plant in the hanging basket for being its drooping spike.

***Dendrobium anceps* Sw.**

A small epiphytic, monopodial type of orchid found growing in the tree trunks of the forest areas. Stems flattened, leaves arranged very closely with pointed

edges. Flowers small, light yellow with white lip and dark yellow throat appearing at the terminal of the stem as single usually, rarely in two or three, and also at node as single, thus number of flowers per stem varies from 1-3. Flower remains as fresh for nearly one week. Flowering season is April-July and September-November. This peculiar plant is distributed in Andaman and Nicobar group of islands. Being its dwarf and miniature stature, it can be grown as pot plants in hanging baskets.

***Dendrobium secundum* (Bl.) Lindl.**

It is an epiphytic orchid with slender stem generally seen in the branches of 'rain tree' along the road sides as well as in the forest areas. Flowers pinkish in color with dark pink lip, appears in the distal end of the stem during December-February in the leaf shed condition. It is distributed in the Andaman group of Island only so far. It can be used as potential pot plants for its beautiful 'tooth brush' like small flowers.

***Cymbidium aloifolium* (Linn.) Sw.**

An epiphytic, sympodial type orchid found growing in the tree trunks, is the largest of the orchids in the territory of the bay islands. It produces the cluster of leathery linear leaves with good anchorage on the tree trunks. Pendulous inflorescence appears from the base of the plant with 15-25 flowers, in a drooping manner. Flowers creamish yellow in color with equi-distance in the inflorescence during November-March. This majestic look herbaceous plant is distributed only in the Andaman group of Islands. Due to its long-lasting quality and showy appearance of inflorescence, it can be suitable for growing as cut flower and garden plants in pots. Even, it can be grown in hanging baskets for its attractive drooping nature of the inflorescence.

***Bulbophyllum lepidum* (Bl.) J.J. Sm.**

It is an epiphytic, sympodial type of orchid with small pseudobulbs, each bearing solitary leaf of fleshy green and glossy appearance. Flowers during November-December with many in crimson red color having white lip at the terminal cluster in long erect, reddish peduncle. The small orchid is found in tree trunks at higher elevation in the seashore and interior forests of Andaman group of islands, particularly in South and Little Andamans. It can be grown as pot plants in hanging baskets for its small stature and attractive flower.

***Eria andamanica* Hook. f.**

A small, endemic, epiphytic orchid seen growing in

the trunks of "rain trees" along the roadsides. It bears ovoid pseudobulbs having 3-4 leathery leaves with linear lanceolate in shape. Flowers are very attractive, yellowish brown with purple batches, produced in 7-10 nos. on peduncle, measuring 15-25 cm in length. No of spikes per pseudobulb vary from 1 to 2. The flowers are thick with pubescence, which mimics the miniature birds. Flowering is in April-June. It is occurring only in Andaman group of islands, particularly South Andamans. Owing to its attractiveness and longer shelf-life, it can be used both as cut flower and pot plant.

***Papilionanthe teres* (Roxb.) Schlech**

A large epiphytic orchid with thick, slender, leafy monopodial stems, found growing in the branches of Pyima (*Lagestromia hypholeuca*) in the forests area and also in mango tree along roadsides in criss-crossed manner as thick mass like mat. Slender pencil thickness leaf is a peculiar phenomenon in the plant. Inflorescence is auxiliary, sub-erect or drooping with 5-7 showy flower with large size petals. Flowers are light pink with rich purple lip and reddish orange deeper inside. Flowers during February-May. It is very well distributed in the Andaman group of islands particularly in the forest area on host trees. Being attractive and brilliant in color, it is found suitable for growing as cut flower and pot plant.

***Agrostophyllum planicaule* (Wall ex. Lindl/Rchb.f.)**

This is a rare epiphytic orchid with crowded flat stems with one or two lanceolate leaves per stem. Found in inland forests of Andaman Islands. Inflorescence is auxiliary with very minute flowers appearing in clusters, bearing 10-20 in numbers. Flowers are yellowish white in color with dark yellow throat but not showy. Flowers during September-November. Due to its rare occurrence, it can be conserved for further improvement.

***Pholidota imbricata* Lindl.**

An epiphytic orchid with cluster of pseudobulbs, each producing a large size leaf, furrowed and wrinkled in age. Inflorescence arising from the base of the pseudobulbs, each in which small white flowers are arranged in two rows in drooping manner. Both the flowers and pinkish brown bracts together offer the splendor. Flowering is in May-September, found in shady trees like 'rain tree' (*Samanea saman*), tamarind and Pyima (*Lagestromia hypholeuca*) along the roadsides and in the forest areas of Andaman and Nicobar group of Islands. It can be grown as pot plants in hanging baskets due to its minute flowers in long pendulous raceme.

***Rhyncostylis retusa* Bl.**

It is commonly known as "fox-tail orchid". An elegant epiphytic orchid found growing wild in the shady trees of seashore sides and also in the forest area. Plants are erect with 6 to 9 pairs of leaves arranged on either side of thick short stem. Individual flowers arranged in the long pendulous inflorescence (40-50 cm) in a densely packed manner along the stalk gives attractive appearance like garland. The flowers are purple spotted white with pale mauve lip, which last for long time in the plant itself. Flowers during March-June. It is widely spread in the South Andaman and also in Nicobar group of Islands. Due to its drooping pendulous inflorescences, long-lasting quality and attractive color, it can be grown as cut flower and pot plants in hanging baskets.

***Luisia teretifolia* Gaud**

A small epiphytic orchid with slender leaf. Flowers auxiliary in cluster of 7-10 numbers, greenish yellow with light green lip, conspicuous. Flowering is in June-September and January-March. Flowers are not showy. It is distributed in the forest areas of Andaman and Nicobar group of islands. Since the flowers are not showy, it can be grown as pot plants in hanging baskets due to its slender leaf and dwarf stature.

***Oberonia iridifolia* (Roxb.) Lindl.**

It is a small epiphytic orchid with sword like flat, thick leaf, seen in the branches of shady-trees like Mango and Pyima in the inland forest areas of Andaman group of Islands particularly South Andaman. Inflorescence arises from the base of the plant in drooping pendulous manner. Flowers are minute with whitish yellow in color arranged compactly. Flowers during October-November. Flowers are not showy due to its minute (microscopic) nature. It can be used only as pot plant for its flat leaf and dwarf stature.

***Spathoglottis plicata* Bl.**

A beautiful terrestrial orchid, grows to a height of 90-100 cm. It is a herbaceous plant, which produces attractive, showy lilac flowers at the terminal point on a long, erect peduncles during January-March. It is wide spread in the forest areas of Great Nicobar and Car Nicobar group of Islands. Also introduced into the houses and offices of Port Blair city as garden plant. Because of its attractive color, it is found suitable for growing as pot plant.

***Vanilla andamanica* Rolfe**

It is only climbing orchid found in the Andaman and

Nicobar group of islands, particularly in South Andaman, Great Nicobar and Katchal island. It grows up to a height of 2-3 meters on the tree trunks with thick, glossy, green leaves. Occurrence of this orchid is rare in these islands. It bears large, white, fragrant flowers with pink lip having white patches on it during December-April, which also sets fruits in the island conditions around July. Being its large, white, fragrant flowers and thick fleshy leaves, it can be grown as garden plant on the shady trees.

#### Utility

Some of the species can be used as genetic base material in breeding programme for evolving hybrids with attractive colour and long-lasting quality. Few of them can serve as donor plant for producing pest and disease resistant hybrids/varieties. Besides, some of the wild species are also reported to have medicinal values.

#### Conservation

Due to injudicious over-exploitation of natural resources and excessive intervention owing to human settlement,

the survival of many species becomes threatened and as a consequence many got extinct or brought under rare and endangered category, which calls for immediate action plan to conserve such species in these islands.

As a part of *ex-situ* method, all the collected germplasm of wild indigenous orchids are being multiplied and maintained at indigenous low-cost orchidarium of Horticulture experimental farm of Central Agriculture Research Institute, Port Blair, Andamans. Utmost care is also taken to protect and conserve the rare and threatened species. Efforts are also being made to conserve them in *in-vitro* conditions.

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