

TWO RARE EPIPHYTIC ORCHIDS OF INDIA, *SACCOLABIOPSIS PUSILLA* (LINDL.) SEIDENF. & GARAY AND *OBERONIA GAMMIEI* KING & PANTL. DISCOVERED ON ANDAMAN ISLANDS, INDIA

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The Andaman and Nicobar Islands are a group of Indian Ocean archipelagic islands known as 'Green Emerald' or 'Bay Islands' comprising 572 Islands and located about 1200km from the mainland India. The Andaman group comprises 324 Islands and can be broadly sub-divided into North, Middle and South Andamans. The climate in Andaman Islands are warm and humid with the temperature ranging between 22°C and 30°C, average annual rainfall of 3000–3500 mm and mean relative humidity ranging from 82–85 %. The forest cover of the Andaman group of Islands is 83.18% of the total geographical area (FSI 2013). The Islands have phytogeographical significance as they are part of the Indo-Burma Biodiversity Hotspot (Myers et al. 2000) and it is worth to note that the orchid flora of Andaman Islands have affinities predominantly with Malaysian and to

some extent with Burmese-Thailand elements. Andaman and Nicobar Islands are known to harbor 2650 species (Pandey & Diwakar 2008), of which 308 taxa are classified as strict endemics.

Orchidaceae is one of the largest family of the flowering plants comprising about 22,075 species (APG III, 2009) and almost cosmopolitan in distribution, except in Antarctica. Most of the orchids are native to tropical countries and occur in their greatest diversity in humid tropical forests. The family is represented in India by 1331 taxa (Misra 2007), of which about 151 species are found in Andaman and Nicobar Islands (Rao et al. 2012).

While working on DBT sponsored project on 'Quantitative Assessment and Mapping of Plant Resources of the Andaman and Nicobar Islands', the authors could collect some curious orchid specimens from Middle Andaman Islands. After critical examination they were identified as *Saccolabiopsis pusilla* (Lindl.) Seidenf. & Garay and *Oberonia gammiei* King & Pantl. Thorough perusal of literature of the region (Kumar & Manilal 1994; Sinha 1999; Misra 2007; Pandey & Diwakar 2008) revealed that the former species is recorded from Kerala, Sikkim and Arunachal Pradesh and the latter only from Odisha and West Bengal and hence form new distribution records for Andaman & Nicobar Islands. The genus



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Saccolabiopsis pusilla



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Saccolabiopsis forms a new generic record for the Islands. Both the species are presented with nomenclatural citation, description, phenology, distribution, details of voucher specimens, distribution map and photographic plates. The material for the present study is based on recent collections by the authors in Middle Andaman Islands. The specimens collected were deposited in the Department of Botany, Sri Krishnadevaraya University (SKU).

Saccolabiopsis pusilla

(Lindl.) Seidenf. & Garay, *Bot. Tidsskr.* 67: 118. 1972; S. Misra, *Orchids India* 316. 2007. *Oeceoclades pusilla* Lindl., *Gen. Sp. Orchid. Pl.*: 237. 1833. *Saccolabium pumilio* Rchb.f., *Ann. Bot. Syst.* 6: 886. 1864; Hook. f., *Fl. Brit. India* 6: 56. 1890. (Images 1,3)

Type: Indian subcontinent, Wallich, N. 7332 (K)

Specimens examined: 44445 (SKU), 09.iii.2012, 30m, Adezig, Baratang, Andaman Islands, India, coll. K. Prasad & M. Bheemalingappa (Image 2).

Plant Description: Epiphytic small herbs, up to 6cm high. Roots many, greenish-white, slender, tortuous, to 1mm thick. Stem short, pendulous, stout, terete, up to 8mm long and 3mm thick, slightly compressed, base woody covered with old leaf bases. Leaves 2–5, alternate, distichous, subcoriaceous, sessile, falcate, linear-oblongate, up to 6x0.8 cm, notched or unequally bilobed at apex, undulate or subentire at margins, sheathing at base. Inflorescence lateral, shorter than the leaves, erect, up to 2.5cm long, in racemes; peduncle short, slender, terete, up to 0.5mm thick, winged, with sheathing sterile bracts; racemes angled, winged, up to 1.8cm long, laxly few-flowered. Floral bracts minute, shorter than the pedicel with ovary, pale brown, triangular or ovate, up to 1x0.8 mm, acute, persistent, 1–3-veined. Pedicel with ovary, up to 6mm long and 0.6mm thick, white at the lower half and green above, straight, ribbed. Flowers small, fragrant, up to 6.5mm across, widely opening, sepals and petals white, lip white with purple markings. Sepals subequal, 3-veined; dorsal sepal hooded on column, concave, oblong-oblongate, up to 3x0.8 mm, obtuse; lateral sepals spreading or reflexed, obliquely elliptic-ovate, up to 3x1.2 mm, obtuse. Petals slightly shorter than the sepals, spreading, linear-oblongate, up to 2.6 x 0.8 mm, obtuse, 1-veined. Lip firmly adnate to base of column, shorter than the sepals and petals, fleshy, dominated by a basal spur, up to 2.5cm long, 3-lobed; side lobe short, erect, purplish, triangular, up to 0.8x0.8 mm, rounded; midlobe large, decurved, broadly triangular or broadly ovate, up to 2x4 mm, obtuse at apex, margins entire or slightly 3-lobed, 3-nerved; spur longer than the



Image 1. *Saccolabiopsis pusilla*
a - Habit; b - Inflorescence; c - Close up flowers.

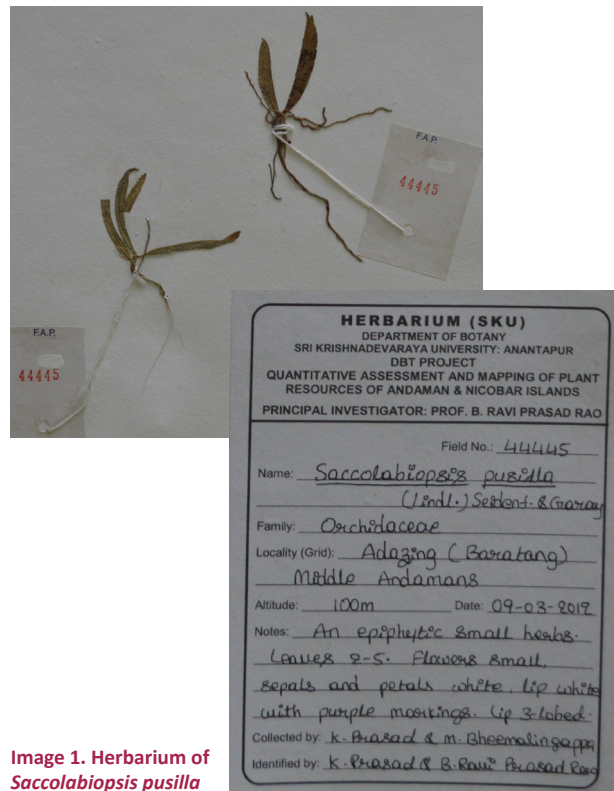


Image 1. Herbarium of *Saccolabiopsis pusilla*

lip, slender, incurved, cylindrical, to 4mm long, without any internal callus. Column short, pale pinkish-white, stout, cylindrical, up to 2x1 mm, beaked, without foot; wings short, narrow. Stigma short, subquadrate, up to 0.8x0.8 mm; rostellum minute. Anther terminal, light yellowish-cream, incumbent, subquadrate, up to 1x1 mm, 2-loculed, with a narrow curved rostrum; pollinia 4, in unequal pairs, yellow, spatulate or pyriform, up to 0.6x0.4 mm, dilated above. Capsules not seen.

Flowering: February–March.

Habitat and Ecology: Very rare, growing on fully moss covered stream side tree trunks of *Dehaasia kurzii* in evergreen forests at an altitude range of 30m.

Distribution: World: Bhutan, India, Malaysia and Thailand. India: Andaman Islands, Arunachal Pradesh, Kerala and Sikkim. Andaman Islands: Baratang Island.

Notes: This species is rarely found growing on trees along the stream sides in tropical evergreen forests of Baratang Island. As part of DBT Project executed during 2009–2014, we explored Middle Andaman Islands through 171 grids of size 10.56km² and found only 22 mature individuals in two grids. The species is found to be threatened in the natural habitat mainly due to timber extraction.

Conservation measures: Imposition of restriction on illegal felling of trees should be strictly implemented. Further explorations should be taken up for discovering new localities of species occurrence and propagation by ex situ methods may be initiated.

Oberonia gammiei

King & Pantl., *J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist.* 66: 578. 1897; S. Misra, *Orchids India* 309. 2007. (Images 3,4).

Type: India, West Bengal, Shella River, Gammie et Heinig 92 (CAL)

Specimens examined: 45195, 2.iv.2013, 25m, near Baratang Jetty, Andaman Islands, coll. B. Ravi Prasad Rao; 42930 (SKU), 01.x.2011, 60m, Panchavathi, Middle Andamans, Andaman Islands, India, coll. K. Prasad; 42677, 23.v.2011, 20m, South Creek (Baratang), Andaman and Nicobar Islands, coll. K. Prasad & M. Bheemalingappa (Image 5).

Plant description: Epiphytic herbs, up to 30cm long (including inflorescence), erect or pendulous, acaulescent. Roots many, dull white, short, vermiform, to 1mm thick. Leaves 3–5, equitant, distichous, coriaceous, sessile, slightly falcate, broadly ensiform, up to 10x0.5 cm, obliquely acuminate at apex, entire at margins, articulate at base. Inflorescence terminal, longer than the leaves, suberect or deflexed, slender, up to 30cm long, in spikes; peduncle short, compressed, up to 4mm thick, narrowly

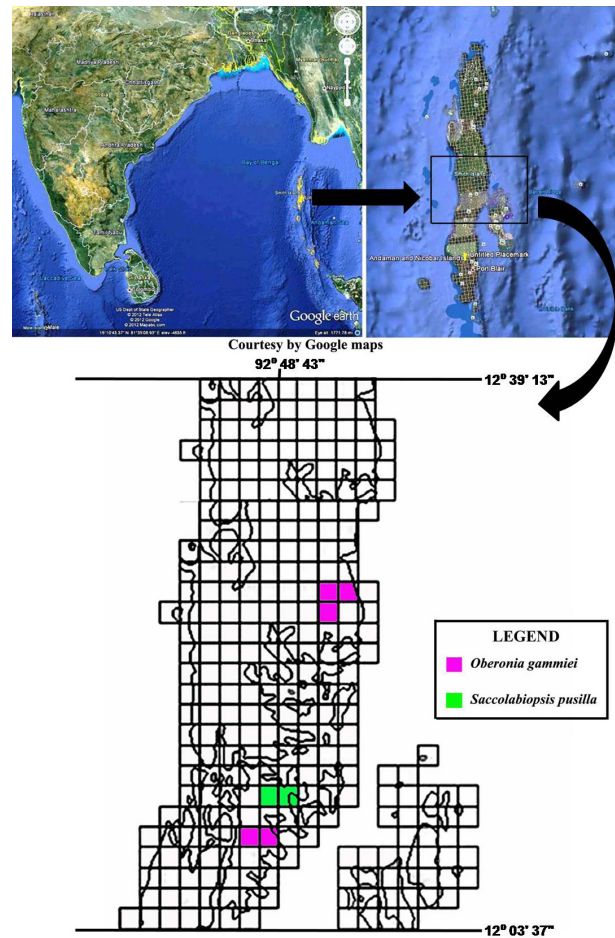


Image 3. Distribution map of *Saccolabiopsis pusilla* and *Oberonia gammiei*

winged, with a few addressed sterile bracts at the top; spike up to 25cm long, laxly many-flowered. Floral bracts as long as or longer than the pedicel with ovary, sheathing basal one-third and deflexed, narrowly ovate-lanceolate, up to 3x1 mm, apiculate, margins irregularly dentate, sparsely gland-dotted, veinless. Pedicel with ovary greenish-yellow, short, slightly ribbed, up to 2mm long and 0.4mm thick. Flowers small, greenish-yellow, up to 1.5mm across, widely opening. Sepals subequal, reflexed, veinless; dorsal sepal ovate, up to 1x0.8 mm, obtuse; lateral sepals obliquely oblong-ovate, up to 1x0.7 mm, rounded. Petals reflexed, elliptic-oblong, up to 0.9x0.4 mm, retuse, erose along margins, 3-veined. Lip superior, longer than the sepals and petals, spreading, sessile, deeply concave at base, broadly ovate in outline, up to 2x1.4 mm, 3-veined, 3-lobed; side lobes spreading, narrow, coarsely serrate, their apices acute and pointing forwards; midlobe transversely oblong, margins subentire, broadly 2-lobed; lobules sub-quadrate, incurved, subentire, with sinus, sparingly punctate; disc



Image 4. *Oberonia gammiei*
a - Habit; b - Inflorescence; c - Close up flowers.

ovate, indistinct. Column short, greenish-yellow, stout, subglobose, up to 0.6x0.6 mm, without foot. Stigma short, semiorbicular, up to 0.2x0.3 mm; rostellum minute, like a triangular protuberance. Anthers terminal, light yellow, incumbent, subquadrate, up to 0.3x0.3 mm, with a short truncate front edge; pollinia 4, in pairs, yellow, obovoid, up to 0.25x0.15 mm, sub equally divided. Capsules not seen.

Flowering and Fruiting: November and March.

Habitat and Ecology: Very rare, found growing on tree trunks of *Mangifera indica* near human habitations as well in moist deciduous forests at an altitude range of 50–100 m.

Distribution: World: Bangladesh, China, India, Laos, Malaysia, Myanmar, Thailand and Vietnam. India: Andaman Islands, Odisha and West Bengal. Andaman Islands: Baratang and Middle Andaman Islands.

Notes: Of the 171 grids laid in Middle Andaman Islands area, about 208 mature individuals were counted in five grids.

Conservation measures: Further explorations



Image 5. Herbarium of *Oberonia gammiei*

should be taken up for finding new localities of species occurrence and propagation by ex situ methods may be initiated.

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