Recollection of *Arundina graminifolia* var. *revoluta* (Orchidaceae) from India[a]

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Abstract

Arundina graminifolia var. *revoluta* (J.D.Hooker) A.L.Lamb, a rare species in India, has been recollected after 155 years from Meghalaya, India. A detailed taxonomic description along with photographic illustration is provided to facilitate its easy and correct identification.

Résumé

Redécouverte en Inde de *Arundina graminifolia* var. *revoluta* (Orchidaceae) – *Arundina graminifolia* var. *revoluta* (J.D.Hooker) A.L.Lamb, espèce rare en Inde, a été redécouvert dans l'état de Meghalaya (Inde), 155 ans après sa précédente collecte. Une description morphologique détaillée, accompagnée de photographies, est proposée afin d'en faciliter l'identification.

Introduction

The genus *Arundina* was established by C.L.v. Blume in 1825 with type species *A. speciosa* Blume, now a synonym of *Arundina graminifolia* (D.Don) B.P.G.Hochreutiner. Since then ca. 33 binomials have been recorded under the genus from various part of the world. Out of these 33 taxa, only two taxa, viz *Arundina graminifolia* and *Arundina graminifolia* var. *revoluta* (J.D.Hooker) A.L.Lamb, are accepted as truly belonging to the genus *Arundina* (Govaerts *et al*., 2014, retrieved 05.11.2014). The distribution of the genus is from the Himalayas to the Pacific (Mabberley, 2008).

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The species under discussion was originally described by J.D.Hooker as *Arundina revoluta* in the *Flora of British India*, based on a plant collected from Perak (now Malaysia). Later, it was reduced to the varietal rank by A.L.Lamb in 1994. The report from India is based on plants collected by W.Griffith in the Khasi hills (Meghalaya) in October 1835, deposited at Kew herbarium (see also Griffith, 1851 as *Arundina affinis*). The taxon was again collected from the same area by J.D.Hooker and Thomson in 1859, since then it is not reported from anywhere in India in spite of a number of field explorations carried on by the authors and their colleagues to different pockets of the N.E. India. We therefore assume that the species is rare in India and possibly only distributed in the state of Meghalaya.

Material and methods

During field exploration in the East Khasi Hills and West Jaintia Hills districts of Meghalaya, two small populations of 10-15 individuals, each belonging to genus *Arundina* with dense caespitose habit were observed and 3 plants of each population were collected (1 for herbarium and 2 for *ex situ* conservation).

Their identification was based on a detailed morphological study of live and herbarium specimens. For distribution, we scrutinized the available literature (Griffith, 1851; Hooker, 1890; King & Pantling, 1898; Kataki, 1986; Seidenfaden, 1986; Chan *et al*., 1994; Lucksom, 2007; Misra 2007; Rao, 2007; Chowdhery, 2009). Studied specimens are deposited at Herbarium of Botanical Survey of India, Eastern Regional Centre, Shillong (ASSAM) and live plants are conserved in the associated Experimental Botanic Garden. The synonymy and distribution of the species in current circumscription follow WCSP (Govaerts *et al*., 2014).

Results

The plants of these populations are to be identified as *Arundina graminifolia* var. *revoluta* (J.D.Hooker) A.L.Lamb. This taxon is observed in India 155 years after the previous observation. We seize the opportunity to propose a detailed description of it.

Arundina graminifolia var. ***revoluta*** (J.D.Hooker) A.L.Lamb, *Orchids of Borneo* 1: 66 (1994).

Basionym: *Arundina revoluta* J.D.Hooker, *The Flora of British India* 5: 858 (1890).

Types: Malaysia, Perak, *Scortechini 1504*, *Wray 1979* & *King's Collector* (Syntypes K).
Synonyms:
Arundina minor J.Lindley, *The Genera and Species of Orchidaceous Plants* 125 (1831).
Arundina affinis W.Griffith, *Notulae ad Plantas Asiaticas* 3: 330 (1851).
Arundina philippii var. *malayana* H.N.Ridley, *Materials for a Flora of the Malayan Peninsula* 1: 124 (1907).
Arundina revoluta var. *borneensis* J.J.Smith, *Bulletin du Jardin Botanique de Buitenzorg*, sér. 3, 5: 65 (1922).
Arundina stenopetala F.Gagnepain, *Bulletin de la Société Botanique de France* 79: 32 (1932).
Arundina caespitosa L.V.Averyanov, *Taiwania* 52: 289 (2007).

Lithophytic herb, caespitose; rhizome short, branched, dark brown, 2-3 mm thick; stem leafy, erect, 25-45 cm tall, 2-4 mm thick, at an interval of 3-5 mm on rhizome, with 6-16 distichous leaves and terminal floral scape; leaves sessile, linear, strongly keeled, grass like, 10-16 × 0.5-0.9 cm, acute, dark glossy green adaxially and yellowish green abaxially, with revolute margins; leaf sheaths 0.9-3.0 cm long, yellowish green; scape ascending or erect, 10-18 cm long, 1.0-1.5 mm thick with 2-3 distant, yellowish green, triangular ovate, sterile bracts, 0.5-0.6 × 0.6-0.7 cm; inflorescence a 1-3 flowered terminal raceme; floral bracts yellowish green, conduplicate, broadly ovate, 2-4 × 2-3 mm, persistent; pedicellate ovary 10-12 × ca. 1 mm, yellowish green, glabrous; flowers brightly purple with yellow blotch in centre of labellum, 2.4-3.2 cm across; sepals narrowly ovate, 2.0-2.7 × 0.6-0.8 cm, acute; petals oblong-elliptic, 2.2-2.6 × 0.6-0.7 cm, acute; lip sessile, trumpet-shaped, broadly ovate (when flattened out), 2.5-3.2 × 2.2-2.6 cm, with yellow center and 7-9 deep yellow colored keels, 3-lobed with wavy margin, lateral lobes erect, 1.2-1.6 × 0.7-0.8 cm, embracing the column, triangular, with roundish apex, midlobe semi-circular, 0.8-1.2 × 0.9-1.1 cm, bilobed; column white, slightly curved inwards, 1.0-1.2 × 0.15-0.20 cm, narrowly winged and wider towards the apex; anther cap white, hemispheric, ca. 1.5 mm across; pollinia 8, unequal, creamy yellow; fruit a cylindrical longitudinally ridged capsule, 2.2-3.0 × 0.5-0.8 cm (Fig. 1).

Note: *Arundina graminifolia* var. *revoluta* (J.D.Hooker) A.L.Lamb is closely related to *Arundina graminifolia* (D. Don) B.P.G.Hochreutiner, but differs strikingly in being distinctly smaller in all its parts, by its dense caespitose

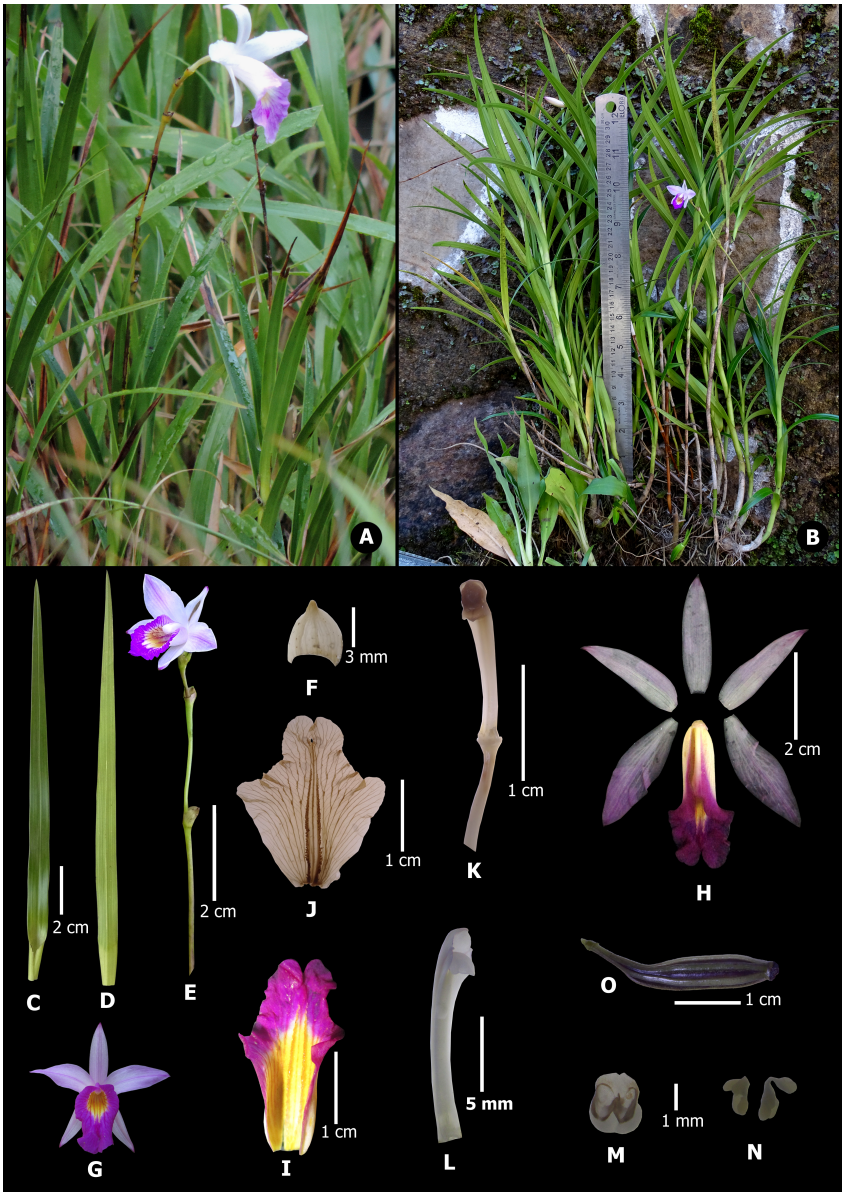

Fig. 1: *Arundina graminifolia* var. *revoluta* (J.D.Hooker) A.L.Lamb

A. & B. Habit, C. Leaf (adaxial surface), D. Leaf (abaxial surface), E. A portion of Scape with flower, F. Sterile bract, G. Flower (front view, not to scale), H. Sepals, petals and lip, I. Lip, J. Flattened lip (from preserved material), K. Column, pedicel and ovary (from preserved material), L. Column showing rostellum, M. Anther cap, N. Pollinia, O. Fruit.

habit, its linear glossy dark green leaves with revolute margins, and by its small, brightly purple, flowers with yellow blotch in the centre of labellum, while *Arundina graminifolia* has taller plants (up to 3 m long), larger leaves (up to 25 cm long) with non-revolute margins and larger flowers (up to 8 cm).

Flowering: August–October.

Habitat: Grows along with *Dipteris wallichii* (R.Brown) T.Moore, *Nepenthes khasiana* J.D.Hooker and *Utricularia caerulea* Linnaeus on open wet sandstones and rocks along streams and rivers, at elevation of ca. 1000-1200 m.

Specimens examined: INDIA, Meghalaya, East Khasi Hills, Pongtung, ca. 1200 m, 16.10.2014, *S.Sharma* 131388 (ASSAM); West Jaintia Hills, Amlarem, ca. 1000 m, 17.10.2014, *R.Kumar* 131389 (ASSAM); INDIA, Meghalaya, Khasi Hills, Cherrapunjee 'Churra' 16.10.1835, *W.Griffith 5195* (K image!).

Distribution: India (Meghalaya – Fig. 2), Sri Lanka, Western & Central Malesia (the report from Assam by WCSP is referable to present day Meghalaya).

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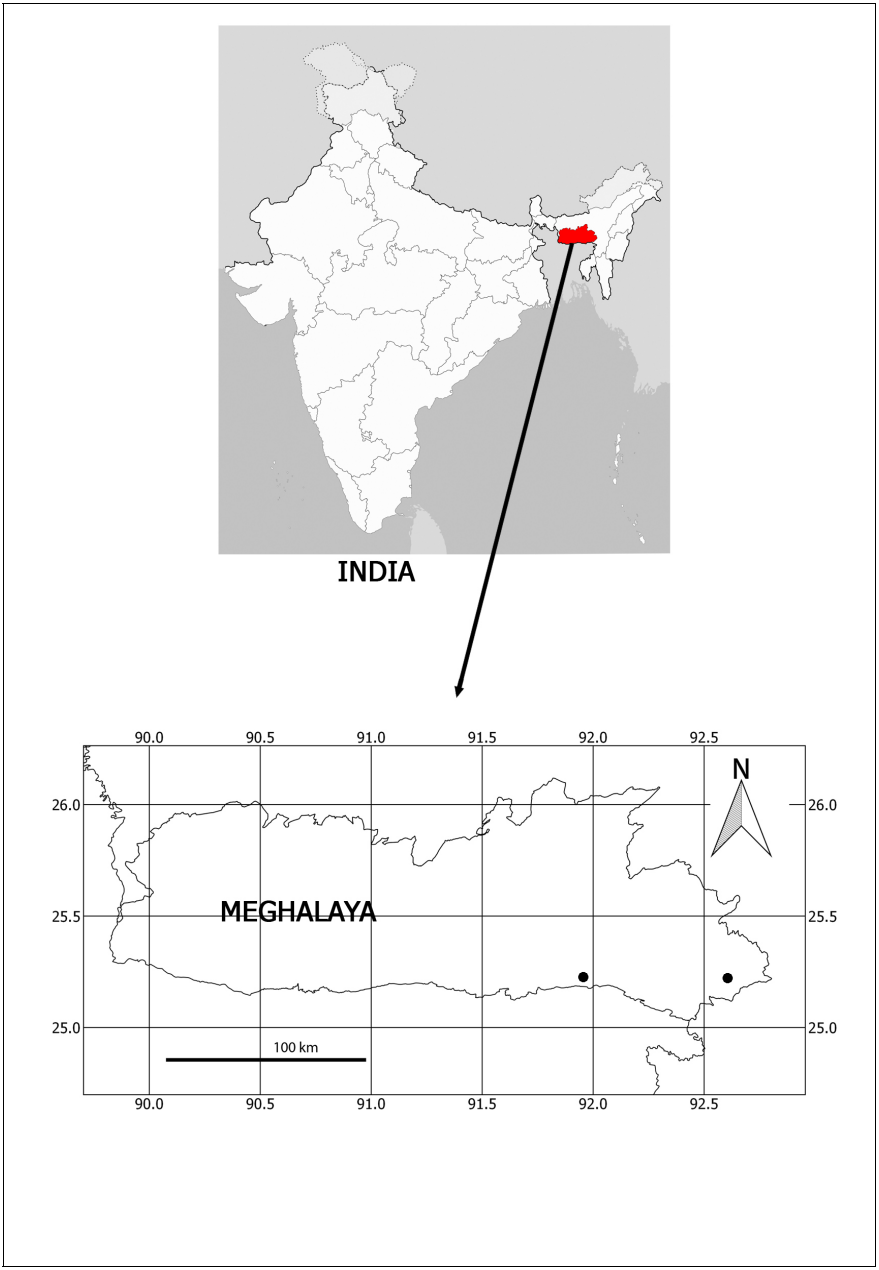

Fig. 2: Map showing collection sites of *Arundina graminifolia* var. *revoluta* in India.

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