AGLAONEMA NEBULOSUM (ARACEAE), RANGE EXTENSION AND FIRST RECORD FROM INDIA

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ABSTRACT

Aglaonema nebulosum N.E.Br., Araceae is reported here for the first time from India based on unreported three collections from Urmasi, Nongtrai and Tyrna villages in Meghalaya, northeastern India. The species can be recognized by the oblanceolate to narrowly elliptic-oblong leaves with entire margin, the membranous linear cataphylls inflorescence and dark red matured fruits in the form berry. Based on the population status and trend, the species was classified as Critically Endangered.

Key Words: Biodiversity, Critically endangered, Northeastern India

RESUMEN

Aglaonema nebulosum N.E.Br., Araceae se cita aquí por primera vez de India basada en tres colecciones no publicadas de los poblados de Urmasi, Nongtrai y Tyrna en Meghalaya, noreste de India. La especie puede reconocerse por sus hojas de oblanceoladas a estrechamente elíptico-oblongas con margen entero, la inflorescencia con catáfilos membranosos lineares y frutos en baya rojo oscuros en la madurez. Basados en el estatus de la población y la tendencia, la especie se clasificó como as Críticamente Amenazada.

During a floristic survey in Meghalaya, northeastern India, the authors collected specimens of *Aglaonema* (Figs. 1–3). The species was collected between 2011 and 2013 from Urmasi, Nongtrai and Tyrna villages with an elevation range of 1100–1600 m above mean sea level along the southern slope of Meghalaya, bordering Bangladesh. The total number of individuals in the three populations was 384. The species was growing in montane subtropical broadleaved wet hill forest of Meghalaya (Champion & Seth 1968) in moist habitats mostly along the fresh water streams. Flowering started in winter (November) and continued till the end of spring (March). Fruiting occurred in autumn (September) and fruits were matured in spring (April).

The specimens were examined at Central National Herbarium at Kolkata (CAL), Herbarium of the Eastern Regional Centre of the Botanical Survey of India (BSI) at Shillong (ASSAM), Herbarium of Forest Research Institute at Dehradun (DD), and Chinese Virtual Herbarium (CVH). Critical observation and comparison were also made with the existing herbarium specimens housed at herbarium of the Royal Botanic Gardens, Kew (K), along with the description by Nicolson (1969). The identity of the species thus was confirmed as *A. nebulosum* N.E.Br. The taxonomic history of *Aglaonema nebulosum* was reviewed by Nicolson (1969), in which the correct identity of the species was determined. The Holotype specimen was collected from Belgium in 1884, and was published in 1887 (Brown 1887). This species was never reported from India (Hooker 1893; Prain1903). Therefore, this report is the first record from India extending the geographic range of the species beyond the earlier recorded range, i.e. east coast of Sumatra, Malaysia, Singapore and Borneo.

A short description of the species with main diagnostic characters is provided below. A complete description of *Aglaonema nebulosum* can be found in Brown (1887), Engler (1915) and Nicolson (1969).

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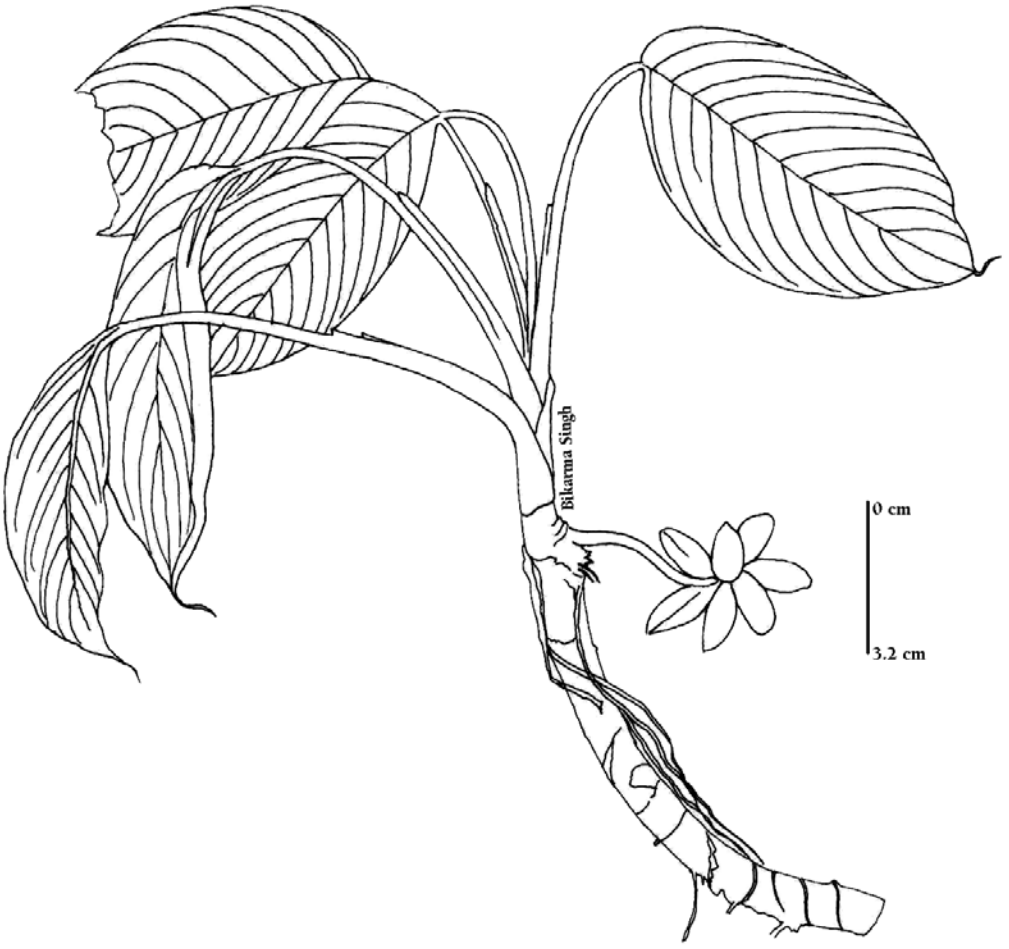

Fig. 1. Line drawing of *Aglaonema nebulosum*.

Aglaonema nebulosum N.E. Br , Ill. Hort. 31:67, t. 24. 1887 (**Fig. 3**). Type: NEW SOUTH WALES: 25 Sep 1822, *H. Wallich 8960A* (holotype: NSW).

Plant perennial evergreen herbs, 70–150 cm tall; stems epigeal, erect, unbranched, creeping, 0.5–1.0 cm diameter, rooting at nodes; internodes 1–2 cm long, 0.4–0.7 cm diameter, semi-solid, smooth when living, slightly rough when dead, one side slightly flattened, pale green, dark-brown, vertically straight when dry; cataphylls 4.2–12 cm long, 2–3.8 cm wide, linear, caducous. Petioles 5–27 cm long, 2–3 mm diameter, canaliculated, twisted, margin smooth. Leaves several, forms apical crown; leaf blades 19.6–26.3 cm long, 9.6–11.4 cm wide, oblanceolate to narrowly elliptic-oblong, papery, sub-glossy, dull green adaxially, yellowish-green abaxially when living, pale to slightly dark brown when dried, margin entire, slightly revolute when dried, apex often apiculate to abruptly acuminate, 0.8–1.6 cm long, base obtuse to acute, midrib flattened to impressed adaxially, prominent abaxially; venation strongly differentiated, 6–12 or more pairs primary lateral veins diverging from midrib, interprimaries, ascending, arching, prominent abaxially when dried, infra-marginal collective veins 0.6–2 mm distant from margin; variegation before fruit maturation is rare in natural population. Inflorescence subtended by membranous linear cataphylls, usually with axillary bud; peduncles 2.2–4.2 cm long, 1–2.3 cm diameter, solitary, rarely 2 together, equaling petioles, blackened when dried; spathe 2.1–2.5 cm long,

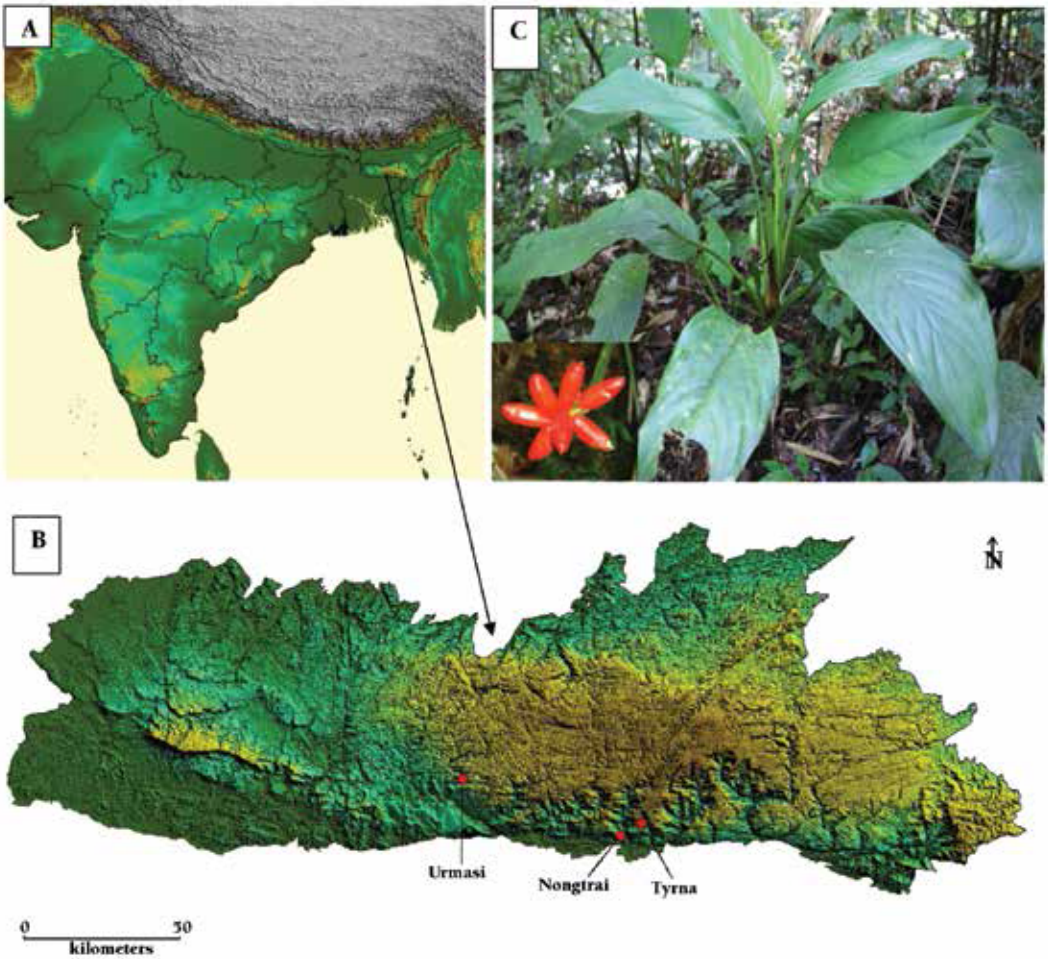

Fig. 2. **A & B.** Map showing locations of *Aglaonema nebulosum* in Meghalaya, India; **C.** A young plant of *A. nebulosum* in its natural habitat with matured fruit as inset.

2–3.8 wide, decurrent after 0.3–0.6 cm, closed, oblong to obovate, convolute when open, light green to whitish, margin white; spadix 1.3–1.9 cm long, 0.6–0.9 cm diameter, oblong-ellipsoid, pale greenish-cream, apex acute, stipitate, stipe 2–9 mm long, 1.2–1.4 cm diameter, dark brown when dried; stamens 0.9–1.5 cm long, 3–4 mm wide, anther ovate to elliptic; gynoecium 3–6 mm long, 3–6 mm diameter, prismatic, ovary bilocular, locules filled with translucid, mucilaginous substance, stigma oblong depressed. Fruit in berry form, 0.7–2.4 cm long, 4–8 mm diameter bunch, green when immature, dark red when mature, ellipsoid, outer layer fleshy. Seed 0.5–2 cm long, 3–5 mm diameter, solitary, ellipsoid.

The herbarium specimens were deposited under accession number 22398 in the Janaki Ammal Herbarium (RRLH) at CSIR-Indian Institute of Integrative Medicine, Jammu. The species was assessed for determination of threat category following IUCN version 11 (2014) based on present population size, extent of occurrence (EOO), area of occupancy (AOO), plausible future threats, and habitat quality. The guidelines for regional categorization were applied (IUCN 2003; Miller et al. 2007) because it was a part of the global population. However, since the regional population, i.e., the population reported in this study, is geographically isolated from earlier reported areas, the Red List category determined under IUCN (2014) remained unaltered. In fact,

Fig. 3. A matured plant of *Aglaonema nebulosum* with variegated leaves (green leaves with white blotches) described by Brown (1887). (Source: *L' Illustration Horticole,* vol. 34).

the Indian population is at least 2907 km far from the earlier records, and is isolated by the Indian Ocean and Bay of Bengal. The values for EOO and AOO were determined using Geocat (2012) online tool (http://geocat.kew.org).

Conservation.—The threat status of *Aglaonema nebulosum* is determined as Critically Endangered (CR) (A3bcB1B2abC1D1D2).

Voucher specimens/material examined. **INDIA. Meghalaya:** Tyrna village in East Khasi Hills district, 25°13.22'N & 91°39.21'E, 18 Sep 2012, *Singh et al. s.n.*; Nongtrai village in East Khasi Hills district, 25°11.17'N & 91°37.22'E, 13 Oct 2012, *Singh et al. s.n.*; Urmasi village in East Khasi Hills district, 25°49.57'N & 91°43.35'E, 15 Oct 2012, *Singh et al. 22398* (RRLH). **MALAYSIA. Perak:** Jul 1886, *Dr. King's Collector 10421* (K) (K 000400038). **NEW SOUTH WALES:** 25 Sep 1822, *H. Wallich 8960A* (NSW).

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