NOTE

Globba wardii (Zingiberaceae) – a Very Rare Species, New Record for India

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ABSTRACT: *Globba wardii* (B. L. Burtt & R. M. Sm.) K. J. Williams, a very rare species characterized by violet coloured bracts and flowers, is reported and described as a new record for India from Blue Mountain National Park, Mizoram.

KEY WORDS: *Globba wardii*, India.

INTRODUCTION

Globba L. is the third largest genus of the Zingiberaceae with 100-110 species in the world. It is distributed throughout tropical and parts of subtropical Asia, ranging from India to southern China, south and east to the Philippines and New Guinea with the centre of distribution in monsoonal southeast Asia, especially Thailand and Myanmar (Williams et al., 2004; see also Larsen, 1996; Kress et al., 2002). In India, the genus is represented by 21 species and 1 variety (Wight, 1853; Baker, 1890; Banerjee, 1966; Rao and Verma, 1972; Raizada, 1976; Somadeva, 1981; Karthikeyan et al., 1989; Srivastava, 1998; Sabu, 2006; Subbarao and Kumari, 2008) with a preponderance in Eastern India where 16 species are distributed in different terrains (Fischer, 1929; Rao and Verma *l.c.*; Joseph, 1982; Balakrishnan, 1983; Deb, 1983; Lal and Verma, 1987; Dam et al., 1997; Kumar, 2001; Srivastava and Choudhary, 2006; Tandon et al., 2007; Chowdhery et al., 2009).

During a floristic survey of Blue Mountain National Park, Mizoram in June 2008, a small population of four individuals of the genus *Globba*, bearing violet coloured bracts and flowers, was encountered. Of the four, two individuals were picked up, one of which was transplanted to the experimental Garden of the BSI Eastern Regional Centre, Shillong and another to the ASSAM Herbarium. Transplanted material did not survive. A critical study of the herbarium specimens and scrutiny of the literature reveals it to be *Globba wardii* (B. L. Burtt & R. M. Sm.) K. J. Williams, a very rare species hitherto known only from Myanmar. This constitutes the first authentic record of this species from India outside its type locality.

TAXONOMIC TREATMENTS

Globba wardii (B. L. Burtt & R. M. Sm.) K. J. Williams, Amer. J. Bot. 91: 114. 2004. *Mantisia wardii* B. L. Burtt & R. M. Sm., Notes Roy. Bot. Gard. Edinburgh 28: 288. 1968. Fig. 1.

Rhizomatous herb, rhizomes small, creeping, yellow-grey inside; roots many, fleshy, tuberous, elongated. Leafy shoots slender, *ca.* 30-40 cm high bearing about 4-7 leaves. Leaves prominent towards upper side, sessile, glabrous, multicostate, ligulate; ligule semicircular, 0.5 mm, bipartite, margins sparsely pubescent; lamina sessile 6-12 × 2-4.2 cm, cordio-acuminate, apex apiculate, base auriculate, upper surface glabrous, lower surface minutely pubescent, margins scabrous. Inflorescence terminal, a thyrse or lax raceme, 4.5-8 cm, straight, peduncle slender. Bracts violet coloured, many, imbricate, persistent, 1.5 × 0.5 cm, elliptic-acuminate, upper bracts subtend cincinni of 5 violet flowers, elongate. Bracteoles small, opposite to flowers, free at base. Calyx campanulate, glabrous, 1 cm long, apex sub-equally tri-lobed (2 × 3 mm). Corolla tube slender, much longer than the calyx lobes, 1.6-2 cm long, *ca.* 1 mm broad, concave, lobes three, ovate or oblong, unequal, reddish-purple, much exserted and separated upward, lateral segments elongate, shortly triangular, 4-5 x 3-4 mm, dorsal segments navicular, 5-6 mm long. Lateral staminodes petaloid, 6-7 mm long, 3 mm above filament base, pale reddish-purple or golden yellow, apiculate. Labellum reflexed, adnate to filament to form a slender tube above lateral staminodes and corolla lobes, *ca.* 1 cm long, base 2 mm broad, increasing upwards to 6 mm broad, bilobed in the middle, lobes rotund, orange, basal auricles 2. Filament 1.5-2 cm long, curved, pale orange. Anthers purple, 3 ×

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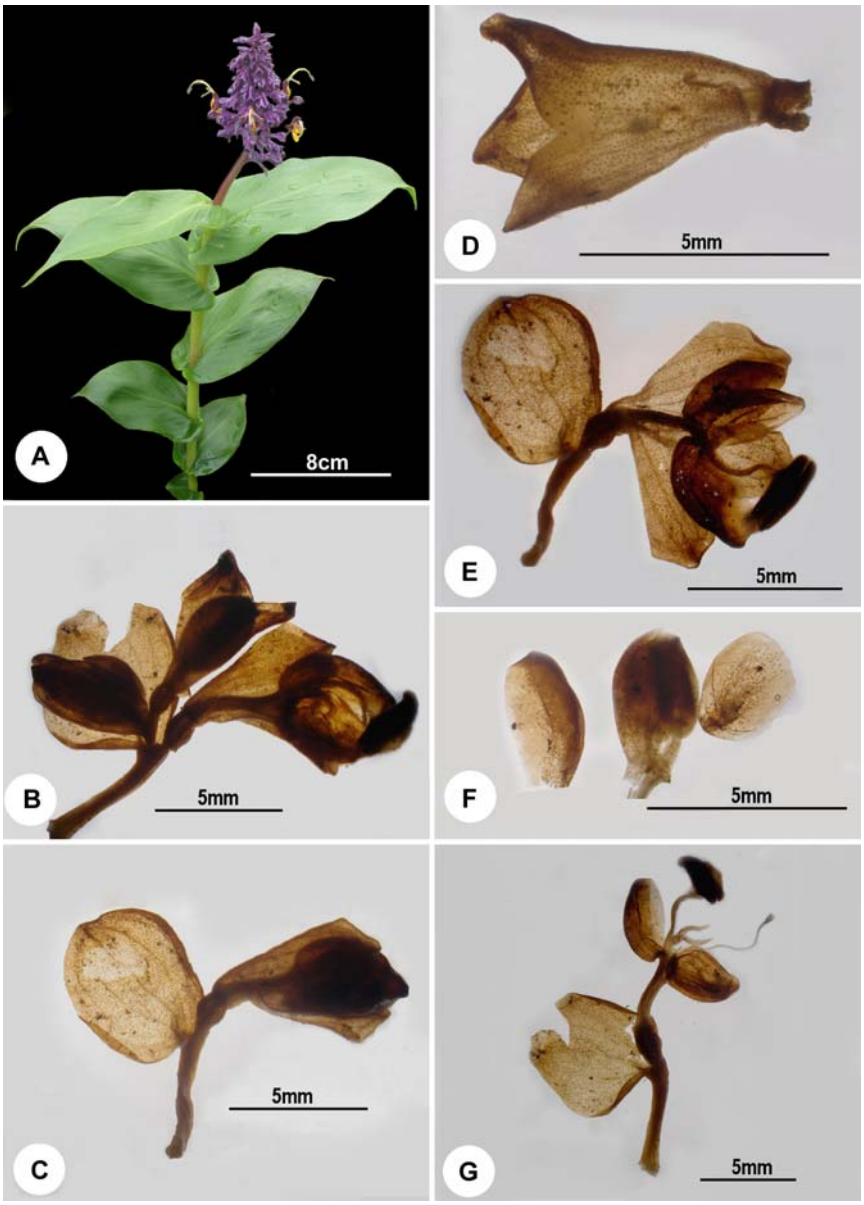


Fig. 1. *Globba wardii* (B. L. Burtt & R. M. Sm.) K. J. Williams. A: Habit of plant showing inflorescence and flowers. B: Cincinni of flowers. C: Single flower with bract. D: A trilobed calyx. E: A dissected flower showing floral parts. F: Corolla segments. G: A portion of flower showing androecium and gynoecium. (B-G: photographs taken from herbarium material of premature stage of flowers).

1.9 mm, obtuse towards apex, appendiculate. Epigynous glands linear, *ca.* 4 mm long, ovary unilocular, ovules many. Stigma round, ciliate.

Plant growing terrestrially at Forest edges in meadows where the soil is red with adequate humus, at an altitude *ca.* 1,500 m. Flowers in the month of June.

Specimens examined: Mizoram, Blue Mountain National Park (*ca.* 1,500 m), 26.06.2008, *S.K. Singh & Motilal* 104003 (ASSAM).

Distribution and conservation status*:* INDIA (Mizoram: Blue Mountain National Park – Present report); MYANMAR (Erakan-Ranchi Ridge, Mt. Victoria National Park). Fig. 2. This species is naturally conserved (*in situ*) in National Parks in both the countries. IUCN category Endangered (EN) is proposed as it has very small population size and restricted distribution area (less than *ca.* 200 km^2).

This species differs distinctly from all the hitherto known species of the genus by having violet bracts and

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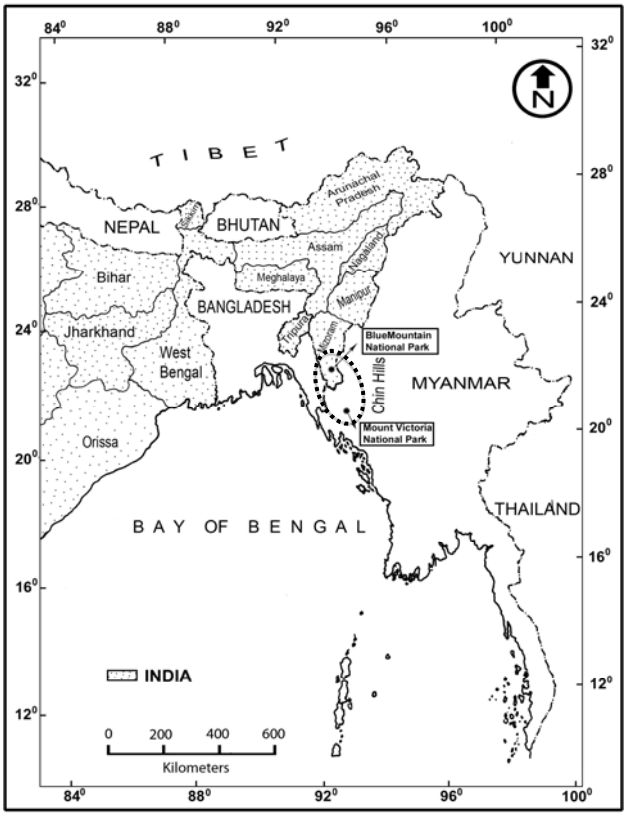


Fig. 2. Distribution map of *Globba wardii*.

flowers. It was first established by B. L. Burtt and R. M Smith (1968) as *Mantisia wardii* based on a Kingdon Ward collection made in June, 1956 from Erakan-Ranchi Ridge, Mt. Victoria, Myanmar. Later, it was examined cyto-taxonomically by Newman and Jong (1986) based on plants cultivated at the Royal Botanic Garden Edinburgh brought from Myanmar (erstwhile Burma) by Kingdon Ward. They (Newman and Jong, *l.c.*) also treated this species under genus *Mantisia* pointing out that it might be an intermediate form between *Globba* and *Mantisia*. Williams et al., (2004), in a phylogenetic and evolutionary study, treated *Mantisia* under *Globba* and transferred all species of the former under the latter.

Perusal of the literature shows that, until now this species has never been collected from any other locality than the type. Hence, this is the second recorded locality for this rare species.

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LITERATURE CITED

Baker, J. G. 1890. Scitamineae. In: Hooker, J. D. (ed.), The Flora of British India **6**: 198-264. L. Reeve & Co. Ltd., London, UK.

Balakrishnan, N. P. 1983. Flora of Jowai and vicinity Meghalaya. **2**: 523-24. BSI, Howrah, India.

Banerjee, R. N. 1966. *Globba schomburgkii* Hook. f. a new record for India. Bull. Bot. Surv. India **8**: 359-361.

Burtt, B. L. and R. M. Smith. 1968. *Mantisia wardii*: a new Burmese species of Zingiberaceae. Notes Roy. Bot. Gard. Edinburgh **28**: 287-290.

Chowdhery, H. J., G. S. Giri and A. Pramanik. 2009. Materials for the Flora of Arunachal Pradesh [Hydrocharitaceae-Poaceae] **3**: 174-175. BSI, Kolkata, India.

Dam, D. P., N. Dam and R. M. Dutta. 1997. *Mantisia saltatoria* Sims versus *Globba radicalis* Roxb. (Zingiberaceae). Bull. Bot. Surv. India **34**: 188-193.

Deb, D. B. 1983. The Flora of Tripura State [Buddlejaceae-Gramineae (Poaceae)] **2**: 374-376. Today & Tomarrow Print. & Publ., New Delhi, India.

Fischer, C. E. C. 1929. The flora of Lushai Hills. Rec. Bot. Surv. India **12**: 75-161.

Joseph, J. 1982. Flora of Nongpoh and vicinity East Khasi Hills, District Meghalaya. Forest Deptt., Govt. of Meghalaya. p. 303.

Karthikeyan, S., S. K. Jain, M. P. Nayar and M. Sanjappa. 1989 Florae Indicae Enumeratio: Monocotyledonae. BSI. Calcutta, India. pp. 289-299

Kress, W. J., L. M. Prince and K. J. Williams. 2002. The phylogeny and a new classification of the gingers (Zingiberaceae): evidence from molecular data. Amer. J. Bot. **89**: 1682-1696.

Kumar, S. 2001. Zingiberaceae of Sikkim. Deep Publ. New Delhi, India.

Lal, J. and D. M. Verma. 1987. Globba rubromaculata- a new species of Zingiberaceae from Arunachal Pradesh. Bull. Bot Surv. India **29**: 26-28.

Larsen, K. 1996. A preliminary checklist of the Zingiberaceae of Thailand. Thai Forest Bull., Bot. **24**: 35-49.

Newman, M. F., and K. Jong. 1986. Cytotaxonomic observations on *Mantisia wardii* (Zingiberaceae). Notes Roy. Bot. Gard. Edinburgh **43**: 493-496.

Raizada, M. B. 1976. Supplement to Duthie's Flora of the Upper Gangetic Plain and of the adjacent Siwalik and sub-Himalayan tracts. International Book Distrib., Dehradun, India. p. 271.

Rao, A. S. and D. M. Verma. 1972. Material towards a Monocot Flora of Assam-II (Zingiberaceae and Marantaceae). Bull. Bot. Surv. India **14**: 114-143.

Sabu, M. 2006. Zingiberaceae and Costaceae of South India. Indian Association for Angiosperm Taxonomy. Calicut.

Somadeva. 1981. The genus *Globba* (Zingiberaceae) from Dehradun and Garhwal Himalaya, India. Indian. J. Forest. **4**: 230-235.

Srivastava, S. K. 1998: Zingiberaceae in Andaman and Nicobar Islands, India. Indian J. Forest., Add. Ser. **8**: 1-33.

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Srivastava, R. C. and R. K. Choudhary. 2006. Floristic scenario of Itanagar wildlife sanctuary - a case study. Bull. Arunachal Forest Res. **22**: 17-21.
Subbarao, G. V. and G. R. Kumari. 2008. Flora of Vishakhapatnam **2**: 258-260. BSI, Kolkata.
Tandon, P., D. S. S. Bhowmik, A. A. Mao and K. Suman. 2007. Rapid In vitro clonal propagation of *Mantisia spathulata* Schult, a rare and endemic plant of north-eastern India for recovery. Biotechnology **6**: 68-71.
Wight, R. 1853. Icones Plantarum Indicae orientalis: or figures of Indian Plants **6**: Plate 2001-02. American Mission Press.
Williams, K. J., W. J. Kress, P. S. Manos. 2004. The Phylogeny, Evolution, and Classification of the genus *Globba* and tribe Globbeae (Zingiberaceae): appendages do matter. Amer. J. Bot. **91**: 100-114.

一個非常稀有的印度新紀錄種 – *Globba wardii*（薑科, Zingiberaceae）

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摘要：*Globba wardii* (B. L. Burtt & R. M. Sm.) K. J. Williams，是一個非常難得的物種，其特點是紫色苞片和花朵。本文報導並描述該種為印度一個新紀錄，分布於米佐蘭姆的藍山國家公園。

關鍵詞：*Globba wardii*、印度。

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