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A new variety of *Rhododendron grande* Wight [Ericaceae] from Darjeeling Himalaya in West Bengal, India

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Abstract

A new variety of *Rhododendron grande* Wight was found in the recent rhododendron survey from Singalila National Park in India. This new variety we named *Rhododendron grande* var *singalense* Rai *et al*. is easily identifiable by purple blotched ornamentation on the inner side of 2 posterior petals that extends from the base to the corolla lobe, shorter stamens, inserted pistil and relatively smaller, shorter and pyramidal capsule with mixed trichomes. The findings of this new variety added to the already existing 19 taxa of Rhododendrons of Singalila National Park.

Key words: *Rhododendron grande* var. *singalense*, New variety, Singalila National Park

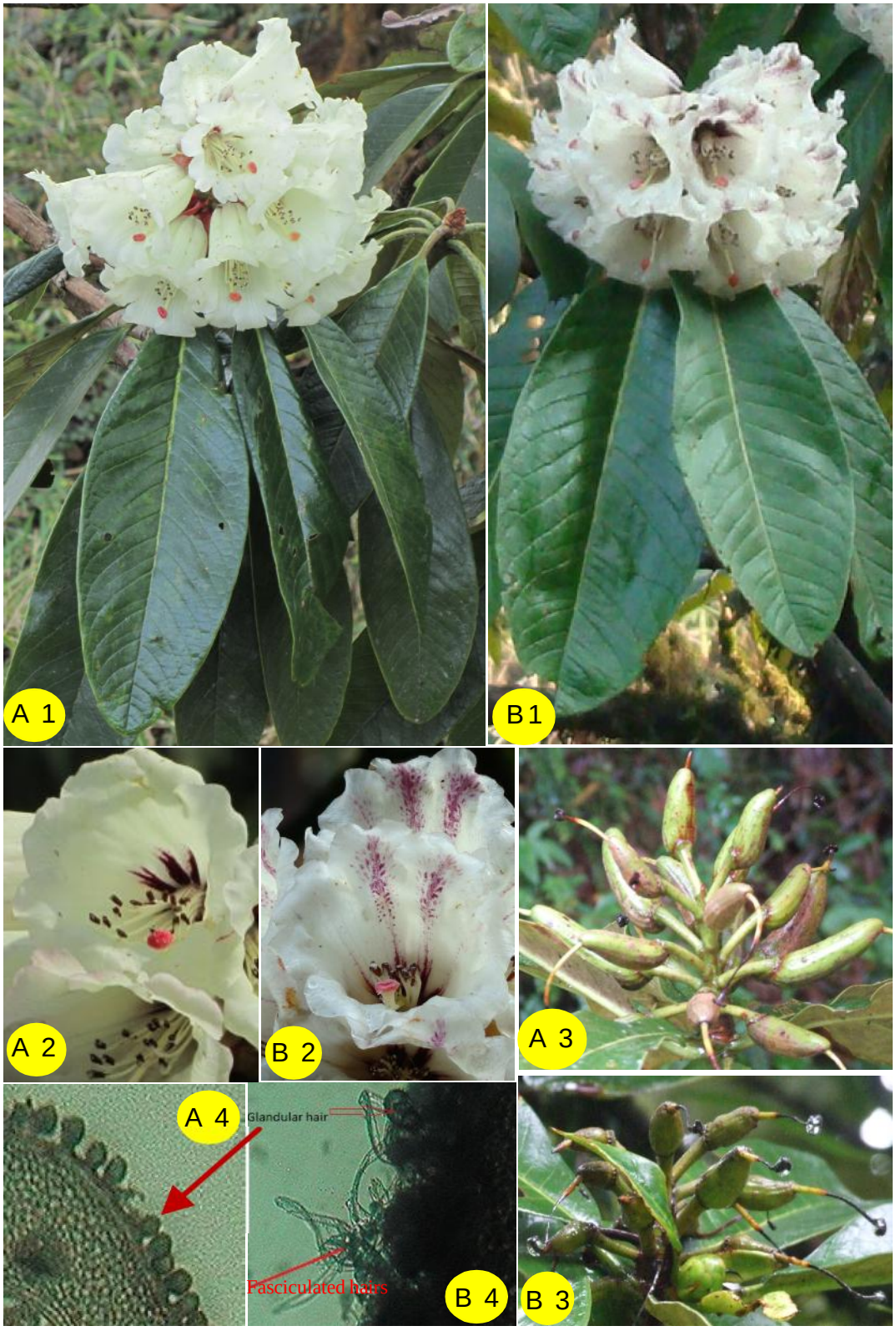
INTRODUCTION

Rhododendron grande, belonging to subsection *Grandia* of section *Pontinca* under subgenus *Hymenanthes* of Ericaceae was described by Robert Wight in 1847 in Calcutta Journal of Natural History. The specific epithet is derived from its large showy flowers. It was described as *R. argenteum* by Sir J.D. Hooker (1849), *R. longifolium* by Thomas Nuttall (1853) and as *Waldemaria argentea* by Klotzsch (1862) based on *R. argenteum*. The species is a medium sized evergreen tree of Temperate Himalayas and grows as second story tree at elevation between 2000 – 2900 m extending from eastern Nepal to Bhutan and South-eastern China (Clarke 1882; Pradhan & Lachungpa 1990; Long & Rae 1991; Fang *et al*. 2005).

During the present survey for rhododendrons in the Singalila National Park, we came across an interesting variation in floral structure and capsule morphology in some individuals those are otherwise sharing all major characters of *Rhododendron grande*, [PLATE I, Figs. A1 - A4] as described in the available literature (Hooker 1849; Clarke 1882; Pradhan & Lachungpa 1990; Long & Rae 1991; Fang *et al*. 2005; Sastry 2010; Pradhan 2010). Ornamentation of the posterior corolla lobes, size of capsule and the shape of leaf base are very prominent variations from typical individuals. These variant individuals were found in the compartment 4 of Gairibans Beat in the South Range and is described here as *R. grande* var. *singalense* (*var. nov*.). The new variety is cited below with etymology, diagnosis, distribution and status.

MATERIAL AND METHODS

The collected specimens were processed and identified with the help of literatures (Hooker 1849; Long & Rae 1991; Pradhan & Lachungpa 2002; Fang *et al*. 2005; Pradhan, 2010) and


A 1
B 1
A 2
B 2
A 3
A 4
Glandular hair
Fasciculated hairs
B 4
B 3

were matched at BSHC and NBU herbaria for authentication. Specimens were also matched with the cibachrome images (E00001005 and E0001378 from K) of the Isotypes of *R, grande*. The Holotype will be deposited at CAL and the Isotypes will be deposited at NBU and at the Herbarium of the Department of Botany, St. Joseph's College, Darjeeling.

Taxonomic treatment

Rhododendron grande R. Wight var**. *singalense*** U. Rai, D. Lama N. Thapa *et* S. Baraily, *var. nov.* [PLATE I, Figs. B1 - B4]

Diagnosis: *Rhododendron grande* var *singalense* U. Rai *et al* is easily identifiable by its distinct purple ornamentation on two, rarely three posterior corolla lobes extending from the base of the tube; cuneate leaf-base with14 – 18 pairs of lateral veins; closely set stamen with lesser length variation and the tubular curved capsules. However, the difference of the new variety with the type variety is given in Table 1.

Table 1. Difference between the two varieties of *R. grande*

Characters	*R. grande* type variety	*R. grande* var *singalense*
Lamina base	Cuneate	More or less rounded
Lateral veins	18 – 22 pairs	14 – 18 pairs
Ornamentation on corolla	Only purple nectar pouches at the inside base of corolla tube; otherwise no ornamentation	Dense purple spots on 2 – 3 posterior corolla lobes extending from the nectar pouch
Stamen	Much spread out, shows wide variation in length, 3.5 – 6 cm; 1/3rd of filaments hairy	Closely set; length less variable, 4.2–5.8 cm; filaments glabrous
Hair on ovary wall	Presence of single type of glandular trichomes	Mixture of glandular and fasciculated trichomes
Capsule	Tubular, slightly curved upward, sparsely covered with brown indumentum	Smaller, broadly pyramidal without brown tomentum
Diameter of pollen tetrad	52 – 60µ	48 – 56µ

Types: India, Darjeeling, Singalila National Park core region, South range, Gairibans Compartment 4, Temperate forest; 26°03¹03.03º N, 88°01¹48.83º E, 2675 m, dated 24.03.2013; **HOLOTYPUS**: *U. Rai & D. Lama SNP/009 [marked **A**]* (CAL); **ISOTYPI**: *SNP/009 [marked **B**]* (NBU); and *SNP/009 [marked **C**]* St. Joseph's College Herbarium)

Etymology: The varietal epithet is based on its place of occurrence 'Singalila National Park' in Darjeeling Hill region of West Bengal, India.

Distribution: *Rhododendron grande* var *singalense var. nov.* is at present known only from the Singalila National Park of Darjeeling Himalaya (Map 1). The variety is restricted to area between Tumling - Gairibans in south range with a very small scattered population of few individuals.

Legends of [Page 160] PLATE - I: Fig. A. *Rhododendron grande* var. *grande* : 1. a flowering twig; 2. enlarged view of flower; 3. fruits; 4. t.s. of ovary wall with glandular hairs. **Fig. B. *Rhododendron grande* var. *singalense* :** 1. a flowering twig; 2. enlarged view of flower; 3. fruits; 4. t.s. of ovary wall with glandular and fasciculated hairs.

DISCUSSION

Recognition of *R. grande* var *singalense* U. Rai *et al*, *var. nov.* from Singalila National Park from the Darjeeling part of the Eastern Himalaya in West Bengal (India) is significant in terms of the richness and diversification of *Rhododendron* in the area. Rai *et al*. (2013) previously recorded the occurrence of 17 species with 3 subspecies making a total of 19 taxa for the genus *Rhododendron* in Singalila National Park. This new variety is now increasing the number to a total of 20 taxa in West Bengal. The present discovery also supports the observation by Das (2004) that the process of evolution is still active in this part of the Himalayas.

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LITERATURE CITED

Clarke, C.B. 1882. *Rhododendron*, in J.D. Hooker (ed.) *Flora of British India*. Vol. 3: 419 – 481. L. Reve & Co., Ashford, Kent, London.

Fang, M.; Fang, R.; Fang, R.; He, M.; Hu, L.; Yang, H.; Chamberlain D.F. 2005. Ericaceae. In: Wu, Z. Y.; P. H. Raven & D. Y. Hong (eds.). *Flora of China. Vol. 14 (Apiaceae* through *Ericaceae)*. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis. Pp. 260 – 517.

Grierson, A.J.C & Long, D.G. 1991. *Flora of Bhutan*. Vol. 2 Part 1. Royal Botanic Gardens, Edinburgh. Pp. 432.

Das, A.P. 2004. Floristic studies in Darjiling hills**.** *Bull. Bot. Surv. India* 43(1-4): 1 – 18.

Hooker, J.D. 1849. *The Rhododendrons of Sikkim-Himalayas*. L. Reve & Co., Ashford, Kent, London.

Klotzsch, J.F. 1862 Bot. Ergebn. Reise Waldemar [Klotzsch & Garckel]. 99

Nuttall, T. 1853. Hooker's *Journal of Botany and Kew Garden miscellany*, **5**: 366.

Pradhan, K. 2010. Handbook - *Rhododendron of Sikkim.* Logical, Kolkata. Pp. 143.

Pradhan, U.C. & Lachungpa S.T. 1990. *Sikkim-Himalayan Rhododendron*. Primulaceae Books, Kalimpong, Darjeeling. Pp. 130.

Pradhan, U.C. & Lachungpa, S.T. 2002. *Sikkim-Himalayan Rhododendron*. Primulaceae Books, Kalimpong, Darjeeling. Pp. 130.

Sastry, A.R.K. 2010. Diversity, distribution and conservation of Indian Rhododendrons, pp. 36-41. In: A. Mainra, H.K. Badola & B. Mohanty (eds.). *Proc. Int. Con. on Rhododendrons: Conservation and Sustainable Use*. Forest Environment & Wildlife Management Department, Govt. of Sikkim, Gangtok, Sikkim, India. Pp. 36 – 41.

Rai, U.; Lama D.; Thapa N. & Rai S. 2013. Diversity of *Rhododendron* Linnaeus (Ericaceae) in Singalila National Park located in the Darjeeling part of the Himalayas. *Pleione* 7(2). 424 – 440.

WIGHT, R. 1847. *Calcutta Journal of Natural History, and Miscellany of the Arts and Sciences in India*. Calcutta 8: 176 .