

CURRENT AVAILABILITY STATUS AND DISTRIBUTION OF *ESMERALDA* RCHB. F. (ORCHIDACEAE) IN DARJEELING HIMALAYA OF WEST BENGAL, INDIA

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Abstract

The present paper deals with current availability status and distribution of *Esmeralda* Rchb. f. (Orchidaceae) from Darjeeling Himalaya of West Bengal, India.

Introduction

THE GENUS *Esmeralda* Rchb. f., comprises 2 species occurring in the Himalaya, Myanmar, South China and Thailand.

Plants perennial, epiphytic herbs. *Stem* stout, terete, scandent. *Leaves* coriaceous, distichous, tip unequally 2-lobed. *Inflorescence* extra axillary, racemose, erect, few-flowered; floral bracts persistent. *Flowers* showy, (5-8.5 cm across), transversely streaked. *Sepals* and *petals* similar, spreading, petals smaller than the sepals. *Lip* mobile, 3-lobed, pendent, shorter than the sepals and petals; side lobes small; apical lobe clawed, reniform, margin crenate; disc 2-callose. *Column* short, stout. *Anther* terminal; *pollinia* 4.

Materials and Methods

While working on orchid flora of Darjeeling Himalaya during the years 2007 – 2015, the authors came across two interesting specimens of epiphytic orchid species. After critical examination and comparison with other authenticated specimens and literatures (Bose *et al.*, 1999; Chowdhery, 1998; King and Pantling, 1898; Pearce and Cribb, 2002; Pradhan, 1979), both unknown species were identified as *Esmeralda cathcartii* (Lindl.) Rchb. f., and *Esmeralda clarkei* Rchb. f. Herbarium specimens were prepared by standard methods (Jain and Rao, 1977). Voucher specimens were deposited in the herbarium of Taxonomy and Ethnobiology Research Laboratory, Cluny Women's College, Kalimpong. In the present investigation, detailed taxonomic account of both the species based on the fresh specimens along with habitat, flowering, fruiting, altitudinal range, current status, local distribution within Darjeeling and geographical

distribution is provided here to authenticate the species and facilitate their easy identification.

Key to the Species

1. Sepals oblong-obovate or sub-round; sepals and petals white and broad, rounded apically; flowering March - June..... *E. cathcartii*
- 1a. Sepals narrowly oblong-lanceolate; sepals and petals yellow and narrow somewhat pointed apically; flowering September - December..... *E. clarkei*

Taxonomic Enumeration

Esmeralda cathcartii (Lindl.) Rchb. f., Xenia. Orchid. 2: 39. 1874. [Fig. 1A].

Plant epiphytic herb. *Stem* 46-86 cm long, pendent. *Leaves* 8-13, 11.5-23 × 2.8-4.7 cm, oblong-elliptic, tip unequally 2-lobed, obtuse. *Inflorescence* 9-16 cm long, 2 to 4-flowered; *peduncle* 3.5-9 cm long, glabrous; *rachis* 9-14 cm long, glabrous; *pedicellate-ovary* 2.3-3.1 cm long. *Flowers* 5.5-7 cm across, fleshy; white externally, internally chocolate-brown, finely striped with yellow; *floral bracts* broadly oblong.

Flowering

March – June.

Fruiting

May – July.

Specimen Examined

Neora Valley 2200 m, Yonzone and Rai 1067, dt. 08.

03. 2010.

Current Availability Status

Rare.

Local Distribution

Forest areas of Todey, Sukiapokhari, Lava, 700 – 2300 m.

Geographical Distribution

India (North East India, Sikkim, West Bengal).

Esmeralda clarkei Rchb. f., Gard. Chron. n.s. 26: 552. 1886. [Fig. 1B].

Plant epiphytic herb, 45-135 cm tall. *Stem* sheathed. *Leaves* 7-14, 9-21 × 2.4-3.6 cm, coriaceous, oblong, tip unequally 2-lobed, margins undulate, jointed. *Inflorescence* erect, 3 or 4-flowered; peduncle 4-6 cm long, glabrous; *rachis* 10-16 cm long, glabrous; *pedicellate-ovary* 3.4-4.1 × 0.4-0.6 cm. *Flowers* 5.8-8.5 cm across; pale-green, transversely streaked with red; floral *bracts* ovate.

Flowering

September – December.

Fruiting

November – January.

Specimen Examined

Lava forest 2000 m, Yonzone and Rai 0753, dt. 14. 12. 2008.

Current Availability Status

Rare.

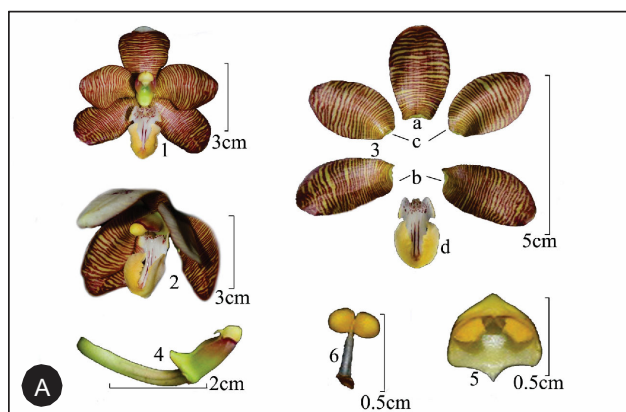


Fig. 1A. *Esmeralda cathcartii* (Lindl.) Rchb. f.: 1, Front view of single flower; 2, Angled view of single flower; 3, Floral perigone, a, dorsal sepal; b, lateral sepals; c, petals; d, lip; 4, Side view of pedicellate ovary, column with anther *in situ*; 5, Front view of anther; 6, Pollinia.

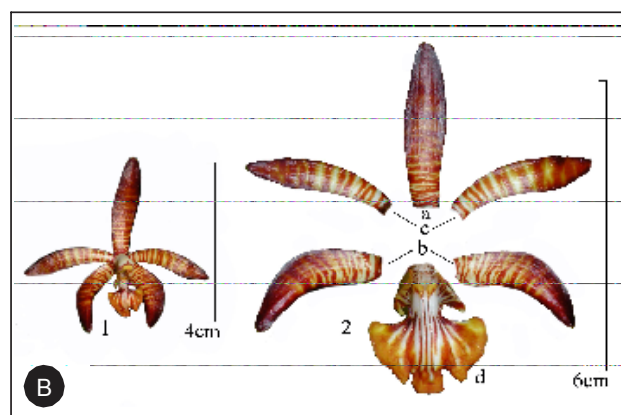


Fig. 1B. *Esmeralda clarkei* Rchb. f.: 1, Front view of single flower; 2, Floral perigone; a, dorsal sepal; b, lateral sepals; c, petals; d, lip.

Local Distribution

Todey, Algarah forest, Damsang Gari, Chimney-Kurseong, 1400 – 2000 m.

Geographical Distribution

India (North East India, Sikkim, West Bengal); Bhutan, China, Myanmar, Nepal.

Results and Discussion

During recent field studies in the Darjeeling Himalaya of India, two *Esmeralda* orchid species were recorded. Current availability status of these species was observed as rare throughout the study regions. *Esmeralda cathcartii* generally flowers in the beginning of March and lasts till the month of June and is available at an altitudinal range of 700 – 2300 m; it is distributed in Todey, Neora Valley, Lava of Kalimpong Sub – division and Sukiapokhari forest of Darjeeling Sub – division. Another species *Esmeralda clarkei* Rchb. f., flowers in the month of September and lasts till December and is available at 1400 – 2000 m above the mean sea level; it is distributed in Lava, Todey, Algarah forest, Damsang Gari of Kalimpong Sub – division and Chimney-Kurseong Sub – division of the regions. Conservation of natural habitat of these species is highly emphasized so as to protect these species in the region.

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