



NOTE

Rediscovery of *Berberis nilghiriensis* Ahrendt (Berberidaceae) from Nilgiris, Tamil Nadu, Southern India

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ABSTRACT: The critically endangered *Berberis nilghiriensis* Ahrendt, endemic to the Nilgiri hills in South India is rediscovered after 140 years, with three extant populations of ca. 25 individuals in the Nilgiri hills. Taxonomic treatment along with threat status, ecology, and economic uses are provided and urgent conservation is suggested to prevent its local extinction as the species is exposed to continued anthropogenic disturbances.

KEY WORDS: *Berberis nilghiriensis*, critically endangered, rediscovery, taxonomy.

INTRODUCTION

The genus *Berberis* L. ca. 600 species are distributed chiefly in the tropical and subtropical regions of the world (Mabberley, 2008). Hooker & Thomson (1875) reported 12 species from erstwhile British India of which, one species occurs in South India (Gamble, 1915). However, the recent revision by Rao et al. (1998) has reported 55 species from the Indian Subcontinent.

Botanical explorations for collection and cataloguing of endemic plant species were conducted in the Nilgiri hills, during 2009–2011. During this, the authors rediscovered three populations of *B. nilghiriensis* with about 25 mature individuals at Doddabetta (in March 2010 and February 2011) and Ammagal near Kundha (in February 2011), this indicates its wider occurrence in the Nilgiris (Fig. 3). Ahrendt (1945) described this species on the basis of C. B. Clarke's collection (from the Nilgiri Hills on 7 March 1870, Clarke 10504 deposited in K). Rao et al. (1998) stated that "The authors were unable to locate any collections of this species in any Indian herbaria. But one of the authors had a chance to examine the type in K". Nayar (1996) catalogued this species as critical while Rao et al. (2003) treated it as vulnerable. According to IUCN (2011), the species is currently categorized as 'Critically Endangered'. Hence the present collections of *B. nilghiriensis* are significant as they constitute a rediscovery of this species after 140 years from their type locality in the Nilgiris.

Based on earlier literature (Blasco, 1971; Sharma et al., 1977; Chithra, 1983; Ahmedullah and Nayar, 1987; Pascal and Ramesh, 1997; Puyravaud et al., 2003), it is

evident that after the collection made by Clarke in 1870 (Holotype) the species was not reported to have been collected again.

The soil properties of Nilgiris are mainly derived from gneissic rocks, which had undergone considerable weathering as shown by their acidic nature and low calcium content. The soils are abundant in sesquioxides. During summer the region sees a maximum of 21°C to 25°C and the minimum of 10°C to 12°C and the temperature in winter hovers between a maximum 16°C to 21°C and minimum of 2°C. The plants are collected in the elevation of above 2000 m above MSL in the disturbed shola patches. The ongoing anthropogenic disturbances in the area, pose threat to the existing narrow populations of the species which therefore needs to be conserved immediately. It is observed that one of its allied species *B. tinctoria* Lesch., the fruit is edible and also used in making jams and jellies. There is every possibility that this species also can be used for the same purpose.

The species can be easily segregated from its allied *B. tinctoria* Lesch. and *B. wightiana* Schneid. by the emarginated nature of petals. The specimens examined have been deposited in the Bharathiar University Herbarium (BUH).

TAXONOMIC TREATMENTS

Berberis nilghiriensis Ahrendt, J. Roy. Asiat. Soc. Bengal. Ser. 3, 11: 1. 1945; et in J. Linn. Soc. Bot. 57: 94. 1961; Chatterjee in Rec. Bot. Surv. India 16(2): 17. 1953; Rao & Naithani in Sharma et al., Fl. India 1:385. 1993; Rao et al. in Rheedea 8(1): 16. 1998. Figs. 1 & 2



Fig. 1. Habit of *Berberis nilghiriensis*. Inset: an enlarged view petal showing emarginated apex.

Type: South India – Nilgiri Hills, 7000 ft., 7 March 1870, *Clarke 10504* (K, Photo!)

Shrubs; 2–2.5 m tall; stem glabrous, with vertical lines; internodes 1–3 cm long; spines 2–3–4-partite, central longer than laterals. Leaves 4–7 at each node, 1.5–5 × 0.7–1.8 cm, oblong-obovate, petiolate, base cuneate, margins entire, sometimes slightly undulate, veins reticulate, apex mucronate, grey pruinose below. Prophylls 4 × 3 mm, red, ovate, obtuse. Inflorescence racemose, 6–15 flowered, including peduncle 2.5–8 cm long. Flowers yellow, 4–6 mm in diameter; pedicels 4–9 mm long. Outer sepals 3, 4.2–5 × 2.5–3 mm, elliptic, inner sepals 3, 6–6.5 × 3.8–4.2 mm, obovate. Petals 6, 7 × 4 mm, obovate, emarginated with rounded lobes, base clawed with linear lanceolate glands. Stamens 6, ca. 4 mm long, anti-petalous. Berries 6–9 × 2–2.5 mm, ellipsoid-oblong, greenish-purple when young, turning pruinose blue or pinkish when mature.

Flowering and Fruiting: Feb.–Apr.

Ecology: Along the fringes of Shola forest.

Distribution: Endemic to Nilgiris, Tamil Nadu.

Specimens examined: INDIA–Tamil Nadu, Nilgiri District, Doddabetta peak, 2637 m, 14.03.2010, *Honey John A & Siljo Joseph 5162* (BUH); Doddabetta peak, 2525 m, 16.02.2011, *V.S. Ramachandran 5196, 5197, 5199* (BUH); Kundha, 2036 m, 14.03.2011, *R. Mahadevan 5215* (BUH).

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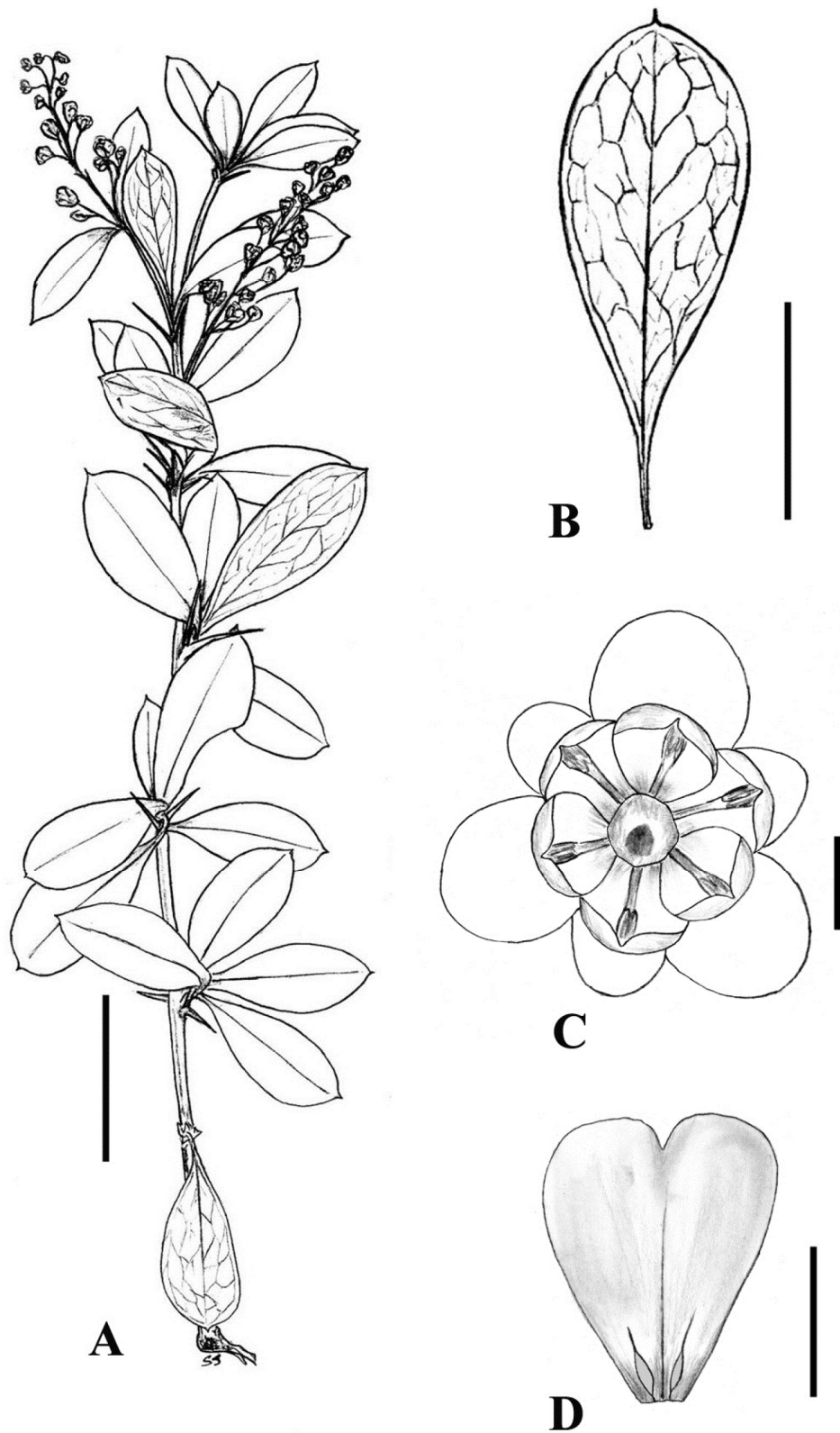


Fig. 2. *Berberis nilghiriensis*. A: Flowering twig. B: Leaf. C: Flower. D: Petal. Scale bars: A: 3 cm. B: 2 cm. C & D: 3 mm.



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Fig. 3. Map showing the distribution of *Berberis nilghiriensis* in the Nilgiris of India.

自南印度坦米爾納德邦尼基里斯山脈對 *Berberis nilghiriensis* (小檗科) 之再發現

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摘要：本文於140年後，再次發現了尼基里斯山的極危特有種 *Berberis nilghiriensis* Ahrendt，並發現了三個現存族群，每個族群大小約25個個體。本文除描述本種之分類處理，也提供了族群受威脅等級、生態分布及經濟用途；本文也強烈建議該種急需保育作為，以避免因持續的人為擾動而造成局部滅絕。

關鍵詞：*Berberis nilghiriensis*、極危、再發現、分類。