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Cover: Nile Crocodile *Crocodylus niloticus* regulating body temperature on a warm day. Digital art on Procreate by © Aakanksha Komanduri.

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NOTE

Rhododendron pendulum (Ericaceae) from Singalila National Park: an addition to the flora of West Bengal, India

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The European botanist Joseph Dalton Hooker surveyed the eastern Himalaya between 1849 and 1851 and identified 34 new species of *Rhododendron*, including *Rhododendron pendulum* (Hooker, 1849–1851). Furthermore, he opened the *Rhododendron* treasure in the Sikkim Himalaya (Mainra et al. 2010).

The eastern Himalaya have a distinct geographical distribution of *Rhododendron pendulum*, including Bhutan, Nepal, China (South Xinjiang and Tibet), and India (Arunachal Pradesh and Sikkim) (Wangyel et al. 2018; Gogoi et al. 2022). This species inhabits the temperate to subalpine zones of the eastern Himalaya at elevations ranging 2,500–3,800 m. Various sources have reported slightly different elevation ranges, such as 2,000–3,500 m and 1,800–3,500 m (Gogoi et al. 2022).

This species is endemic to the previously classified eastern Himalayan biodiversity hotspot (Tiwari et al. 2006). This species, belonging to the Edgeworthii series, has bud-shaped peltate hairs, as characterised by Cowan (1950).

The Darjeeling Hills comprise 21 taxa of *Rhododendron* from Singalila National Park (Rai et al. 2013), as well as a new variety of *Rhododendron grande* var. *singalense* (Rai et al. 2014). Thapa (2016) found *R. camelliiflorum* in the Darjeeling Hills and revised the total *Rhododendron* taxa to 22.

The study was conducted in the Singalila National Park, which is in the Darjeeling District of West Bengal, India, 27.2208° N & 88.0308° E (Figure 1) . During several field visits to the Park in April, May, and September, we encountered an interesting miniature plant resembling *Rhododendron edgeworthii* (Image 1) at elevations of 3,046.611 m and 3,064.341 m (Images 2). The species was partially distributed across a few sites within the Park. The collected specimens were identified using previous studies (Hooker 1849; Clarke 1882; Hara 1966; Long & Rae 1991; Fang et al. 2005; Sekar et al. 2010; Gogoi et al. 2022). After a comprehensive examination of eHerbaria, the Botanical Survey of India [CAL0000017234], the National Herbarium of Nepal, Kathmandu [KATH098019], the Bhutan National Herbarium, Thimphu [THIM18973], and through the literature cited, we gained a clear understanding of the species, ensuring the accuracy and reliability of our findings.

Herbarium was prepared following the method outlined by Jain & Rao (1976). The voucher specimen was submitted to the Sikkim Botanical Survey of India, and they have provided authentication with the

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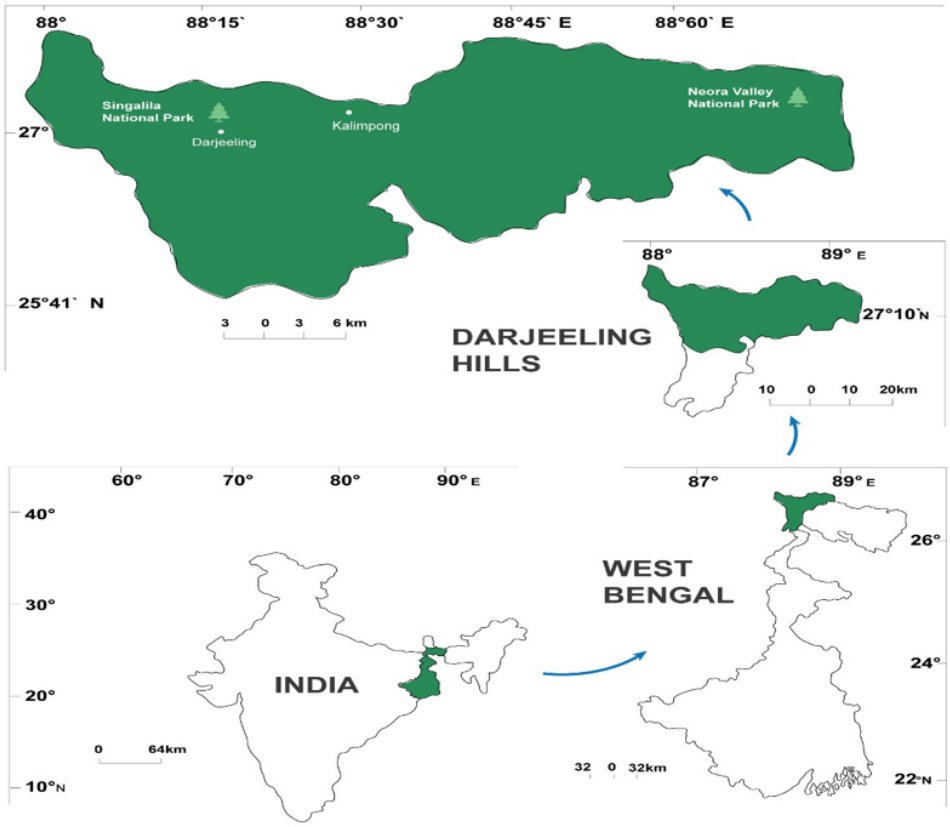

Figure 1. Study area in Darjeeling Hills.

Image 1. a—*Rhododendron pendulum* & b—*Rhododendron edgworthii*. © Sulaxana Baraily.

accession number 0313. A detailed morphological description, along with photographs and sketches, is included (Image 3 & 4).

Specimen Examined: *Rhododendron pendulum* Hook.f., Rhododendron of Sikkim Himalaya t.13 n.14 (1849–1851); Long & Rae, Flora of Bhutan, Vol. 2, Part 1:379 (1991); Pradhan, K.C., The Rhododendron of Sikkim 26–29 (2008).

Morphology: *Rhododendron pendulum* Hook.f. is characterized as an epiphytic as well as a lithophyte. They reach a height of 0.5–1.5 m. Young shoots are densely tomentose. Leaves are oblong-elliptic, 2.8–5 cm long, 1.5–2.8 cm broad, apex obtuse, mucronate, base rounded, margin entire, hairy, slightly revolute, abaxial surface woolly, scaley, adaxial surface dark green, smooth, shiny, pubescent, veins reticulate, anastomosis. Petiole marginal, green to brown, slightly reddish, tomentose, 0.4–1 cm long. Inflorescence terminal, 1 or 2 flowered, without fragrance, pedicel 0.5–0.8cm long, hairy. Corolla tubular, 1.5–1.8 cm long, 2.5–3 cm broad at mouth, broadly funnel-shaped, wavy, five-lobed, white to pale yellow, flushed with pink outside, with brownish spots inside. Calyx well developed, regular, five-lobed, 0.4–0.9cm long, green or tinged pink, ciliated, oblong to ovate. Bracts hairy, ovate, 0.3–0.8 cm long. Stamen 10, almost equal. 0.9–1cm long, filaments hairy at base, anthers light brown, 0.3–0.4 cm. Style slightly hairy, 0.4–6 cm long, stigma capitate, style slightly deflexed, 0.3–0.5 cm, ovary ovoid, hairy, 0.1–0.3 cm long. Capsule ovate, 0.7–1.2 cm long, 0.8–1 cm in diameter, with five valves, tomentose.

Vernacular Name: Jhundinae Chimal (Nepali of Sikkim)

Flowering & Fruiting: April to May & September to October.

Habitat**:** They grow in moist, shady, and mountainous environments within temperate to sub-alpine regions as epiphytes or lithophytes. GPS Location: 27°08’96” N & 88°04’50” E at an elevation of 3,064.341 m in Rimbick fatak, Bikhay Banzang, Singalila National Park, Darjeeling, West Bengal.

Distribution: Bhutan, Nepal, China, Sikkim and West

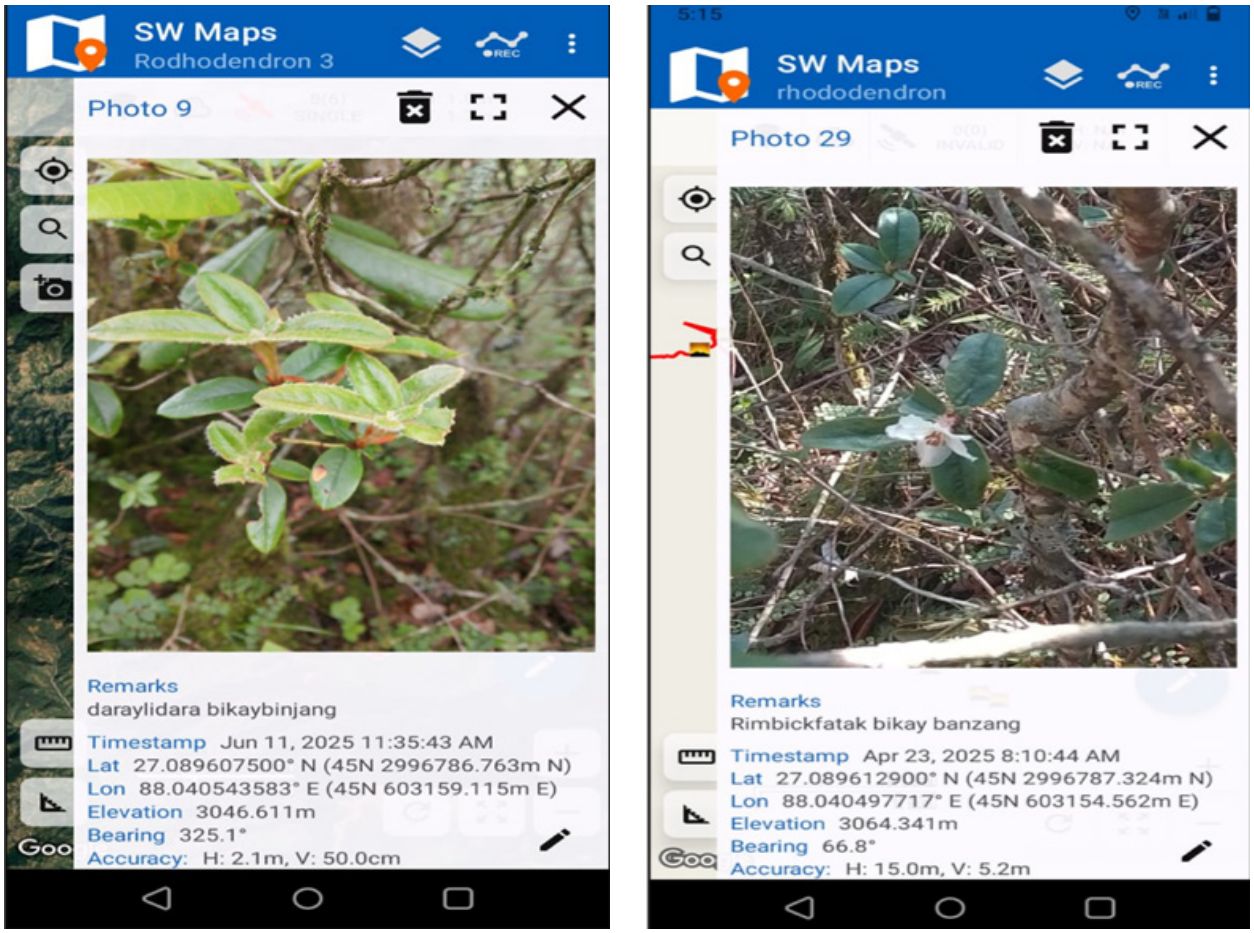

Image 2. GPS location. © Sulaxana Baraily.

Image 3. Sketch of the specimen: a—Inflorescence | b—Flower with Calyx | c—Gynoecium | d—Stamen | e—Ovary (T.S.) | f—Capsule. © Aswin Diyali.

Bengal (Darjeeling).

Status in the Park: Rare.

Our research added one more *Rhododendron* species to the flora of West Bengal, India. The Darjeeling Himalaya now comprises 23 Rhododendron taxa, including *Rhododendron pendulum* Hook.f. This species is considered rare within the Park. Consequently, from a conservation perspective, we have provided at least two capsules of *Rhododendron pendulum* for seed germination at the Chatakpur nursery in Sonada, Darjeeling, under the supervision of R.O. (HRR-II) Bimal Pradhan. The discovery of *Rhododendron pendulum* in West Bengal opens up possibilities for more ecological and genetic studies on this species. This new finding also highlights the diversity of species in the Himalaya, which is being driven by climate change. Since *Rhododendron pendulum* typically inhabits higher elevations, monitoring its presence at this site over time could help

Image 4. *Rhododendron pendulum*: A—Habitat | B—Inflorescence | C—Flower | D—Dorsal & Ventral sides of leaf | E1—Corola | E2—Carpel | E3—Stamen | E4—Calyx with bract | F—Capsule. © Sulaxana Baraily.

identify changes in its altitude range due to a changing climate.

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