

# *Drypetes assamica* (Putranjivaceae): A New Record of a Tree Species for the Flora of Nepal

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## Abstract

*Drypetes assamica* (Hook.f.) Pax & K.Hoffm. (Putranjivaceae), a tree species from the eastern lowland of Nepal is reported here as a new addition to the flora of Nepal. A detailed description, notes on habitat and ecology, and photographic plate are provided.

**Keywords:** *Drypetes*, Flora of Nepal, New report, Taxonomy

## Introduction

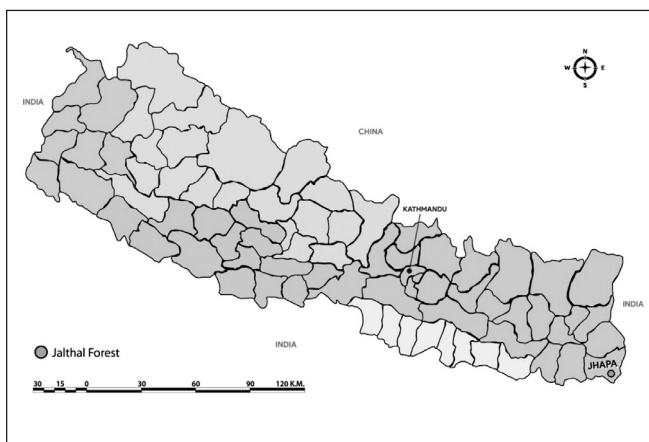
The genus *Drypetes* Vahl belongs to the family Putranjivaceae, and the majority of the species in this genus are dioecious trees and shrubs. The genus *Drypetes* is represented by over 210 species in the world (Govaerts et al., 2000; Quintanar et al., 2020). It is distributed in moist tropical and subtropical forests of Asia, Africa, America and Australia. In Asia, it is mainly distributed in India, Bhutan, southeast China, Myanmar and Malaysia. In India, the genus is represented by 21 species (Balakrishnan et al., 2012). In Bhutan the genus has three species (*D. indica*, *D. assamica* and *D. subsessilis*) (Long, 1987). Similarly, in China the genus is represented by 12 species (Li & Gilbert, 2008).

In Nepal, the family Putranjivaceae is represented by a single species *Putranjiva roxburghii* Wall.

(Rajbhandari & Rai, 2019). This report of *Drypetes assamica* from eastern lowland of Nepal brings the total number of genus and species to two in the family Putranjivaceae in Nepal. The species was collected in Jalthal forest in Jhapa district (Figure 1). Jalthal forest is a remnant tropical moist Sal (*Shorea robusta* Gaertn.) forest in the eastern lowland of Nepal, and is well known for its richness in native flora and fauna. *D. assamica* is a dioecious tree characterized by its simple alternate leaves; axillary inflorescence in small fascicles; unequal sepals; and 2-seeded drupe.

## Materials and Methods

Field surveys were conducted in the Jalthal forest of Jhapa district in March and November 2020. The species was recorded during vegetation surveys as well as forest transects walks conducted by authors and local people. Herbarium specimens with flowering and fruiting materials of the species were collected during several visits to the forest. The specimens along with photographs were studied and compared with related specimens at Royal Botanic Garden Edinburgh Herbarium (E), Tribhuvan University Central Herbarium (TUCH), and National Herbarium and Plant Laboratories (KATH). The specimens were checked against the relevant floras and checklists (Long, 1987; Press et al., 2000; Li & Gilbert, 2008; Balakrishnan et al., 2012; Rajbhandari & Rai, 2019) to confirm its



**Figure 1:** Map showing study area in Jhapa district.

identification. Local flora like flora of eastern Terai by Siwakoti & Varma (1999), a checklist of Jalthal forest (Bhattarai, 2017), and list of trees in National Forest Resources Assessment (FRA/DFRS, 2014) were also checked. The subject expert was consulted personally for the information about the species.

### Taxonomic treatment

*Drypetes assamica* (Hook.f.) Pax & K.Hoffm., Pflanzennr. (Engler) Euphorb.-Phyllanthoid.-Phyllanth.147, 15 (Heft 81): 241. 1992.



**Figure 2:** *Drypetes assamica*. a. Fruiting branch. b. Flowering branch with male flowers. c. Flowering branch with female flowers. d. Male flower (enlarged). e. Female flower (enlarged). f. Ripe fruit.

**Basionym:** *Cyclostemon assamicus* Hook.f.

Evergreen trees to 12 m, diameter at breast height (DBH) up to 15 cm, dioecious. Bark grey, smooth. Petioles up to 1 cm, rusty tomentose mainly on groove. Leaves alternate, lanceolate to elliptic, 12–

16 × 4–8 cm, base broadly cuneate or rounded, apex acuminate, margin entire or subentire, coriaceous, glabrous, pinnately veined, midrib prominent, lateral veins 9–15 on each side of midrib. Inflorescence axillary in small fascicles. Male flowers ca. 8 mm in diameter, pedicellate; pedicel ca. 3 mm long; sepals 4, orbicular or obovate, unequal, glabrous above, pubescent beneath, pale green; outer 2 smaller, ca. 3 × 3 mm; inner 2 slightly bigger, ca. 4 × 4 mm; petals absent; stamens 8–12(–14); filaments glabrous, white, ca. 3 mm; anthers basifixed, ca. 1.5 mm. Female flowers pedicellate; pedicel ca. 3 mm; sepals 4, obovate or orbicular, unequal, glabrous above, pubescent beneath, pale green; outer 2 smaller, ca. 3 × 3 mm; inner 2 slighter bigger, ca. 3.5 × 5 mm; petals absent; disk present; ovary globose, pubescent, 2 × 2 mm; style 2, very short; stigma ca. 2 × 3 mm, fan-shaped. Drupes ellipsoid, 1.8 × 1.4 cm, coriaceous, shallowly furrowed, appressed pubescent, hairs brown, 2–seeded. Seeds 1.4 × 0.6 cm.

Notes: *D. assamica* is morphologically close to *D. subsessilis* (Kurz) Pax & K.Hoffm. but easily differentiated by its male flower with 8–12(–14) stamens (vs. 3–4 in *D. subsessilis*). The pedicels in male and female flowers are smaller (2–3 mm) on Nepalese specimens compared with specimens from Bhutan and India (>3).

**Flowering:** October–November;

**Fruiting:** November–April

**Ecology:** Near streams and gullies as understory tree in moist Sal (*Shorea robusta* Gaertn.) forest.

**Distribution:** Tropical and subtropical forests of Nepal, India, Bangladesh, Bhutan, Myanmar, and Thailand. In India, it occurs in North eastern states up to 1400 meter above sea level (Efloraindia, 2021).

**Specimen examined:** Eastern Nepal, Jhapa district, Haldibari rural municipality–4, Jalthal, 26.45°N, 88.02°E, 90 m, 20 March 2020, L.N. Sharma & Y.B. Poudel J03 (TUCH, KATH); Eastern Nepal, Jhapa district, Haldibari rural municipality–4, Jalthal, 26.50°N, 88.027°E, 88 m, 17 November 2020, Y.B. Poudel & L.N. Sharma J04 (TUCH, KATH).

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