

Shortnote

Euphorbia umbellata, a newly recorded naturalized species from Nepal

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Euphorbia umbellata, a member of the family ‘Euphorbiaceae’, is a succulent, evergreen shrub or a small bushy tree, typically reaching heights of 5 m and occasionally up to 10 m. It has been documented as a naturalized species in Salyan and the neighboring regions of Nepal (refer to Figure 1). This particular species stands out from other *Euphorbia* species due to its distinct leaves with visible venation and its green to yellowish-green flowers, which are mostly

hidden by lance-shaped bracts that are purplish-green on top and reddish-purple underneath.

The Euphorbiaceae family consists of 218 genera and 6745 species found in tropical regions worldwide, with 249 taxa in South Asia (Stevens, 2012; Pahlevani et al., 2020). Most members of this family are monoecious herbs, shrubs, and small trees, although some display xerophytic adaptations as succulent and cactus-like plants



Fig. 1. Map showing the distribution of *E. umbellata* (indicated in red patches) in Nepal.

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(Esser et al., 2009; Stevens, 2012). There are 39 genera and 2810 species in the subfamily 'Euphorbioideae'. The genus *Euphorbia* L. is the largest within this sub-family, containing approximately 2420 species (Stevens, 2012). Up to now, 20 species of *Euphorbia* have been documented in Nepal (Shrestha et al. 2022), and this discovery will contribute to the nation's floral record. The species was formerly known as *Synadenium grantii* Hook. f., and it has cyathia with glands that are arranged in a ring, while the

glands of *Euphorbia* species are distinct from each other.

Recent molecular analyses have demonstrated that the species of *Synadenium* are nested within *Euphorbia* section *Monadenium* (Bruyns et al., 2006; PROTA, 2017). The name *Synadenium grantii* is still used in horticultural trade; however, the accepted name is *Euphorbia umbellata* (Pax) Bruyns.



Fig. 2. A–C: Individuals of *E. umbellata*; D–F: flowers of the species; and G: *E. umbellata* plants in their natural habitat.

Taxonomic description

Euphorbia umbellata (Pax) Bruyns in *Euphorbia World* 3: 5 (2007)

Shrubs or small trees can reach heights of 3–10 m, with a few thick erect branches and succulent stems. The leafy branchlets are 3–10 mm thick, terete, and without hairs. The leaves are fleshy and arranged spirally, clustered towards the ends of the stems as shown in Figure 2, with petioles that blend into the leaf bases. The leaf blades measure 5–17 cm in length and 2–6 cm in width, and are narrowly obovate to oblong-obovate or oblanceolate, with obtuse apex, entire or minutely denticulate margin, and cuneate base. The underside of the leaves is green or often reddish, and they are mostly hairless except along the edges or near the base. There are 9–14 strongly ascending secondary veins on each side. The flowers are green to yellowish-green and are mostly hidden by lance-shaped bracts, which are purplish-green on top and reddish-purple underneath. Inflorescences- 1.0–1.5 cm long, red or green, peduncles- 5 cm long, branching dichotomous, bracts up to 3 mm long below the cyathium; cyathia- 4 mm diameter. This description is based on Burger & Huft (1995) and our own observation.

Habit: Shrub or a small bushy tree.

Habitat: Seasonally dry tropical biome.

Distribution: Native to Africa and widely spread around the world.

Uses: Used as hedge plant or medicinal plant and rarely as ornamental plant.

Medicinal values

Despite its toxicity and ability to cause skin and mucous membrane irritation, latex has been used internally to combat internal parasites. Warmed leaves are utilized to extract several drops of latex for expelling intestinal parasites and, on occasion, tapeworms. The sap from the leaves is also employed to address cardiac issues and excessive menstruation. A small amount of latex is applied

topically to warts, as well as to sores as a treatment for syphilis. Additionally, latex is used to help abscesses mature. The toxic potential of the latex from *E. umbellata*, due to the presence of certain phorbol-type diterpenes, is acknowledged when it is mixed with water and consumed as a treatment. The sap is extremely irritating to the skin, eyes and mouth. Skin contact can cause blisters. All plant parts are considered very poisonous (Ernst *et al.*, 2015).



Figure 3. Herbarium specimen of *E. umbellata*.

Distribution of *E. umbellata* in Nepal

In Nepal, the plants of this species were reported to be growing wild in the form of shrub either in the open dry areas or on the roadsides within the altitude of 800–1700 m above the mean sea level (msl) in the following localities:

- i. Kapurkot, Salyan to Kumakh Salyan (28°14'47"–28°37'41" N latitudes and 82°11'36"–82°21'07" E longitudes);

- ii. Padukasthan, Dailekh Karnali ridge (28°53'24"–28°49'34" N latitudes and 81°34'10"–81°34'06" E longitudes);
- iii. Bheri River to near hospital Road, Jajarkot (28°40'50"–28°41'57" N latitudes and 82°11'31"–82°12'00" E longitudes);
- iv. Bheri base to Chhinchu Road, Surkhet (28°27'30"–28°30'51" N latitudes and 81°35'09"–81°43'25" E longitudes); and
- v. Musikot to Syarpu Lake, Rukum, west (28°34'58"–28°41'39" N latitudes and 82°29'18"–82°33'02" E longitudes).

Plant specimen collection point: Mulpani Village Salyan (28°14'47" N latitudes and 82°21'07" E longitudes; 1500 m above the msl)

Date of collection: November 11, 2023.

Collected by: Dr. M. L. Pathak and Mr. B. Sen

The herbarium specimen of *E. umbellata* (MLBG20230121, see Figure 3) was prepared and sent to the KATH Laboratory (located at Godawari, Lalitpur) for deposition. The specimen was checked and verified by Ms. Pratikshya Chalise (Research Officer, KATH, Godawari, Lalitpur).

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