

## *Phyllanthus tenellus* Roxb. (Phyllanthaceae) an addition to the flora of Rajasthan

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### Abstract

The *Phyllanthus tenellus* Roxb. belongs to the family Phyllanthaceae. So far, the distribution of this species has been recorded from Andhra Pradesh, Telangana, Karnataka, and Kerala. This is native to Mascarene Islands, now introduced into Tropics and sub tropics. This paper deals with the information about *Phyllanthus tenellus* Roxb. Which has been reported as introduced species first time from the state of Rajasthan, India.

This paper documents the first record of *Phyllanthus tenellus* Roxb. (Phyllanthaceae) in Rajasthan, India. The species was discovered in a semi-arid region, expanding its known geographical range. Detailed morphological descriptions, habitat characteristics, and ecological significance are provided. This finding contributes to the floristic diversity of Rajasthan and emphasizes the need for further botanical exploration in the region.

**Keywords:** *Phyllanthus tenellus*, phyllanthaceae, Rajasthan, floristic diversity, new record

### Introduction

Rajasthan is the largest State of India and well known for its bio-geographical habitats viz. arid and semi-arid. Rajasthan state is situated between 23°3' and 30°12' N latitude and 69°30' and 78°17' E longitude. The total land area of the state is about 3,42,239 km<sup>2</sup>. The average annual rainfall in the state is 525-675 mm, and the annual precipitation in different tracts of Rajasthan varies from 13 mm to 1766 mm. Within these arid and semi-arid habitats around 2400 different flowering plants are recorded. These unique habitats always attract plant lovers for its floral diversity.

A review of the literature on the flora of Rajasthan—including works by Bhandari (1978, 1990)<sup>[2]</sup>, Puri *et al.* (1964)<sup>[12]</sup>, Sharma and Tiagi (1979)<sup>[19]</sup>, Shetty and Pandey (1983)<sup>[24]</sup>, Singh (1983)<sup>[31]</sup>, Shetty and Singh (1987, 1991, 1993)<sup>[25]</sup>, Sharma *et al.* (2005)<sup>[20]</sup>, Singh and Singh (2006)

<sup>[28]</sup>, and Singh and Srivastava (2007)<sup>[29]</sup>—indicates that *Phyllanthus tenellus* has not been reported in any of these floras. Therefore, this species represents a new record for Rajasthan and warrants publication.

The Angiosperm members of Phyllanthaceae and genus *Phyllanthus* L. (Phyllanthaceae) comprises numerous species widely distributed across tropical and subtropical regions.

*Phyllanthus tenellus* is native to Angola, Comoros, Madagascar, Mauritius, Mozambique, Réunion, Saudi Arabia, Tanzania, and Yemen (Coode *et al.* 1982; Zare *et al.* 2015; Hariri *et al.* 2020a), but it is regarded as an alien or naturalised plant in at least 30 countries (POWO 2021) (Fig. 1). Several species have been reported from different parts of India, with notable occurrences in humid and semi-humid environments.

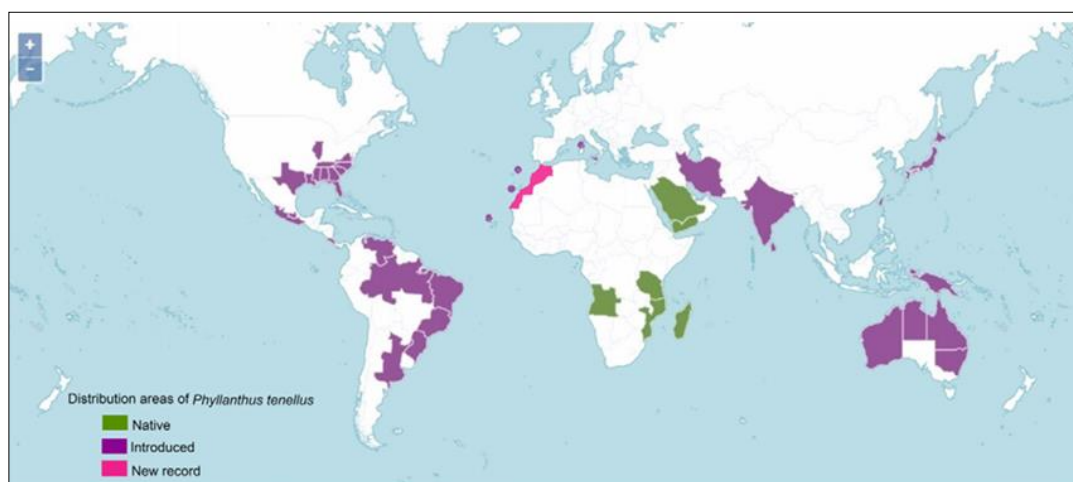


Fig 1: Distribution of Species

### Here is a brief introduction-

*Phyllanthus tenellus* Roxb.

**Family:** EUPHORBIACEAE (Spurge Family)

**Family (Hindi name):** AMLA FAMILY (आँवला फैमिली)

**Family (as per the APG System III):** Euphorbiaceae

**Synonym(s):** *Phyllanthus corcovadensis* Müll.Arg.; *Diasperus tenellus* (Roxb.) Kuntze; *Phyllanthus minor* Fawc. & Rendle

**Species Name (as per the IPNI):** *Phyllanthus tenellus* Roxb.

**Habit:** Herb

**Flower, Fruit:** Throughout the year

#### Distribution

**Andhra Pradesh:** Anantapur district, Chittoor district, Kadapa district, East Godavari district, Guntur district, Krishna district, Kurnool district, Nellore district, Prakasam district, Srikakulam district, Vishakapatnam district, Vizianagaram district, West Godavari district

**Telangana:** Nalgonda district, Khammam district, Mehboobnagar district

**Karnataka:** Bengaluru district, Dakshina Kannada district

**Kerala:** Malappuram district, Palakkad district, Thrissur district, Alappuzha district, Thiruvananthapuram district

**Native:** Mascarene Islands

**World Distribution:** Introduced into Tropics and sub tropics

However, the presence of *Phyllanthus tenellus* Roxb. in Rajasthan, a predominantly arid and semi-arid state, has not been previously documented.

Species of Phyllanthaceae contained within The Plant List belong to 58 plant genera. The Plant List includes 5,429 scientific plant names of species rank for the family Phyllanthaceae. Of these 2,099 are accepted species names. The Plant List includes a further 954 scientific plant names of infraspecific rank for the family Phyllanthaceae. We do not intend The Plant List to be complete for names of infraspecific rank. These are primarily included because names of species rank are synonyms of accepted infraspecific names.

#### Material and Methods

A detailed field survey was carried out to document the plant species in Smriti Van, Jaipur (Rajasthan), particularly focusing on the taxa introduced during the creation of Smriti Van as biodiversity park. Few species were found other than the introduced ornamental plants and local flora. Specimens of *Phyllanthus tenellus* Roxb were collected and photographed, identified using standard taxonomic keys, and also compared with herbarium records (Fig.2) &(Fig.3) After critically examining the species with the help of various literature and experts, it has been concluded that these specimens belong to *Phyllanthus tenellus* Roxb.

#### Taxonomic description

Erect annual herbs 20-75 cm tall; stem simple or with permanent branchlets, subterete below, channelled above, glabrous, 3-12 cm long, with 10-25 leaves. Leaves alternate, 0.5-2.1 x 0.3-1.1 cm, broadly elliptic to obovate, subacute at tip, acute to rounded at base; petioles 0.5-0.8 mm long; stipules lanceolate-acuminate, 0.8-1.2 x 0.2-0.3 mm. Flowers minute in axillary bisexual or unisexual cymes of 1-5 flowers on deciduous branchlets. Male flowers 1.5 mm across, white, 1-3 in unisexual cymes of 1 or 2 proximal nodes and in bisexual cymes of succeeding 3-10 nodes with female flowers; pedicels filiform, 0.5-1.5 mm long;

sepals 5, imbricate, broadly obovate, acute to rounded at apex, 0.5-0.7 x 0.5-0.8 mm, membranous, whitish with a narrow greenish midrib; disk segments 5, broadly cuneate, thin, entire, 0.2 mm across; stamens 5, free, alternate with the disk segments; filaments filiform, 0.2-0.4 mm long, bent near the tip; anthers oval, dehiscing vertically. Female flowers 1.4-1.6 mm across, 1 or 2 in the bisexual cymes of proximal 3-10 nodes and solitary in the succeeding distal nodes; pedicels capillary, 2.5-6 mm long, terete basal olive green; sepals 5, triangular-ovate, 0.6-0.8 x 0.3-0.5 mm, whitish with a thick greenish midrib, somewhat cuculate and acute at the apex; disk annular to somewhat 5-gonoal, membranous; ovary smooth; style 3, appressed to ovary, cleft to 2/3; lobes diverging, the tips subcapitate. Capsule depressed-globose, 1.3-1.5 mm across, greenish, smooth; stalk 4-6 mm long; seeds trigonous, 0.75-0.8 x 0.6-0.65 mm, densely papillose.



Fig 2: Australian Tropical Rainforest Plants - Online edition

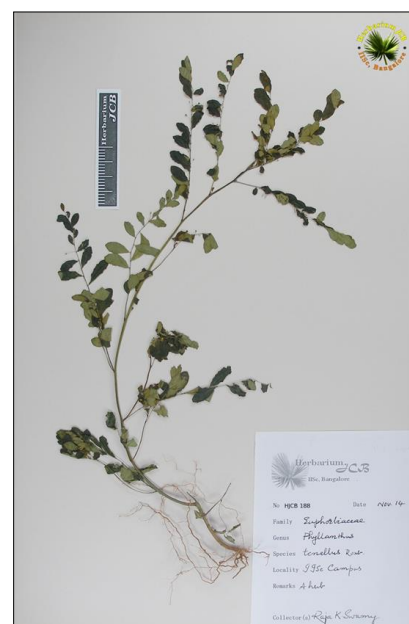


Fig 3: (*Phyllanthus tenellus* | Plants of the World Online | Kew Science)

**Specimens collected:** Plant from smriti van Jaipur for ID(ID-DKB139) Photo Taken on-27.11.2008 (Fig.4)

**Specimens examined:** send for examination to indiantreepix yahoo group of Expert of floral on 19 Jun 2009, Expert confirm as *Phyllanthus tenellus* Roxb. on 20 Jun 2009



**Fig 4:** Specimen for identification

### Results and Discussion

*Phyllanthus tenellus* was found growing in shaded and moist environments. The plant exhibits typical characteristics of the genus, including small, alternate, and distichous leaves, axillary flowers, and dehiscent capsules. It is likely that this species was unintentionally introduced from South India along with ornamental plants during the development of Smriti Van as a biodiversity park.

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