A rare bloom and a buzz of life: bee communities visiting *Strobilanthes callosus* flowering in the northern Western Ghats, India

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Bee visits to seasonal flowering plants are vital not only in facilitating pollination but also in providing essential nutritional resources for their survival. *Strobilanthes callosus* is a plietesial shrub endemic to northern and central Western Ghats, India, blooms once in seven years. We studied the bee pollinator community visiting *S. callosus* flowers during the peak blooming period (September–October) in 2024. We observed four types of honey bees – (*Apis dorsata*, *Apis cerana*, *Apis florea*, and Stingless bee) during *S. callosus* flowering, and *A. dorsata* was predominantly present at high altitude locations surrounded by tall cliffs. All four bees were observed at a high altitude location Kadave Ghat where *S. callosus* bloomed in the field of high altitude grassland. These observations suggest that the honey bee community at high altitude during peak flowering of *S. callosus* differs possibly due to habitat characters.

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significantly with elevation, where plants exhibit shorter blooming periods at higher altitudes[10,11].

Flowering phenology of the plants in the northern Western Ghats, India, is strongly associated with the monsoon season[12,13]. Monsoon in the Western Ghats is characterised by high rainfall for three to four months and low light intensity[14,15]. These climatic conditions have a big influence on photoperiod, temperature, and water resource allocation.

Strobilanthes (Blume, 1826; Family: Acanthaceae) blooms are popularly known as 'karvi' in the northern Western Ghats. *Strobilanthes* is one of the largest genus of the family Acanthaceae, and consists of approximately 450 species distributed in Asia[16]. In India, the genus *Strobilanthes* is represented by 150 species, of which 64 species have been recorded in the Western Ghats[17]. Many species of the genus *Strobilanthes* are plietesial with synchronous mass flowering at long intervals of 4–16 years[17,18]. *Strobilanthes callosus* is a shrub distributed in the northern Western Ghats and flowers once in seven years. In the year 2024, *S. callosus* flowering was reported at a few locations in the northern Western Ghats of Pune district, and we studied the bee community (honey bees and stingless bees) visiting *S. callosus* blooms at three locations in this region.

The study was carried out at three locations: Kadave Ghat (altitude 1500 m), Sinhagad Fort (altitude 1200 m), and Morgiri Fort (altitude 1000 m, Figure 1*a*). Sinhagad Fort and Morgiri Fort are hill forts surrounded by high cliffs, and Kadave Ghat is a hill grassland. The study locations were visited multiple times during September–October 2024. Flowering plants were