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Expanding the database: Documenting previously unrecorded host plants of monkey puzzle *Rathinda amor* and common lineblue *Prosotas nora* from Sanjay Gandhi National Park, Mumbai

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Abstract
The intricate relationship between butterflies and its host plants is fundamental to understand and conserve their biodiversity, particularly within urban ecosystems. This study documents previously unrecorded host plants for two lycaenid butterfly species within Sanjay Gandhi National Park (SGNP), Mumbai. A caterpillar of *Rathinda amor* was discovered feeding on the young leaves of True Ashoka (*Saraca asoca*) and was subsequently reared to adulthood to confirm the viability of the host plant. Similarly, caterpillars of *Prosotas nora* were observed on multiple occasions feeding on the flowers of Jewel Vine (*Brachypterum scandens*). These findings officially establish *S. asoca* and *B. scandens* as new host plants for *R. amor* and *P. nora*, respectively, thereby expanding the known larval host plant database. This research underscores the ecological significance of SGNP as a crucial habitat and highlights the importance of effective conservation strategies for butterflies and their associated plant communities in rapidly urbanizing landscapes.

Keywords: Lepidoptera, Rophalocera, India, Ecology, Polyphagy, Western Ghats, host plant

Introduction
The order Lepidoptera has been known to exist from the past 160 million years and particularly Rhopalocerans evolved about 100 million years ago (Sidhu, 2023; Kawahara *et al*., 2023b) [12, 22]. Since then the intricate process of speciation has given us about 18,000 species (FRIEND OF THE EARTH, 2022) [5]. Being the 7th largest country in the world it boasts about 1,500 species of butterflies with its rich and diverse range of ecosystems (Sidhu, 2023) [22].

This abundant butterfly diversity needs a set of host plants to reproduce successfully. Selection of host plants by several butterflies has been evolved with a reason that the digestive systems get well adapted to a particular set of chemicals so that the food intake can be assimilated and absorbed at full capacity, giving rise to conditions like monophagy, oligophagy and polyphagy (Kunte, 2000) [13]. As butterflies in their early stages depend upon host plants for their carbohydrate rich diet, hence many times butterfly diversity is directly linked with the plant diversity in the region (Kunte, 2000) [13].

Sanjay Gandhi National Park (SGNP) is home to about 142 butterfly species and along with it, it is also home to about 1300 species of flowering plants alone sustaining this huge butterfly diversity (Patwardhan, 2014; *Flora-Sanjay Gandhi National Park*, n.d.) [16]. The forest in this region is typically a southern mixed-deciduous type, characterized by dominant assemblages of *Tectona, Albizzia, Terminalia, Holarrhena, Firmiana, Dalbergia, Garuga, Grewia, Adina, Ficus, Madhuca, Caraya, Butea*, along with bamboo thickets (*Flora-Sanjay Gandhi National Park*, n.d.). Being a huge natural nursery with hundreds of host plants, factors on which butterflies choose their host plants still remain cryptic, mysterious and debated.

Methodology
Study Area
SGNP, within Mumbai Suburban & Thane districts of Maharashtra, India, is a significant urban national park renowned for its rich biodiversity amidst a densely populated metropolitan area. Spanning approximately 104 square kilometers, SGNP is providing a crucial ecological buffer and habitat for a diverse array of flora and fauna. The park's landscape is predominantly characterized by southern mixed-deciduous forests, interspersed with dry deciduous scrub, and rocky outcrops (Surve NS at al., 2022; Ranjendra D at el., 2021) [24]. The park's strategic location and varied habitats make it an important refuge for numerous wildlife species. SGNP's relatively large size and complex forest structure offer a mosaic of microhabitats, from open grasslands and scrublands to dense forest patches and water bodies like the Vihar and Tulsi Lake.

Documentation
This paper documents the following data in the form of incidental sightings.

- **Monkey Puzzle (*Rathinda amor*) feeding on True Ashoka (*Saraca asoca*)**

On 28th of August 2024 a caterpillar of *R. amour* was discovered feeding on a new host plant, *S. asoca* (Fabaceae) tree in the butterfly garden present at the Manpada (19° 14 '13.2"N 72° 57' 50.5"E). The tree was about 5m tall and the caterpillar was observed at a height of about 2 meters from the ground. The caterpillar was seen on the pink young leaves wandering amongst a few moth caterpillars (Fig 2. & Fig 3.).

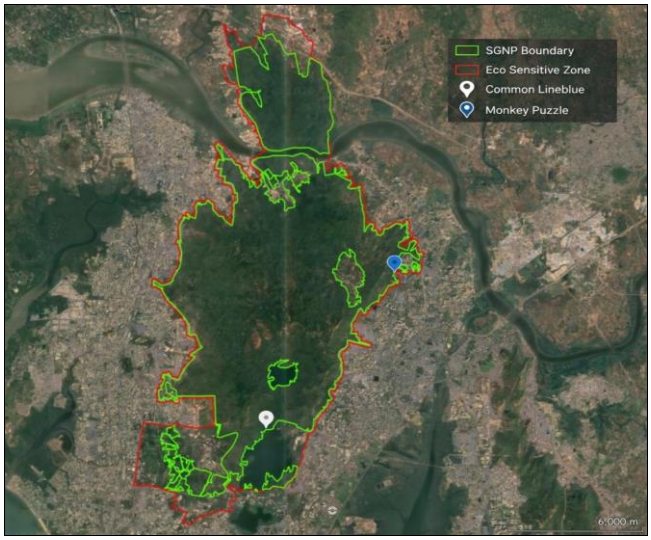

Fig 1: Sanjay Gandhi National Park's boundary and sightings of new host plants

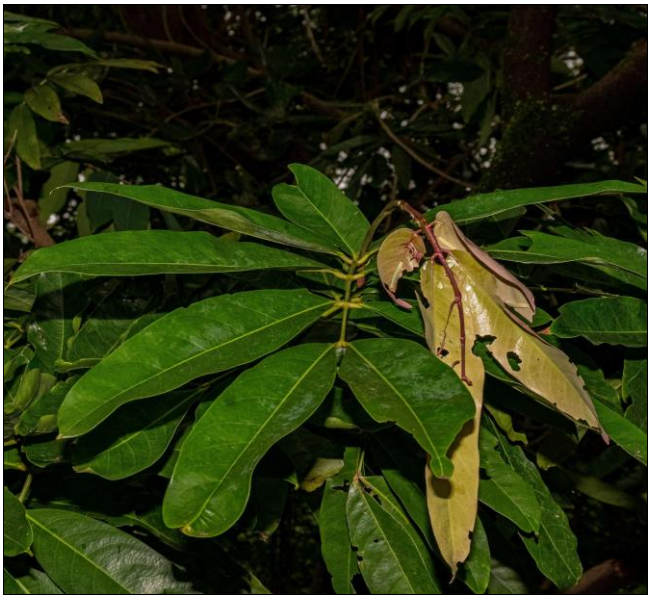

Fig 2: Image showcasing young and mature leaves of *S. asoca*

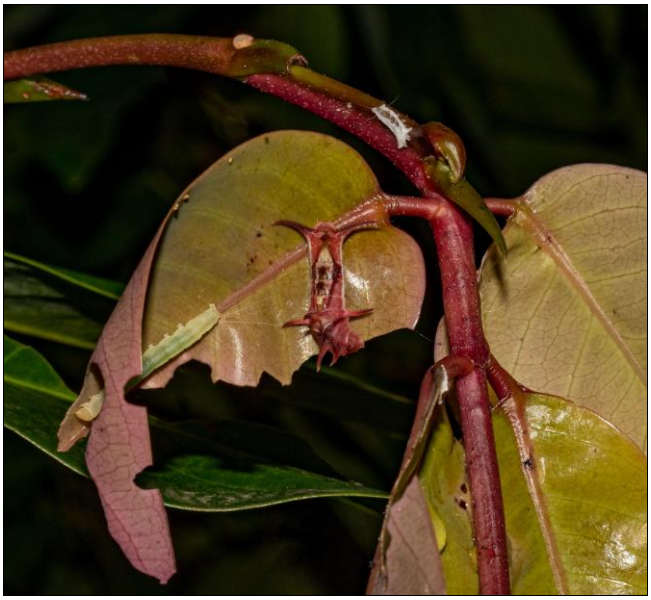

Fig 3: Image of the *R. amor* caterpillar (red) adjacent to a moth caterpillar (green)

- **Common Line Blue (*Prosotas nora*) feeding on Jewel Vine (*Brachypterum scandens*)**

On 1st January 2025 and 16th Feb 2025 two caterpillars of *P. nora* were observed to be feeding and wandering on flowers of climber *B. scandens* (Fabaceae) respectively (Fig 4. & Fig 5.). Both the individuals were recorded near the periphery of Vihar Lake (19° 10 '04.7"N 72° 54' 37.7"E). The documented vine was profoundly entangled on a Palash (*Butea monosperma*) tree. The caterpillars were observed approximately at a height of about 1m from the ground.

Fig 4: First individual of *P. nora* caterpillar photographed feeding on the flower petals of *B. scandens*, 1st January 2025

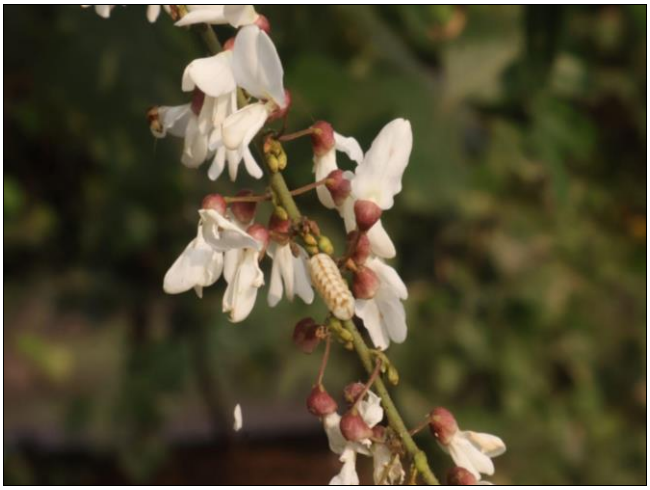

Fig 5: Second individual of *P. nora* caterpillar wandering on inflorescence of *B. scandens*, 16th February 2025

Results

1. Monkey Puzzle

Family - Lycaenidae (Leach, 1815)
Subfamily - Theclinae (Swainson, 1831)
Genus - *Rathinda* (Moore, 1881)
Rathinda amor (Fabricius, 1775)
Common Name - Monkey Puzzle

Rearing: As the caterpillar was wandering on the young pink leaves and due to their elusive feeding habit it was decided to rear the individual for further observations. Unlike many butterflies with five instars in their larval stage, Rathinda amour has only four instars (M. Rayalu *et al*., 2010) [14]. When collected, i.e on 28th August, 2024 the caterpillar was in its third instar and body was maroon dorsally with a longitudinal marking (Fig 6.). Along with

the head capsule the ventral side of the body was light greenish in colour. The length of the individual was 12.0 mm. The caterpillar was provided with an ample amount of pink young leaves as well as mature green leaves of *Saraca asoca*. The container was cleaned regularly to avoid any fungal infection, more instructions were referred from an E-book "Rearing butterflies & moths at home" by Sanjay Sondhi (Sondhi & Durve, 2023) [23].

Fig 6: Third instar caterpillar of *R. amor* wandering on young leaves of *S. asoca*

On 30st August, 2024 the caterpillar entered into the fourth instar. The caterpillar attained a length of 15.0 mm. The body was light greenish in color with red protuberances and green head capsule, while the remaining characters were the same as the previous instar (Fig 7.).

Fig 7: Freshly moulted fourth instar caterpillar of *R. amor* resting on the mature leaf of *S. asoca*

The individual entered into pupal stage on 2nd September, 2024. The Pupal stage lasted for 6 days with a balloon shaped appearance with a length of 8.5mm. It was green in colour with a earth-coloured longitudinal patch in the centre (Fig 8.). There were no other prominent markings on the chrysalis. The pupa was attached to a mature leaf of Saraca asoca from the base region. Eclosion from the chrysalis took place on the morning of 8th September 2024 (Fig 9.). Further the adult individual was released to the same location from where it was collected.

Fig 8: Freshly developed chrysalis of *R. amor*

Fig 9: Freshly eclosed adult individual of *R. amor*

2. Common Lineblue

Family - Lycaenidae (Leach, 1815)
Subfamily - Polyommatinae (Swainson, 1827)
Genus - *Prosotas* (H. H. Druce, 1891)
Prosotas nora (C. Felder, 1860)
Common Name - Common Lineblue
Documentation: As two individuals *P. nora* were documented to be feeding on 1st January 2025 and wandering on 16th February on flowers of climber *B. scandens* at the site respectively. Rearing of the individual was not required to deliver a confirmatory statement in accordance with the new host plant as multiple individuals of the same species were recorded on the same plant in two consecutive months out of which one caterpillar was well documented and observed feeding on the flower petals directly (Fig 10.).

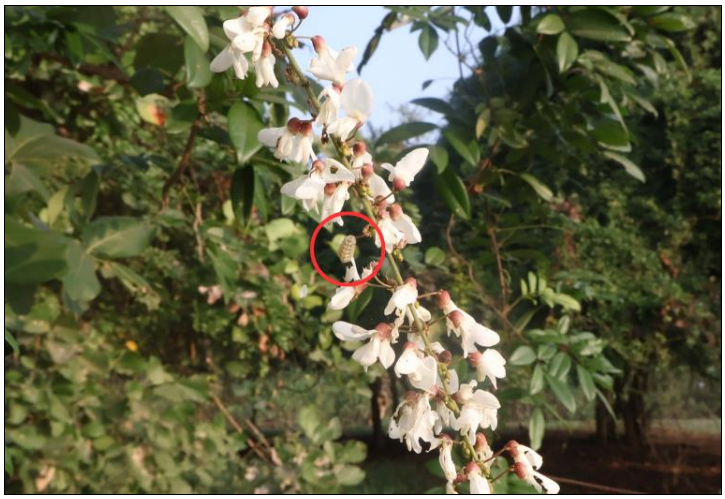

Fig 10: Image of *P. nora* feeding on the flowers of *B. scandens*

Discussion

I. Monkey Puzzle - True Ashoka

Ranthinda amor has a weak and short flight, often observed basking on the tip of a leaf, in sunlit patches (Rodrigues, n.d.). It typically flies low amongst the bushes and infrequently visits flowers and bird droppings. There is no recorded subspecies of *R. amor* in India and typically the distribution is quite cosmopolitan and thus the species is found all over the country. Monkey Puzzle has numerous listed host plants like (Indian Foundation for Butterflies, n.d.-a).

Saraca asoca (Roxb.) W.J.de Wilde is an evergreen tree with an average height about 7 meters to 11 meters (*Saraca asoca* (Roxb.) W.J.de Wilde | Plants of the World Online | Kew Science, n.d.). Other notable key characters observed to confirm the identity of the individual are compound leaves with about 5-8 pairs of leaflets, leaflets unipennate, oblong or elliptic shaped leaf with acute apex, orange to yellow flowers and petals are absent (Sharma *et al*., 2000; Beentje, 2010) [1, 20].

Table 1: Known host plants of *Rathinda amor*

Known Host Plants of *Rathinda amor*			
Family	**Species**	**Family**	**Species**
Anacardiaceae	*Mangifera indica*	Lecythidaceae	*Barringtonia acutangula*
Annonaceae	*Meiogyne pannosa*		*Careya arborea*
Calophyllaceae	*Calophyllum spp.*	Loranthaceae	*Loranthus spp.*
Dipterocarpaceae	*Hopea spp.*	Myrtaceae	*Eugenia roxburghii*
Euphorbiaceae	*Blachia spp.*	Rubiaceae	*Ixora spp.*
	Croton spp.		*Ixora brachiata*
Simaroubaceae	*Quassia indica*	Sapindaceae	*Schleichera spp.*

Table 2: Butterfly species feeding on Saraca asoca in their larval stage

Butterfly species feeding on *Saraca asoca* during their larval stage		
Family	**Species**	**Common name**
Lycaenidae	*Anthene emolus*	Common Ciliate Blue
	Cheritra freja	Common Imperial
	Chilades pandava	Plains Cupid
	Jamides bochus	Dark Cerulean
	Jamides celeno	Common Cerulean
	Rapala manea	Slate Flash

As the individual was successfully recorded feeding on the leaves of *S. asoca* for the first time, it can be stated that True Ashoka (*Saraca asoca*) is the new recorded host plant of Monkey Puzzle (*Rathinda amor*) butterfly.

II. Common Line Blue - Jewel Vine

P. nora is a tiny fast flying butterfly, often seen in large numbers flying around flowers especially of the host plant Acacia, in bright sunlight (Rodrigues, n.d.) There are three recorded subspecies of *P. nora* from India namely Indian Common Lineblue (*Prosotas nora ardates*), Andaman Common Lineblue (*Prosotas nora fulva*) and Nicobar Common Lineblue (*Prosotas nora dilata*) with Indian Common Lineblue having a cosmopolitan distribution all over the mainland.

Brachypterum scandens (Roxb.) Wight & Arn. ex Miq. is an extensively woody climber (Brachypterum scandens (Roxb.) Wight & Arn. ex Miq. | Plants of the World Online | Kew Science, n.d.). Characters like alternate leaf arrangement with opposite and imparipinnate leaflets, white-pink flowers with axillary and raceme inflorescence, monadelphous stamens and papilionaceous corolla were notably studied to identify the species (Cooke, 1901; Beentje, 2010) [1].

Table 3: Known host plants of Rathinda amor

Known Host Plants of *Prosotas nora* Butterfly			
Family	**Species**	**Family**	**Species**
Fabaceae	*Acacia* spp.	Euphorbiaceae	*Mallotus philippensis*
	Acacia caesia	Sapindaceae	*Allophylus cobbe*
	Acacia catechu	Fabaceae	*Mimosa invisa*
	Acacia torta		*Pithecellobium dulce*

Table 4: Butterfly species feeding on Brachypterum scandens in their larval stage

Butterfly species feeding on *Brachypterum scandens* during their larval stage		
Family	**Species**	**Common name**
Hesperiidae	*Hasora chromus*	Common Banded Awl
	Hasora taminatus	White Banded Awl
Lycaenidae	*Curetis thetis*	Indian Sunbeam

As individuals of *P. nora* were actively documented feeding and wandering on flowers of *B. scandens* for the first time through photographic evidence in two consecutive months, thus it can be firmly stated that Jewel Vine (*Brachypterum scandens*) is a new recorded host plant of Common Lineblue (*Prosotas nora*).

Conclusion

This study successfully documents and confirms two new larval host plant records for lycaenid butterflies within a unique urban ecosystem of SGNP, Mumbai. Through direct field observation and successful rearing, *Saraca asoca* has been officially established as a viable host plant for *Rathinda amor*. Similarly, consistent photographic evidence of caterpillars feeding on the flowers of *Brachypterum scandens* (Jewel Vine) confirms it as a new host plant for *Prosotas nora*.

These findings contribute significantly to the existing lepidopteran database in India, expanding our understanding of the dietary breadth and ecological adaptability of these species. The identification of these relationships within SGNP underscores the park's critical role as a biodiversity hotspot that sustains complex multi-trophic interactions despite its proximity to a dense metropolitan area.

Furthermore, this research highlights that even well-studied urban forests can continue to yield new ecological insights through consistent monitoring. As urbanization continues to place pressure on natural habitats, documenting such plant-insect associations becomes vital for developing targeted conservation strategies. Future studies should continue to explore the cryptic life histories of local butterfly populations to ensure the long-term preservation of the rich floral and faunal diversity found within the Western Ghats region.

References

1. Beentje H. The Kew plant glossary: An illustrated dictionary of plant terms. Royal Botanic Gardens, 2010.
2. *Brachypterum scandens* (Roxb.) Wight & Arn. ex Miq. | Plants of the World Online | Kew Science. Plants of the World Online. https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:60470396-2
3. Cooke T. The flora of the presidency of Bombay: Botanical Survey of India. Part I, 1902, 404, 429.
4. Flora – Sanjay Gandhi National Park. https://sgnp.maharashtra.gov.in/1223/Flora
5. Friend of the Earth. 2022 report of the global butterfly census – "Citizen Science" project, 2022. https://friendoftheearth.org/wp-content/uploads/Dossier-Butterfly-Project-2022-20.04.22.pdf
6. Indian Biodiversity Portal, 2024. https://indiabiodiversity.org/species/show/262591 (Accessed November 13, 2024).
7. Indian Foundation for Butterflies. *Rathinda amor* (Fabricius, 1775) – Monkey Puzzle. Butterflies of India. https://www.ifoundbutterflies.org/rathinda-amor
8. Indian Foundation for Butterflies. *Saraca asoca* – Ashoka. Butterflies of India. https://www.ifoundbutterflies.org/saraca-asoca
9. Indian Foundation for Butterflies. *Prosotas nora* (C. Felder, 1860) – Common Lineblue. Butterflies of India. https://www.ifoundbutterflies.org/prosotas-nora
10. Indian Foundation for Butterflies. *Derris scandens* – Jewel Vine. Butterflies of India. https://www.ifoundbutterflies.org/derris-scandens
11. Kasambe R. Butterflies of Western Ghats – An e-book. Self-published, 2016, 327 + vii.
12. Kawahara AY, Storer C, Carvalho APS, Plotkin DM, Condamine FL, Braga MP, *et al*. A global phylogeny of butterflies reveals their evolutionary history, ancestral hosts and biogeographic origins. Nature Ecology & Evolution,2023:7(6):903–913. https://doi.org/10.1038/s41559-023-02041-9
13. Kunte K. India – A lifescape: Butterflies of Peninsular India. Indian Academy of Sciences & University Press, 2000, 36–37.
14. M. Rayalu B, K. Rao C, Atluri JB, S. P. Ramana V. Life history and larval performance of the Monkey Puzzle butterfly *Rathinda amor* Fabricius (Lepidoptera: Rhopalocera: Lycaenidae) from India. Journal of the National Taiwan Museum,2010:65(3):1–11. https://www.researchgate.net/publication/303790368
15. Nitin R, Balakrishnan VC, Churi PV, Kalesh S, Prakash S, Kunte K. Larval host plants of the butterflies of the Western Ghats, India. Journal of Threatened Taxa,2018:10:11495–11550. https://doi.org/10.11609/jott.3104.10.4.11495-11550
16. Patwardhan A. Butterflies of Sanjay Gandhi National Park, Mumbai, Maharashtra, India. Ambient Science,2014:1(1):7–15. https://doi.org/10.21276/ambi.2014.01.1.ra01
17. Rodrigues N. Butterflies of Mumbai. MMR Improvement Society, Mumbai, India. 121 & 171.
18. *Saraca asoca* (Roxb.) W. J. de Wilde | Plants of the World Online | Kew Science. Plants of the World Online. https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:517883-1
19. Sarsavan A, Pawar M. Monkey Puzzle butterfly *Rathinda amor* (Fabricius, 1775) first record from Kanha Tiger Reserve, Mandla, Madhya Pradesh, India. Species,2023:24(73):1–3. https://doi.org/10.54905/disssi/v24i73/e7s1007
20. Sharma BD, Karthikeyan S, Singh NP, Lakshminarasimhan P. Flora of Maharashtra State (Vol.

1). Botanical Survey of India, 2000. https://ci.nii.ac.jp/ncid/BB09619323
21. Shinde R, Singh R, Cerejo S, Mhatre K. Additions to the flora of Sanjay Gandhi National Park, Mumbai, Maharashtra, India. Journal/Report, 2021, 6.
22. Sidhu AK. Lepidoptera of India: A review. Journal of Entomology and Zoology Studies,2023:11(2):105–114. https://doi.org/10.22271/j.ento.2023.v11.i2b.9162
23. Sondhi S, Durve S. Rearing butterflies and moths at home. Titli Trust (Dehradun), 2023, 32.
24. Surve NS, Sathyakumar S, Sankar K, Jathanna D, Gupta V, Athreya V. Leopards in the city: The tale of Sanjay Gandhi National Park and Tungareshwar Wildlife Sanctuary, two protected areas in and adjacent to Mumbai, India. Frontiers in Conservation Science,2022:3:787031. https://doi.org/10.3389/fcosc.2022.787031