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Cover: Coromandal Sacred Langur *Semnopithecus priam* - made with acrylic paint. © P. Kritika.



Hedychium coccineum Buch.-Ham. ex Sm. (Zingiberaceae): an addition to the flora of Andhra Pradesh, India

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The genus *Hedychium* J. Koenig belongs to the family Zingiberaceae; members are commonly referred to as ginger lily or butterfly lily. One-hundred-and-one accepted species occur in different parts of the World (POWO 2023), and according to Singh & Srivastava (2020) India has 42 taxa (40 species and two varieties). Recently, Sabu & Hareesh (2020) reported one more new species *Hedychium mechukanum* M. Sabu & Hareesh, from the eastern Himalayan region of India. Sabu (2006) reported five species from southern India and Pulliah & Karuppuswamy (2020) reported three species from the Eastern Ghats. Only two species: *H. coronarium* J. Koenig and *H. flavescens* Carey ex Roscoe, were reported from Andhra Pradesh (Pullaiah 1997).

During our explorations in the Eastern Ghats of Andhra Pradesh in the month of August 2021 (Figure 1), the first author found an interesting *Zingiber* inflorescence with dense, bright red flowers. After essential taxonomical studies, it was identified as *Hedychium coccineum* and found that it was not reported from Andhra Pradesh state. It is the first kind of report from the state of Andhra Pradesh and collected specimens were deposited at the Herbarium of Department of Botany (AUV), Andhra University (Image 2). Some of the rhizomes were collected from

the study site and introduced into the Andhra University Botanical Garden for further studies. A brief description, photo graphs, and ecological information are provided in this article for easy identification.

Taxonomic treatment

Hedychium coccineum Buch.-Ham. ex Sm. in Rees, Cycl. 17: no. 5. 1811; Singh & Srivastava Fl. Pl. India Annot. Checkl. (Monocot.): 126. 2020. *Hedychium angustifolium* Roxb. ex Ker Gawl., Bot. Reg. 2: t. 157. 1816, nom. illeg. *Hedychium coccineum* var. *angustifolium* Baker, Fl. Brit. India 6: 231. 1892, nom. invalid. *Hedychium coccineum* var. *roscoei* Wall. ex Baker in Hook.f., Fl. Brit. India 6: 231. 1892. (Image 1).

Common name: Scarlet gingerlily, Orange gingerlily, Orange bottlebrush ginger.

Local name: 'Chalavadumpa' (Telugu).

Description: A large perennial rhizomatous herb. Rhizomes usually show monochasial helicoid branches, slightly aromatic, ca. 4 cm width when cross section. Aerial pseudo stem (leafy shoot), cylindrical, covered by purple sheaths, grows up to 3 m height. Leaf bases attenuate, forms pseudo stem, ligule looks like human nails, light pink or pale red tinged, ca. 2.7 cm. Lamina oblong-lanceolate or narrowly linear glabrous, apex

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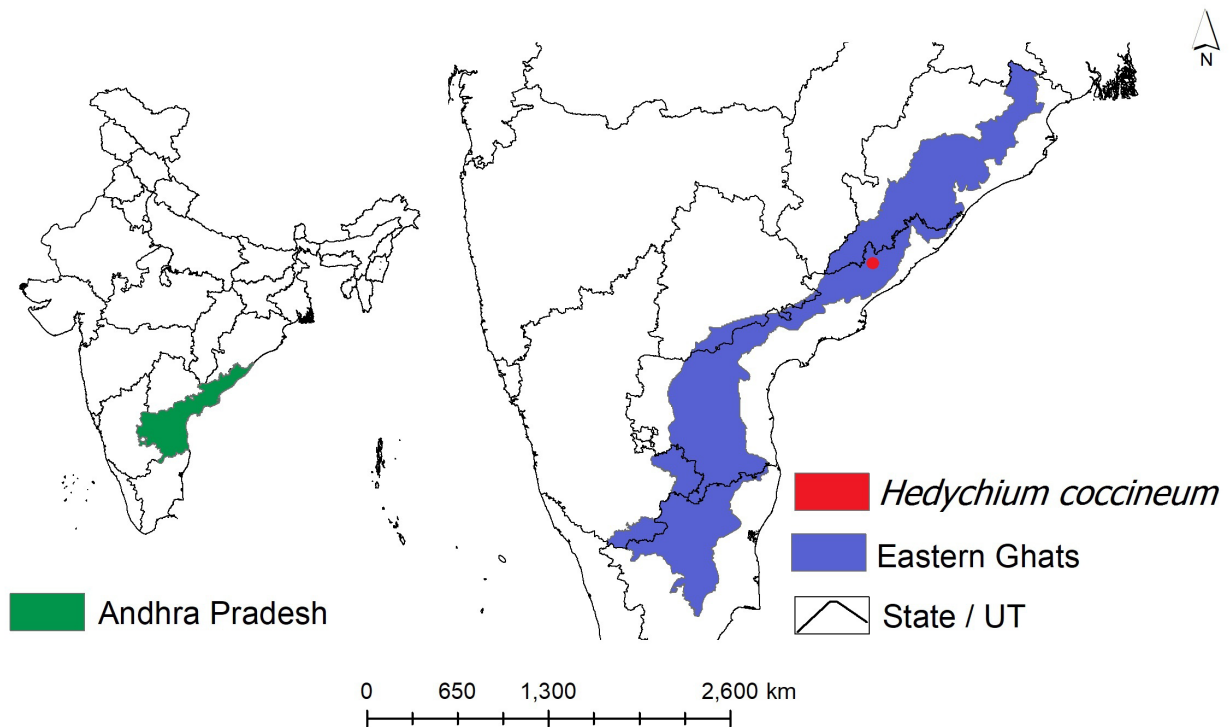


Figure 1. Location map of *Hedychium coccineum*.

caudate-acuminate, 25–50 × 3–5 cm, dark green adaxial and light purple abaxial. Inflorescence terminal spikes, ca. 30 cm long. Spikes cylindrical, slightly villose, densely flowered. Bracts arranged in vertical rows, outer bract coriaceous, oblong, ca. 3.5 cm long, tubular, glabrous sometimes slightly pubescent, usually green, rarely purple tinged at base, margin involute, apex obtuse; inner bract ca. 2.5 cm, ovate-oblong, tip slightly toothed. Bracteoles broadly ovate, ca. 1.5 cm. Flowers bright red, ca. 5 cm long, fragrant. Calyx ca. 2.5 cm long, sparsely pubescent. Corolla tube longer than calyx, ca. 2.8 cm long; lobes reflexed, linear-lanceolate, ca. 3–3.8 cm long. Lateral staminodes petaloid, lanceolate, ca. 2.3 cm long. Labellum orbicular, ca. 2 cm in diameter or rather small, apex deeply 2-cleft. Filaments ca. 5 cm long; anthers 7–8 mm long. Ovary 2.5–3 mm long, pale yellow, hairy, numerous ovules arranged by axil placenta. Style long filiform, cup-shaped, stigma hairy.

Flowering and Fruiting: Flowering–June to May, fruits not seen.

Specimen examined: 23398 (AUV) 30-viii-2021, India, Andhra Pradesh, Visakhapatnam district, Rolangiputtu Village, Coll. P. Janaki Rao.

Habitat and species association: Rarely found along the stream banks in semi evergreen forest patches with an association of ferns and angiosperms such as trees: *Antidesma ghaesembilla* Gaertn., *Callicarpa tomentosa*

(L.) L., *Diospyros sylvatica* Roxb., *Chloroxylon swietenia* DC., *Kydia calycina* Roxb., *Mallotus philippensis* (Lam.) Müll.Arg., *Mangifera indica* L., *Murraya koenigii* (L.) Spreng., *Neolitsea foliosa* (Nees) Gamble, *Psydrax dicoccos* Gaertn.; Shrubs: *Ageratina adenophora* (Spreng.) R.M.King & H.Rob., *Ardisia solanacea* Roxb., *Chromolaena odorata* (L.) R.M.King & H.Rob., *Clausen aheptaphylla* (Roxb.) Wight & Arn., *Colebrookea oppositifolia* Sm., *Dendrobium triangulare* (Retz.) Schindl., *Lantana camara* L., *Melastoma malabathricum* L., *Solanum torvum* Sw., *Persicaria glabra* (Willd.) M.Gómez, *Pogostemon benghalensis* (Burm.f.), *Rubus ellipticus* Sm.; Climbers: *Ampelocissus latifolia* (Roxb.) Planch., *Cissus repens* Lam., *Combretum albidum* G.Don, *Gynochthodes umbellata* (L.) Razafim. & B.Bremer, *Piper longum* L.; Herbs: *Ageratum conyzoides* L., *Centella asiatica* (L.) Urb., *Commelina longifolia* Lam., *Ensete glaucum* (Roxb.) Cheesman, *Globba marantina* L., and *Hedychium flavescens* Carey ex Roscoe.

Distribution: Native to India, Bangladesh, Bhutan, China, Myanmar, Nepal, Thailand, Tibet, and Vietnam. This species is introduced into Caroline Is., Cuba, Jamaica, Mauritius, Réunion, Sri Lanka, and Trinidad-Tobago (POWO 2023). In India, this species is distributed in Arunachal Pradesh, Assam, Bihar, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Sikkim, Uttarakhand, and West Bengal (Singh & Srivastava



Image 1. *Hedychium coccineum*: a—Whole plant | b—rhizome | c—cross section of rhizome | d—adaxial surface of leaves | e—abaxial surface of leaves | f—ligule | g—inflorescence | h—inflorescence after flowering. © J. Prakasa Rao & P. Janaki Rao.



Image 2. Herbarium of *Hedychium coccineum*. © J. Prakasa Rao.

2020).

Ethno medicine: Raw tender aerial stems are eaten by local people during the summer and fresh rhizome juice is used as cooling agent.

Among the 43 taxa (41 species and two varieties) from India, a majority of *Hedychium* species are found in northeastern India (Sanj 2011), and the Eastern Ghats region has only three: *H. coccineum* Buch.-Ham. ex Sm. *H. coronarium* J. Koenig and *H. flavescens* Carey

ex Roscoe (Rao et al. 2016; Pulliah & Karuppuswamy 2020). The present report of *H. coccineum* from Andhra Pradesh is a new record for this species in the Eastern Ghats region.

Many places in the Eastern Ghats are potential sites for Zingiberaceae members including *Hedychium* species, and there is a need to investigate on diversity, distribution, and conservation status of zingibers in the

Eastern Ghats region. *Hedychium* species are generally used as medicine by the local people and these plants have horticulture importance with bright flowers. Consumption of these fresh materials by the local people should be studied in scientific manner to know the useful and harmful effects.

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