

Distributional note on *Curcuma aurantiaca* (Zingiberaceae), in Eastern India

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कुर्कुमा ओरंटिएका (जिंजीबेरेसी) के पूर्वी भारत में वितरण पर टिप्पणी

तृप्तिरेखा कर, सुधांशु शेखर खोरा एवं किशोर कुमार मंडल

सारांश

कुर्कुमा ओरंटिएका जिंजिबेरेसी, भारत की स्थानिक जाति है, जिसका वितरण दक्षिणी एवं उत्तर पूर्वी भारत से पूर्व में ओडिशा के बोनाई वन प्रभाग में दर्ज किया गया है। प्रस्तुत शोध पत्र में इस जाति का सही वानस्पतिक नामकरण, संक्षिप्त वर्गीकी विवरण एवं सहज निर्धारण के लिए छायाचित्रों के साथ उपलब्ध करवाया गया है।

ABSTRACT

Curcuma aurantiaca Zipp, a species erstwhile known to occur only in Southern western ghats and North east India recorded for the first time from Eastern Ghats in the Bonai Forest Division of Odisha. A brief taxonomic description along with a photo plate of the taxon is provided here.

Keywords: Bonai, *Curcuma*, Eastern ghats, Odisha, Zingiberaceae

INTRODUCTION

The genus *Curcuma* L. (Zingiberaceae: sub family Zingiberoideae: tribe Zingiberae) comprises of about 127 species distributed mainly in tropical and subtropical Asia (Kress & al., 2002; Skornickova & al., 2007). In India, the highest diversity of the genus is represented in Western ghats and Northeast India (Skornickova & al., 2008). During our recent botanical exploration in Bonai Forest Division of Sundargarh district, some interesting plant specimens of *Curcuma* was collected in blooming stage

from iron rich Kalta reserve forest. On critical examination of live material, and scrutiny of literature (Hooker, 1894; Haines, 1924; Mooney, 1950; Saxena & Brahmam, 1995) the identity of the species was confirmed as *Curcuma aurantiaca* Zipp, erstwhile only known from the few localities of Southern western Ghats and North east India. The occurrence of this species in Bonai Forest Division recorded here for the first time from Eastern Ghats of Odisha. It is also interesting note that, the occurrence of this north-eastern floral elements substantiate the theory of 'meeting ground of northern and southern elements'

in eastern ghats (Swaminathan & Ellis, 1996). The brief description of the species along with a photo plate and distributional note of the taxon is provided herewith.

TAXONOMIC TREATMENT

Curcuma aurantiaca Zijp in Trav. Bot. Neerl. 12:345. 1915. *Curcuma ecalcarata* Sivar. & Indu. Notes Roy. Bot. Gard. Edinb. 41:321.1983: Mangaly & M. Sabu, Rheedeia 3: 151. 1993; M. Sabu, Zingiberaceae & Costaceae of South India 150.2006.

Perennial herbs. Rhizome small, 3-4.5 × 2-2.5 cm, conical, yellow inside; tubers sessile or absent; roots numerous, fleshy, fusiform, white inside. Leaves bifarious, 5-8, broadly ovate, 20-28 × 10-15 cm, base unequally cordate, apex acuminate, pubescent below near the midrib towards the base; petioles 18-24 cm, minutely pubescent. Flowering peduncle 12-15 cm long, pubescent; spike cylindrical, 10-15 × 5 cm, with distinct coma, coma bracts longer than fertile ones, 4 × 3.6 cm, slightly adnate at base, bright orange. Fertile bracts c. 3 × 2.4 cm, broadly rounded, tip recurved, orange. Bracteoles c. 8 mm long triangular with a longitudinal ridge at the back, ridge & margins pubescent. Flowers 5-6 cm long, orange-yellow; calyx 1-1.2 cm long, truncate, 3-lobed at apex, deeply split on one side, pubescent; corolla tube 2.5-3 cm long, lobes unequal; dorsal lobe oblong, 1.5 × 1.2 cm, concave, hooded and apiculate at tip; laterals oblong-obtuse, 1.5 × 0.5 cm. Labellum 2-2.3 × 2-2.3 cm, 3 lobed, lateral lobes rounded, middle lobes triangular, much exceeding the laterals. Lateral staminodes oblong-obtuse, 1.8-2 × 0.9 cm; fertile stamens yellow, filaments 4-5 mm long, ecalcarate, connective broad, hooded at the apex with glandular hairs towards base. Epigynous glands two, 4 mm long. Ovary trilobular, 1.2 × 1 mm; ovules many; style filiform; stigma cup-like between the thecae and hood, mouth pubescent. Fruits obovoid, 1.5-1 cm, slightly trigonal, pubescent. Seeds many, obovoid; aril lacerate, 6-8 narrow lobes, White.

Flowering and Fruiting: August-October.

Specimens Examined: INDIA, Odisha: (Present finding) Kalta RF, Bonai Forest Division, Sundargarh district, Mandal & Kar 1406 (CAL); Kerala: Malappuram district, Nilambur, Sabu 37385 (CALI); Wynad district, Mananthody, Sabu 37347 (CALI); Tamil Nadu: Coimbatore, Parambikulam, K.M. Sebaotina 14501 (CAL), Anaimalai Hill, C.E.C. Fischer 467302 (CAL).

Habitat and Ecology: It grows as undergrowth in moist deciduous forests.

Distribution: INDIA: Odisha (Present report); Tamil Nadu; Kerala; Meghalaya; Sri Lanka, Burma, Thailand, Malaysia and Indonesia.

Notes: *Curcuma aurantiaca* resembles to *C. parviflora* of Thailand and Burma in its ecalcarate anthers, central inflorescence and long petiole leaves, but differ in its slightly cordate unequal leaves, orange-yellow staminodes which exceed petals and the 3-lobed lip which is scarcely larger than the staminodes. We have also observed that unlike in the original description of the species, the flowers are characterised by epigynous glands. We are therefore, of the opinion that the two species are distinct and of different status. Sabu (1993) too has maintained this status.

ACKNOWLEDGEMENTS

The authors are thankful to Dr. Debabrata Swain, IFS, Principal Chief Conservator of Forests & HoFF for his active support during the survey. The authors are extend their gratitude to Dr. Sandeep Tripathy, IFS, PCCF (Wildlife) & Chief Wildlife Warden for his kind permission to carry out the field work and Mr. Lingaraj Otta, IFS, Regional Chief Conservator of Forest, Rourkela Circle for his kind co-operation. The authors are also grateful to Director, Botanical Survey of India, Kolkata for permission to consult herbaria and library and Chairman P.G. Council, Fakir Mohan University, Nuapadhi, Balasore, Odisha for his kind support. The authors are thankful to Prof. M. Sabu, Department of Botany, Calicut University, Calicut, Kerala for his valuable suggestion.

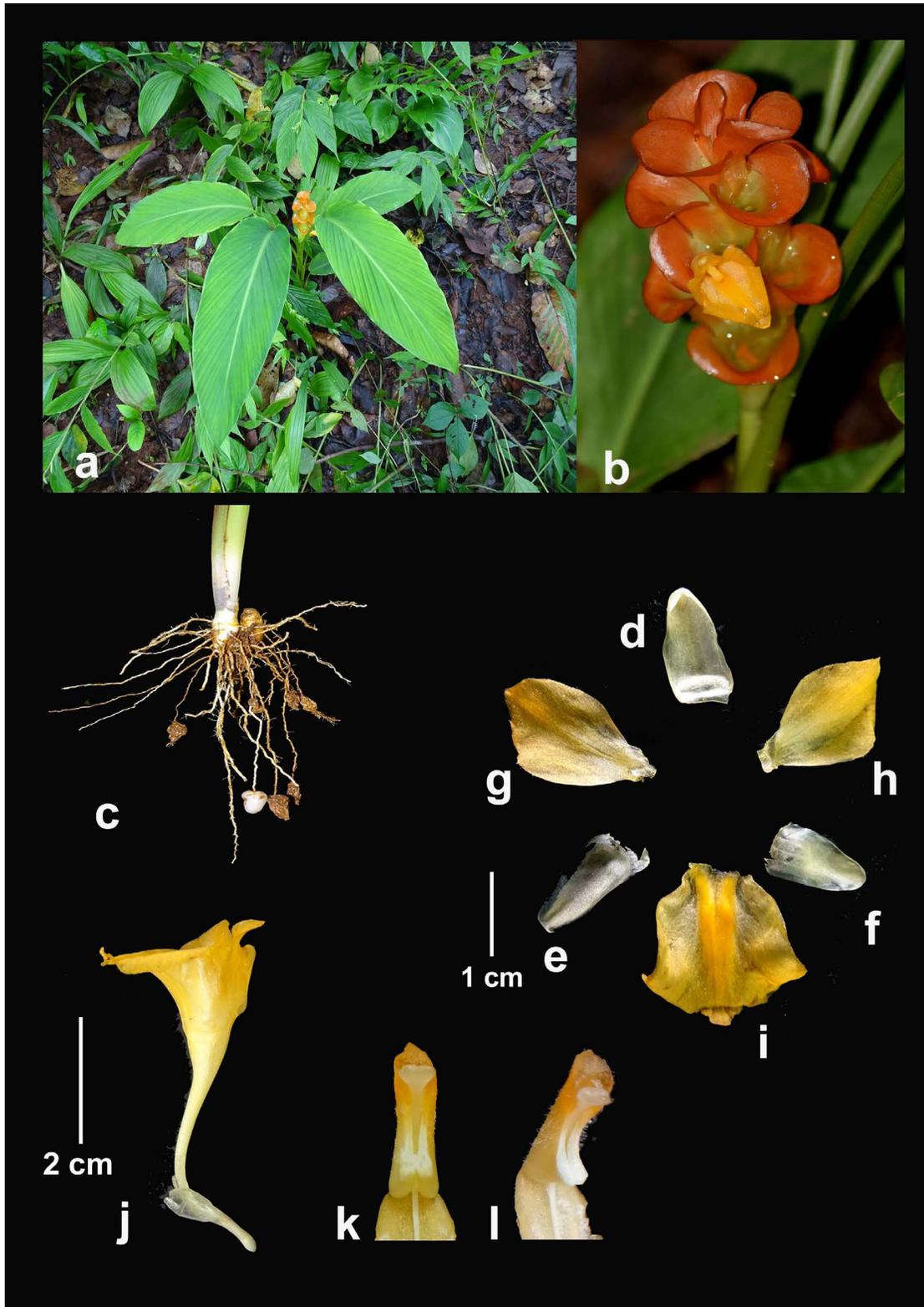


Fig. 1. *Curcuma aurantiaca* Zijp **a:** Habit. **b:** Inflorescence. **c:** Rhizome. **d, e & f:** corolla lobes. **g& h:**stamines. **i:** labellum. **j:** flower. **k& l:** Anther (front & side view)

REFERENCES

- HAINES, H.H. 1924. *The Botany of Bihar and Orissa. Part VI.* pp. 1130–1136. Adlard and Sons, London.
- HOOKER, J.D. 1894. *The Flora of British India. Vol 6.* L. Reeve & Co., London, 209–216.
- KRESS, W.J., L.M. PRINCE, AND K.J. WILLIAMS. 2002. The phylogeny and a new classification of the gingers (Zingiberaceae): evidence from molecular data. *Am. J. Bot.* 89: 1682–1696.
- MANGALY, J. K. AND M. SABU, 1993. A taxonomic revision of the South Indian species of *Curcuma* Linn. (Zingiberaceae). *Rheedea*, 3 (2): 139–171.
- MOONEY H.F. 1950. *Supplements to the Botany of Bihar and Orissa.* Catholic Press, Ranchi.
- SAXENA, H.O. AND M. BRAHMAM. 1995. *The Flora of Orissa. Vol. 3.* pp. 1888–1911. Orissa Forest Development Corporation, Ltd. Bhubaneswar.
- SKORNICKOVA, J., T. RESHE, AND M. SABU. 2007. Other economically important *Curcuma* species. In: Ravindran, P.N., Nirmal Babu, K. and Sivaraman, K. (Eds.), *Turmeric: The genus Curcuma*, pp. 451–467. CRC press, Boca Raton.
- SKORNICKOVA, J., SIDA, O., M.SABU, AND K. MARHOLD. 2008. Taxonomic and nomenclatural puzzles in Indian *Curcuma*: the identity and nomenclatural history of *C. zedoaria* (Christm.) Roscoe and *C. zerumbet* Roxb. (Zingiberaceae). *Taxon*, 57(3): 949–962.
- SWAMINATHAN, M.S. & J.L. ELLIES. 1996. *Eastern Ghats.* In P.K. Hajra & al. (eds.) *Fl. India (Introductory)*. Vol 1: 477–505.