

Hyphaene dichotoma (Arecaceae): an addition to floristic diversity of eastern India

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Abstract: *Hyphaene dichotoma* (D.White bis ex Nimmo) Furtado (Arecaceae) is reported here as an addition to floristic diversity of eastern India, based on collections from forest of Bankura district, West Bengal. This species has previously been reported from Diu, Goa, Gujrat and Maharashtra. This study aims for a detailed description along with photographs and geographical latitudinal and longitudinal data that supports the addition to the flora of the Bankura district, West Bengal, India.

Keywords: Botanical exploration, Branching palm, Coastal ecology, Dichotomous, Palmyra palm

Introduction

Palms with dichotomous branching are classified under the genus *Hyphaene* Gaertn., which comprises approximately 8 species found across Africa, Madagascar, India, and Arabia (POWO, 2026). In India, only one species is found in the wild, *Hyphaene dichotoma* (D.White bis ex Nimmo) Furtado, commonly known as the “*Ravana Tal*”. It is native to the west coast of India (Mahabale, 1982; Basu, 1985; Basu & Chakraverty, 1994; Renuka & Sreekumar, 2012; Garg & Sachan, 2016) mainly in Diu, Goa, Gujarat (Qureshimatva *et al.*, 2020; Hameed *et al.*, 2023) and Maharashtra (Hameed, 2024). The species is indigenous to India (Kulkarni & Mulani, 2004) and is morphologically similar to fossil specimens of *Palmoxylon arviensis* Ambwani reported from Nawargaon, Chandrapur district of, Maharashtra, Deccan Intertrappeans, Upper Cretaceous (Maastrichtian) (Bonde, 2008).

The species was also listed as Near Threatened (Johnson, 1998).

During field surveys in the Chotanagpur Plateau, particularly in the Lakshmi Sagar region of Bankura District, West Bengal, the authors observed multiple palm species and encountered a specimen of *Hyphaene*. The specimen is characterized by costapalmate leaves divided into numerous segments, open leaf sheaths split at the base forming a central wedge-shaped cleft, and long, spiny petioles. The stems exhibit dichotomous branching.

After thorough scrutiny of protologues and comparison with the type specimens, it is identified as *Hyphaene dichotoma* (D.White bis ex Nimmo) Furtado. Field observations indicate that individuals of *H. dichotoma* in the study area are over 100 years old, suggesting long-term establishment. Notably, organized silvicultural interventions in this region have been undertaken only within the past two decades, thereby ruling out recent plantation activities as the primary source of this population. The population also exhibits active natural regeneration, with the presence of both mature and juvenile individuals, indicating a self-sustaining demographic structure.

In addition, ethnobotanical surveys conducted among local communities revealed that the majority of respondents (n > 50) consistently reported the long-standing presence of these plants, with no evidence or recollection of deliberate planting. This traditional knowledge, coupled with field-based

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ecological observations, supports the inference that the population is not of recent anthropogenic origin. Therefore, the species in this area can be considered either naturally occurring or well-naturalized. The present record represents a significant addition to the floristic diversity of eastern India and constitutes a noteworthy extension of the known distribution range of *H. dichotoma*.

Taxonomic Treatment

Hyphaene dichotoma (D.White bis ex Nimmo) Furtado, Gard. Bull. Singapore 25: 301. 1970. *Borassus dichotomus* D.White bis ex Nimmo in J. Graham, Cat. Bombay Pl. 226. 1839; Blatt., Palms Brit. Ind. Ceylon 157, t. 33–34, f. 24. 1926; Karthik. *et al.*, Fl. Ind. Enum. Monocot. 19. 1989. *Lectotype* (designated by Lawand *et al.*, 2018): INDIA, Andhra Pradesh, Masulipatam, Palmyra Tree Sketch No. 1 Madras J. Lit. Sci. 1(1): 12. 1833. *Epitype* (designated by Lawand *et al.*, 2018): INDIA, Diu, Nagoa beach, 28.01.2014, P.R. Lawand PRL001 (SUK!).

Fig. 1

Stems solitary, 14–23 m high, 21–28 cm across, ringed with prominent leaf scars, per crown, olive green; middle cleft present; sheath blades dichotomously branching to 2 or 3 times. Leaves costa-palmate, 19–29 number per crown, olive green; leaf sheaths 39–42 cm long, middle cleft present; sheath blades orbicular; petioles strongly armed and spiny at margins; hastula asymmetrical, c. 3.8 cm long; leaf segments c. 125 cm long, 51 per blade with bilobed apices. Inflorescence interfoliar, dioecious. Male inflorescence c. 38 cm long, peduncular bracts 1 or 2, leathery, 30–38 cm long, thick hairy outside; Rachillae 8–12, arranged spirally; rachis approximately 1.5 m long, entirely covered with rachillae bracts. Female inflorescence bearing at least two peduncular bracts, cartaceous, up to 32 cm long; rachis about 1.2 m long and approximately 1.1 cm in diameter. ending in a fertile rachillae (rachillae 5 in number), c. 37 cm long, c. 1.2 cm across; rachillae inserted in a spiral pattern. Fruits nearly oblong-globose, c. 4.8 × c. 3.9 cm, smooth or irregularly warted, brownish,

fruit stalk covered with dense brown hairs, inner portion thick, fibrous; endosperm homogenous.

Habitat: Grows in dry deciduous forests of Bankura district, associated with *Azadirachta indica* A.Juss. (Meliaceae) and *Eucalyptus* sp. (Myrtaceae).

Flowering & Fruiting: Flowering occurs from January to March, followed by fruiting from April to October.

Distribution: India (Maharashtra, Goa, Gujarat, now in West Bengal).

Specimen examined: INDIA, **West Bengal**, Bankura district, Lakshmi Sagar, 18.01.2024, R. Saha & R. D. Barman BSI-CNH104099 (CAL).

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Literature Cited

- BASU S.K. 1985. Threatened Palms of India- some case studies. *Journal of Economic and Taxonomic Botany* 7: 493–497.
- BASU S.K. & R.K. CHAKRAVERTY 1994. *A manual of cultivated palms in India*. Botanical survey of India, Kolkata.
- BONDE S.D. 2008. Indian fossil monocotyledons: current status, recent developments and future directions. *Journal of Palaeosciences* 57(1–3): 141–164.
- GARG A. & S. SACHAN 2016. The rare branched palm *Hyphaene thaibeca* (L.) Mart. in an unusual site of India. *Academia* 2(1): 246–249.
- HAMEED S.S., PANDA S.P. & M.U. SHARIEF 2023. Is *Hyphaene dichotoma* (White) Furtado, an indigenous 'Branching Palm' species under habitat threat? *Ecology, Environment and Conservation* 29: S365–S367.
- HAMEED S.S. 2024. Arecaceae. In: SHARIEF M.U., HAMEED S.S., VIVEK C.P., GOGOI R. & A.A. MAO (eds.), *Flora of India*. Volume 28: *Typhaceae-Eriocaulaceae*. Botanical Survey of India, Kolkata. pp. 447–552.
- JOHNSON D. 1998. *Hyphaene dichotoma* (D.White bis ex Nimmo) Furtado. *The IUCN Red List of Threatened Species* 1998: e.T38583A10126889.

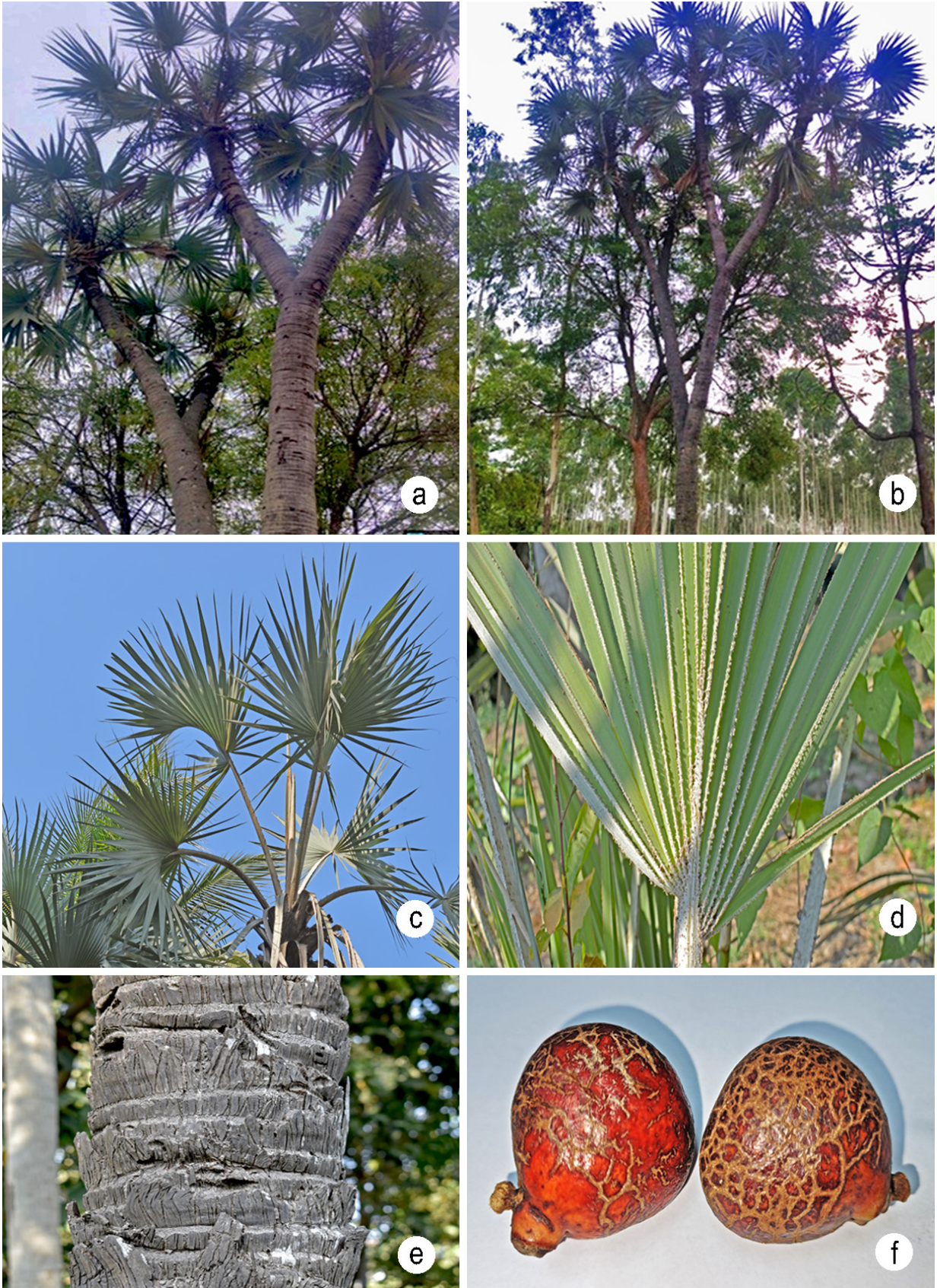


Fig. 1. *Hyphaene dichotoma* (D.White bis ex Nimmo) Furtado: **a** & **b**. Habit; **c** & **d**. Leaf arrangements; **e**. Stem; **f**. fruits (Photos S. Chowdhury & R.D. Barman).

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- <http://dx.doi.org/10.2305/IUCN.UK.1998.RLTS.T38583A10126889.en>
- KULKARNI A.R. & R.M. MULANI 2004. Indigenous palms of India. *Current Science* 86(12): 1598–1603.
- LAWAND P.R., KAMBALE S.S., SHIMPALE V.B. & S.R. YADAV 2018. Lectotypification of *Hyphaene dichotoma* and *Arenga wightii* (Arecaceae). *Rheedea* 28(1): 51–53.
- MAHABALE T.S. 1982. *Palms of India*. Maharashtra association for the cultivation of science, Research Institute, Pune.
- POWO 2026 (continuously updated). *Plants of the World Online*. Facilitated by the Royal Botanic Gardens, Kew. Available at: <http://sftp.kew.org/pub/data-repositories/WCVP/> (Accessed on 24.04.2026).
- QURESHIMATVA Q., GAMIT S.B. & H.A. SOLANKI 2020. Arecaceae family in Gujrat, its morphological character-based identification keys. *Indian Forester* 146(2): 113–124.
- RENUKA C. & V.B. SREEKUMAR 2012. *A field guide to the palms of India*. Kerala Forest Research Institute, Peechi.