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NOTE

CONSERVING THE NEWLY RECORDED HILL ARECANUT PALM *BENTINCKIA CONDAPANNA* BERRY EX ROXB (ARECACEAE) POPULATION OUTSIDE THE NATURAL FOREST AS WILDLIFE CORRIDOR

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CONSERVING THE NEWLY RECORDED HILL ARECANUT PALM *BENTINCKIA CONDAPANNA* BERRY EX ROXB (ARECACEAE) POPULATION OUTSIDE THE NATURAL FOREST AS WILDLIFE CORRIDOR

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Bentinckia condapanna is an endemic and vulnerable Hill Arecanut Palm of the southern Western Ghats of Kerala and Tamil Nadu (Johnson 1998). The species grows on steep rocky slopes of evergreen forests and recorded from Agastyamala and Peppara (Thiruvananthapuram), Kulathupuzha (Kollam), Moozhiyar and Kakki (Pathanamthitta) and Pachakkanam, Uppupara and Peerumedu (Idukki) in Kerala (Renuka 1999; Varghese & Menon 1999). It is locally known as Condapana, Kanakamuku, Vareikamuku, Kanthakamuku and Parapakku.

During field exploration in Shendurney forest range at Thenmala, Kollam District in March 2013, we observed a population of *Bentinckia condapanna* (Image 1) in Arundel-Priya Estate, which is an abandoned

tea plantation. Owing to the highly restricted distribution and vulnerable status of this species, the observation of this hitherto unknown population amidst an abandoned agricultural matrix has immense significance in conserving the species.

Bentinckia condapanna is a monoecious palm which grows up to 20m tall. The stem measures 20cm girth and annulate. The leaves are pinnately compound. The caudex is 2–3 m across. Leaflets are linear-lanceolate, 50–70 x 3–5 cm, evenly scattered and sessile. The sheath is rounded and encircling the stem. Spadix is axillary and branched with numerous spathes. Male flowers measured up to 0.25cm size and are small and sunken in the spirally arranged pits towards the tips of branches. Female flowers measured as 0.38–0.51 cm sized and are larger towards the base of spadix. The ovary is 3-celled. The fruit is sub-spherical which turns purple when ripe (Image 2). The terminal buds and juvenile leaves are edible (Mohanan & Henry 1994).

The observed population consists of 76 adult palms and 66 seedlings, spread over an area of 500m². It is located on a slanting rock along the side of the Kazhuthurutty-Arundel-Achankoil road (9.02808333°N & 77.10694444°E), now proposed for widening and alteration. Although the palm is reported to grow at an elevation of 1,000–2,000 m (Renuka et al. 1996; Kulkarni & Mulani 2004), the current population is at 622m. The mean temperature of the region is 25±2 °C. Several small water currents originating from the rock cliffs keep the



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Image 1. *Bentinckia condapanna* population

Image 2. Fruit bunch



Image 3. Crown of the Palm bearing fruits.



Image 4. Seedling

habitat humid and the soil loamy. The average height of the adult palms 6.3 ± 2.4 m with GBH 53.20 ± 15.54 cm. During our survey, 90% of the mature palms were fruiting, including individuals of one meter height (Image 3). The associated flora included—(other palms) *Arenga wightii*, *Calamus hookerianus*, *Calamus thwaitesii* and *Pinanga dicksonii*, and (trees) *Actinodaphne malabarica*, *Antidesma montanum*, *Aporosa acuminata*, *Baccaea courtallensis*, *Cinnamomum malabatrum*, *Dimocarpus longan*, *Garcinia morella*, *Holigarna arnottiana*, *Vepris bilocularis*, *Vitex altissima*, *Xanthophyllum arnottianum* and (other climbers/large shrubs) like *Derris brevipes*, *Meiogyne ramarowii*, and *Psychotria bisulcata*. Local community opined that these plants are a relic of a once widespread population. Changes in land use pattern and anthropogenic pressure might be the reason for the shrinkage of the population. Frugivorous birds such as Malabar Grey Hornbill *Ocyroceros griseus*, White-cheeked Barbet *Megalaima viridis*, Malabar Barbet

Megalaima malabarica and Grey-fronted Green Pigeon *Treron affinis* and mammals such as bats (*Chiroptera*) and Bonnet Macaques *Macaca radiata* were observed feeding on the fruits of this palm. Even though there are rocky cliffs suitable for this species around the observed population in Priya Estate, no seedlings were found in such habitats during our survey. It may be due to poor dispersal of seeds and/or the deficiency of mycorrhizal

fungi, which are critical for their survival (Vijayakumar & Abraham 1998).

Six estates including Priya Estate around the Aryankavu pass are proposed for establishing potential corridors for the passage of Elephants and Tigers (Anonymous 2011). The report of the population of *Bentinckia condapanna* from an abandoned tea estate reiterates the importance of the area as a potential centre for biodiversity conservation.

References

- Anonymous (2011).** Standing Committee of National Board for Wildlife, Twenty third meeting, September, Agenda notes. Ministry of Environment and Forests, Government of India, 71pp.
- Johnson, D. (1998).** *Bentinckia condapanna*. The IUCN Red List of Threatened Species 1998: e.T38449A10119906. Downloaded on 05 February 2018; <http://dx.doi.org/10.2305/IUCN.UK.1998.RLTS.T38449A10119906.en>
- Kulkarni, A.R. & R.M. Mulani (2004).** Indigenous palms of India. *Current Science* 86(12): 1598–1603.
- Mohanan, M. & A.N. Henry (1994).** *Flora of Thiruvananthapuram*. Botanical Survey of India, Calcutta, 490-491pp.
- Renuka, C. (1999).** *Palms of Kerala*, Kerala Forest Research Institute, Peechi, Thrissur, India, 72pp.
- Renuka, C., K.V. Bhat & S.C. Basha (1996).** *Palm recourses of Kerala and their utilization*, KFRI Research report, 116pp.
- Varghese, A.O. & A.R.R. Menon (1999).** Ecological niches and amplitudes of rare, threatened and endemic trees of Peppara Wildlife Sanctuary. *Current Science* 76(9): 1204–1208.
- Vijayakumar, K. & T.K. Abraham (1998).** Arbuscular mycorrhizal association of *Bentinckia condapanna*, Berry ex Roxb., an endemic palm of Western Ghats. *Journal of Mycopathological Research* 36(2): 67–72.





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