

Exormotheca ceylonensis Meijer (Marchantiophyta) - an endangered liverwort of India, now recorded from a highly threatened habitat of Kerala

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Abstract: Deepa, K.M.; Manju, C.N.; Nair, Maya C.; Rajesh, K.P. (2015): *Exormotheca ceylonensis* Meijer (Marchantiophyta) - an endangered liverwort of India, now recorded from a highly threatened habitat of Kerala. *Frahmia* 11:1-4.

Exormotheca ceylonensis, a critically endangered species is reported from Kerala and is described with Photographs.

Exormotheca is a terrestrial genus composed of three species known from India and Sri Lanka, viz., *E. tuberifera* Kashyap, *E. gollani* Stephani, and *E. ceylonensis* Meijer. The first is known to occur in North Western Himalayas, Simla, Mussoorie, Pachmarhi, Purander, Kodaikanal, Madras, Kanyakumari, Thirunelveli and Kerala (Manju et al., 2011), whereas the second is only known from the type location in Simla. *E. ceylonensis* was described by Meijer in 1956 from Ceylon (Sri Lanka). It was later reported from the Palni hills (Udar & Chandra, 1964) and Coonoor (Nilgiri hills) (Udar & Srivastava, 1967), of Tamil Nadu in India. After that it remained unrecorded from the Indian region for a long period (Parihar et al., 1994; Udar & Srivastava, 1983; Bapna & Kachroo, 2000). According to the IUCN threat criteria for Bryophytes (Hallingback et al., 1998) this taxon was assumed as 'Regionally Extinct' (RE), as it was not recorded for the last 40 years from its original habitats. However, Alam et al. (2012) relocated it from the Palni Hills of Tamil Nadu, and considered it as 'Critically Endangered'.

Our recent bryo-floristic explorations resulted in recording of this rare taxon from a highly threatened habitat of Seetharkundu in the Western Ghats of Palakkad district, Kerala. We come across this taxon during November 2012 at a small hillock called Vengapara near Seetharkundu. It also turned as a new record of occurrence of this taxon from the Kerala state. This population was monitored in the following seasons also. However, heavy destruction of the hills as part of quarrying and stone extraction resulted in the vanishing of a good population of this taxon. Major portion of this hillock, which supported many other species also, has been removed by 2013 itself (Fig. 1). Indiscriminate mining in such ecologically significant areas of the Western Ghats of Palakkad, if continued uncontrolled, may lead to the disappearance of the local populations of this rare species. By following the guidelines of IUCN threat categories for bryophytes, the status of this taxon could be assessed as belonging to the 'Critically Endangered' (CR). Alam et al. (2012) has provided some excellent line drawings of this species. A brief morpho-taxonomic description, supported with some photographs, is provided here.

Exormotheca ceylonensis Meijer., J. Hattori Bot. Lab. 16:72 (1956); Udar & Chandra, Current Science 33: 436 f.1–17 (1964); Alam et al., J. Threatened Taxa 4(5): 2593-2595. (Fig. 2).

Thallus 5–8 x 2.0–2.4 mm, dichotomously branched, dorsal surface with thin mid dorsal streak and polygonal areas, epidermal pores surrounded by a ring of 6–8 cells, air chambers in a single row containing simple assimilatory filaments; midrib prominent, ventral scales simple, appendages absent, in two rows; monoicous, female receptacles terminal at the point of dichotomy with 1 (-2) involucre, female receptacle stalk smooth, margin undulate with deep rhizoidal furrow. Receptacular scales are of two types - simple and undifferentiated having no pore opening; sporophyte with almost spherical capsule, short seta and short foot, capsule wall consist of single row of cells, dehisce by 4–5 irregular valves. The spores are areolate, 70–80 µm in diameter, convex outer face with light brown hollow elevation, 3–5 reticulation across diameter, elaters simple often branched, usually trispirate rarely tetraspirate.

Specimens examined: Southern India, Kerala, Palakkad District, Nelliampathy, Seetharkundu, Vengapara ca. 400 m, *Maya C. Nair 843, 845, 848* (ZGC, CALI).

Type: Ceylon (Sri Lanka).

Habitat: Terrestrial, grows on moist exposed rocks and soil covered rocks.

Range: Ceylon (Sri Lanka), India (Meijer 1956, Alam *et al.*, 2012).

Distribution in India: Southern India: Tamil Nadu (Palni hills), Kerala (Seetharkundu, Vengapara: Present report).

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Fig. 1. *Exormotheca ceylonensis*, A. Vengapara, the habitat. B. the rocky patch from where the plant was located in 2012, C. the left over of the hill after heavy mining in 2014, D. a small patch of *E. ceylonensis* left in 2014.

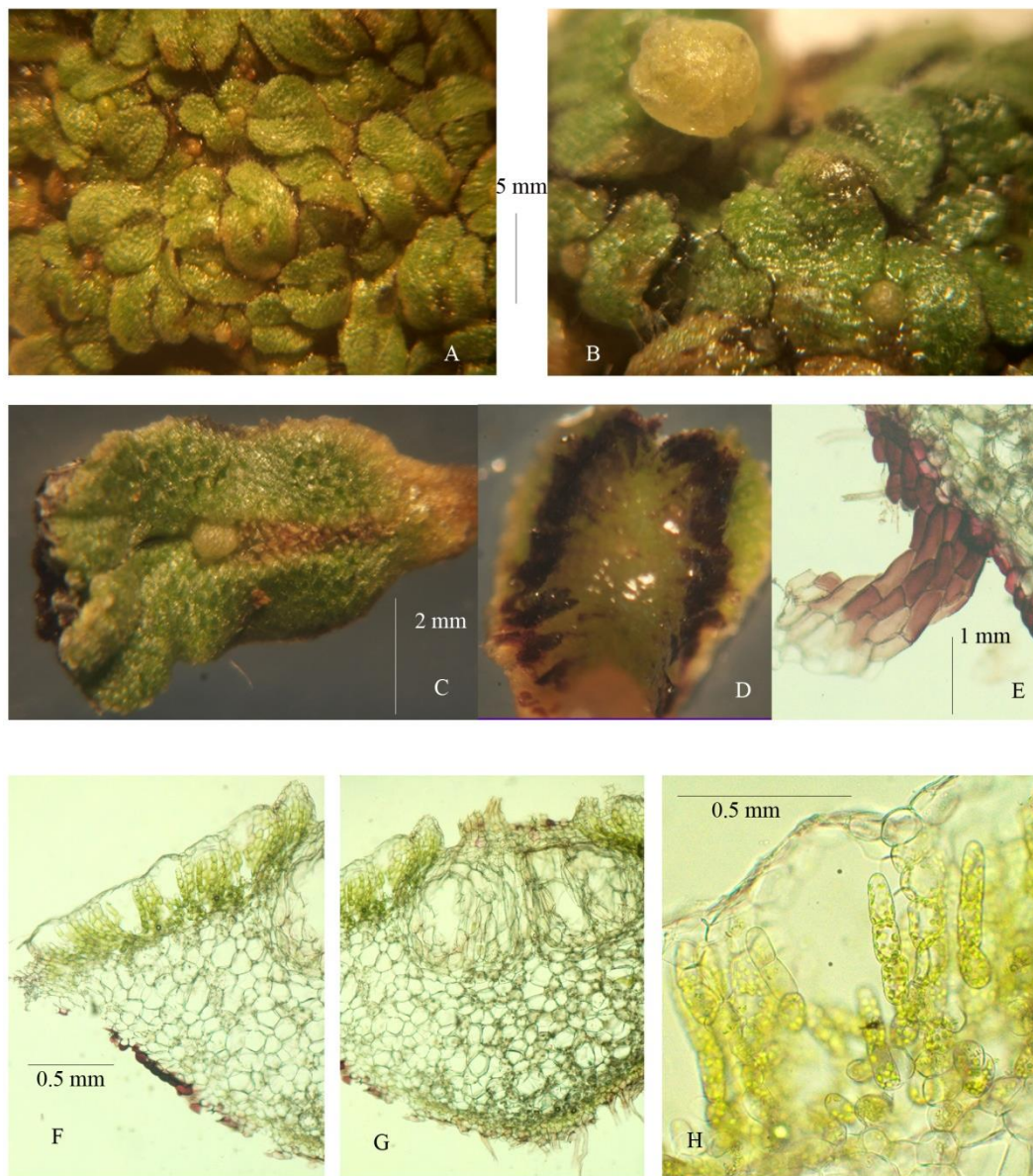


Fig. 2. *Exormotheca ceylonensis*, A. Thick growth of the thallus, B. Thallus with sporophyte, C. Single thallus, D. Thallus ventral view, E. Scales, F&G. Section through thallus, H. Enlarged view of filaments (A&B same size, C&D same size, F&G same size)