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Plagiochila javanica (Sw.) Nees & Mont. (Marchantiophyta: Plagiochilaceae) rediscovered from the Western Ghats after 180 years

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Abstract: Plagiochila javanica, a widespread Asiatic member of the liverwort family Plagiochilaceae, is rediscovered from Western Ghats of Kerala, India after about 180 years of its first record from the country. The present discovery is a new record for Kerala state. A detailed description along with illustrations and images of the species are provided.

Keywords: 900 kandi, India, Kerala, liverwort, new record, Wayanad district.

Plagiochilaceae, one of the largest families of liverworts, consists of 82 members from India (Singh et al. 2016). The present taxon, Plagiochila javanica (Sw.) Nees & Mont. (sect. Vagae Lindenb.; Söderström et al. 2016) was described over 240 years ago from Indonesia (Java) as Jungermannia javanica Sw. (Swartz 1781: 35) and was transferred to the genus Plagiochila by Nees von Esenbeck & Montagne (1836: 52). Montagne (1842) subsequently reported the species from Nilgiri Hills from Western Ghats, where it had been collected from avalanche by the Swiss botanist and horticulturist George Samuel Perrottet (1790–1870). Chopra (1943) and Parihar et al. (1994) wrongly listed the species from western Himalayas; Bapna & Kachroo (2000) described it from both western Himalaya and Nilgiri Hills but the taxon is totally omitted by Kachroo (1973) in his enumerations. Verma et al. (2015) mentioned the occurrence of this species in Nilgiri hills based on Montagne (1842). After the original collection, there is no other report of this species based on fresh collections from anywhere in India. Hence the present collection of this species from Wayanad district of Kerala is its rediscovery in Indian bryoflora after more than 180 years and is a new record for Kerala state.
Plagiochila javanica rediscovered from the Western Ghats

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Materials and Methods

The plant was collected from “900 Kandi”, a tourist spot in Wayanad District in the Western Ghats of Kerala, India. The specimen was collected in June 2023 from a rocky patch, associated with a number of other bryophytes like Racomitrium orthocarpum Wilson ex Mitt., Thuidium koelzii H.Rob., Cephalozia darjeelingensis Udar & D.Kumar, Pinnatella sp., Trichostomum tortelloides (Broth. & Dixon) R.H.Zander, and Fissidens pallidinervis Mitt.

Distribution: In India this species was earlier known from the Western Ghats of Nilgiri hills (Montagne 1842). The present record is from “900 Kandi” in Wayanad District. Plagiochila javanica is widely distributed in southeastern Asia and the Pacific, where it is known from Thailand (Sukkharak et al. 2014), Vietnam (GBIF), Malaysia, Indonesia (Sumatra, Java, Kalimantan, Sulawesi, Bali, Sunda Islands), Papua New Guinea, Solomon Islands, Fiji and Samoa (Piippo 1989, 1993).

Representative specimens examined: India, Kerala: Wayanad District, on the way to “900 Kandi”, on rock, 1,180 m elevation, 10.vi.2023, Mufeed B. & K.P. Rajesh 195157, 195180a (CALI).

Discussion

A total of 17 species of Plagiochila are distributed all over southern Western Ghats (Nilgiri Hills) (Srivastava et al. 2006; Verma et al. 2015), with a maximum number coming under section Vagae Lindenb., viz., Plagiochila beddomei Steph., P. indica Mitt. ex Steph., P. nepalensis Lindenb., P. peradeniensis Schiffn., P. subtropica Steph., P. junghuhniana Sande Lac. and P. javanica (Sw.) Nees & Mont. (Söderström et al. 2016). P. palangiensis S.C. Srivast., K.K. Rawat & P.K. Verma coming under sec. Zanteniae (Inoue) Inoue is endemic to the southern Western Ghats (Nilgiri Hills) (Srivastava et al. 2006) and P. sisporensis Steph. under sect. Tayloriae is endemic to Western Ghats-Sri Lanka hotspot (Verma et al. 2015).

According to Inoue (1984), P. javanica is characterized by its distinct rhizomatous caulids, terminal and intercalary branching, contiguous to imbricate leaves with a shouldered but not ampliate ventral base, ventral margin curved at basal half with variable number of teeth and with teeth at leaf apex not larger than those of the leaf margin, and with vestigial underleaves. P. javanica has frequent branching as described by Inoue (1984) and the present collection shows very few branching. The Indian plants are comparatively smaller than the description by Inoue (1984), this may be due to the habitat variation. The large number of synonyms (see Inoue 1984; Piippo 1989; So 2000) indicates that the species is morphologically highly variable.
Figure 1. *Plagiochila javanica* (Sw.) Nees & Mont.: a—dorsal view of plant | b—ventral view of plant | c–f—leaves | g–i—apical spines of leaf | j—median cells of leaf | k—basal cells of leaf | l & m—underleaves on stem surface | n—stem cross section. Illustration by M.S. Sajitha.
Image 1. Plagiochila javanica (Sw.) Nees & Mont.: a—habit | b—plant | c—dorsal view of shoot | d—ventral view of shoot | e—leaves | f—leaf marginal teeth | g—basal part of leaf | h—median cells of leaf | i—basal cells of leaf | j—underleaf on stem | k—underleaf enlarged | l—stem cross section. © M.S. Sajitha.
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A new record of genus *Synedrus* Graham, 1956 with description of male of *Synedrus kasparyani* Tselikh, 2013 from India
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**Note**

*Hunteria zeylanica* (Retz.) Gardner ex Thwaites (Magnoliopsida: Gentianales: Apocynaceae)—new addition and first genus record to the flora of Karnataka