

OBSERVATIONS ON *PIPER HYMENOPHYLLUM* MIQ. : A RARE WILD *PIPER* SPECIES IN SRI LANKA

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ABSTRACT

Of the five wild *Piper* species, *Piper hymenophyllum* Miq. is an extremely rare species in Sri Lanka and previous collections were limited to the two specimens deposited at Kew and the National Herbarium, Peradeniya. This paper discusses the recent observations on *P. hymenophyllum* from one of the isolated forest patches in Matale district.

Key words: Piperaceae, Matale district, isolated forest

INTRODUCTION

Piperaceae is a pantropical family with nearly 2,000 species (Gentry & Donson, 1987). The genus *Piper*, largest in the family Piperaceae consists of more than 1,000 species (Kubitzki *et al.*, 1993 and Soltis *et al.*, 1999). Genus *Piper* is represented by ten species in Sri Lanka. Three species are endemic to the country, while five species are considered as introduced (Huber, 1987; Senaratne, 2001) (Table 1). Huber (1987) has compiled a detailed description of Sri Lankan *Piper* species based on foliar and floral characters. Samuel *et al.* (1983) has carried out a systematic study on the genus *Piper* in Sri Lanka. Other than the foliar and floral characters, she has investigated ploidy levels of all *piper* species in Sri Lanka, except *Piper hymenophyllum* Miq. According to Huber (1987), Samuel *et al.* (1983) and other available specimens at National Herbarium Peradeniya, *Piper sylvestre* Lam. is the most widespread species which occurs in Dry, Wet and Intermediate zones of Sri Lanka (400 - 2400 m). *Piper zeylanicum* Miq. also occurs in a wide range of climatic and geographic conditions and is abundant in high altitude forests. *Piper trineuron* Miq. and *P. walkeri* Miq. are relatively rare and previous collections revealed that they are restricted to only a few localities of the country. Out of the five wild *Piper* species, *P. hymenophyllum* is an extremely rare species in Sri Lanka and the previous collections are limited to the two specimens deposited at Kew and the National Herbarium, Peradeniya. However, it is a very common and widespread

species in Southern India (Hooker, 1886; Vajravelu, 1990; Sivarajan & Mathew, 1997; Mathew, 1999; Pallithanam, 2001 and Mohanan and Sivadasan, 2002).

Botanical description of *Piper hymenophyllum* Miq.

A slender, terrestrial vine with up to 0.4-0.8 in diameter. Stem climbing, rooting at nodes, thickened at the nodes, inter node 5-8 cm in length. Whole plant pubescent, mature stem less pubescent, immature parts densely pubescent, pale green colour. Leaves of fertile branch with 0.8-1.5 cm long petiole, alternate, hairy. Lamina 6-12.5 cm long, 2.5-4.2 cm wide, elliptic-ovate to lanceolate, base variable in shape, round to broadly attenuate at base, rarely caudate, acuminate at apex, entire margin, pubescent on both surface, vein beneath and lower surface more pubescent (Plate 1C), upper surface less hairy (Plate 1D), and occasionally on veins, immature leaves more pubescent than mature once, membranes, pellucid when dry. Veins 5-7 ribbed, 2-3 pairs, mostly 2 pairs, lower pair arise from lamina base, upper pair rise 0.5-1.5 cm above on base of midrib, upper pair alternate and opposite. Male spike slender, 5-12 cm long, 0.1-0.2 cm diameter. Peduncle, 1-2 cm long, stamens 2, anthers rounded, bracts minute, orbicular-ovate. Female spike 6-8 cm long, 0.2-0.25 cm diameter, ovary minute, sessile, ellipsoid, bracts as for male spike, style recurved and 3-4. Berry globose, about 0.2-0.4 cm diameter, 4 angled when dry, with persistence styles.

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Locality: Central province, Matale district, Kelabbokka, isolated forest patch in Hatale tea estate, 1220 m.

Ecology: The observed plants are confined to a stream side bank in as isolated forest patch under moist and shaded condition. Plants were creeping on a rock and few trees close to the perennial water stream.

Remarks: The unique characters of *P. hymenophyllum* are; whole plant having hairs, leaves are thinly membranous and pellucid when dry (Hurbur, 1987; Vajravelu, 1990; Sivarajan & Mathew, 1997; Mathew, 1999; Pallithanam, 2001; Mohanan and Sivadason, 2002). Such characters were used for confirmation of the present observation. According to Huber (1987) entirely similar specimens have not been collected from Sri Lanka. But specimens collected by Samuel *et al.* (1983) are closely resemble *P. hymenophyllum*. It is also different in having rather long petioles, about 1.3-2.4 cm.

But petiole length of the present specimens is around 0.8-1.5 cm and it closely resembles the southern Indian species. Flowers or pods were not observed during the present study. According to Hooker (1885); Vajravelu (1990); Sivarajan & Mathew (1997); Mathew (1999); Pallithanam (2001) and Mohanan and Sivadason (2002), floral and fruiting characters described here refer to southern Indian specimens. These characters also match the descriptions of Huber (1987). Vajravelu (1990) and Ramachandran and Nair (1988) have recorded flowering and fruiting of the Indian species during November to May and March to July. This indicates that *P. hymenophyllum* flowerers twice a year. There are no records on flowering of *P. hymenophyllum* from Sri Lanka. During the field collections made by a team from the National Herbarium, they were able to identify a substantial population of *P. hymenophyllum* from an isolated forest patch in Kelabokka in Matale district (Plate 1A and 1B).



Plate 1. (A) & (B) Habit of *Piper hymenophyllum* Miq., (C) Lower surface of leaf ($\times 100$) and (D) Upper surface of leaf ($\times 100$).

Table 1. Distribution and status of recorded *Piper* species in Sri Lanka.

Botanical name	Common name	Global distribution	Status
<i>Piper betle</i> L.	Betel pepper (E) Bulath (S) Vettilai (T)	East Africa, India, Malay peninsula, Philippines, Sri Lanka	In
<i>P. chuyva</i> (Miq.) C. DC.	Mala bulath (S) Seewiya wel (S)	Cultivated in India, Sri Lanka, Malay Island and native to Java and Sumatra	In
<i>P. hymenophyllum</i> Miq.	-	Southern India and Sri Lanka	Na
<i>P. longum</i> L.	Long pepper (E) Tippili (S) Tippili (T)	Native to North East India, Cultivated through out India Malay peninsula, Philippines, Sri Lanka and Timor	In
<i>P. nigrum</i> L.	Black pepper (E) Gammiris (S) Milaku (T)	Native to South India, Cultivated in Malay Peninsula, West India, South America, Sumatra, Borneo, Philippines, Sri Lanka	Na
<i>P. siriboa</i> L.	Rata bulat wel (S) Rata karal (S)	Supposedly native to Sumatra Island	In
<i>P. sylvestre</i> Lam.	Wal gammiris (S)	South India, Sri Lanka and Introduced to Mascarene Island	Na
<i>P. trineuron</i> Miq.	-	Sri Lanka	En
<i>P. walkeri</i> Miq.	-	Sri Lanka	En
<i>P. zeylanicum</i> Miq.	-	Sri Lanka	En

Sources: Jayaweera (1982); Samuel *et al.* (1983); Huber (1987) and Senaratne (2001).

Note: E= English name; S= Sinhala name; T= Tamil name; En= Endemic; In= Introduced and Na= Native.

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