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Pteris vittata L., - Additional record from Tamil Nadu

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Short Communication

Ferns in the Western Ghats of south India, South of Palghat Gap (239 species) constitute about one - third of the ferns flora of India (about 700 species). Most of them occur in streams and stream banks in evergreen forests and shoals above 800 m while some occur on exposed roadsides and clearing (Manickam and Irudayaraj, 1992). The western Ghats contain 44 threatened ferns are facing extinction and the conservation of these species is a major concern of biologists (Manickam, 1995) *Pteris vittata* (Chinese Brake fern) is one of rare species in Tamil Nadu as reported from Coimbatore hills, Kothayar Hills and Palni hills (Beddome, 1864; Manickam, 1986). Sukumaran *et al* (2009) reported from Sacred grove forests of Kanyakumari district, Tamil Nadu. It grows along fully exposed roadside on stone crevices at 1280m.

It is well known that *Pteris vittata* is a potential hyperaccumulator of arsenic. . Among the different accessions, *P. vittata* from China and UK were the most and the least efficient in terms of As accumulation (Srivastava *et al.* 2010). Now the species has distribution and colonized in urban area in Palayamkottai Bus stand, Tirunelveli district, Tamilnadu. For the present study enumerate the species from this locality.

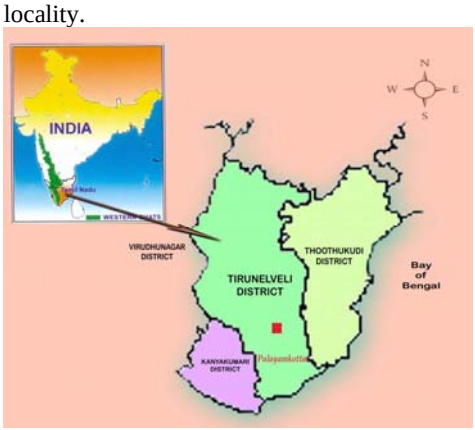

Fig.1: Distribution of *Pteris vittata* in Tirunelveli District.

Description of *Pteris vittata* L.

Rhizome suberect, 5 cm thick, covered by scales ovate lanceolate, 7x8 mm, thin, membranaceous, pale brown, concolorous apex acuminate, margin entire, stipes tufted, 20 cm long, 8 mm thick, abaxially rounded, adaxially grooved, pale brown, scaly at the base, minute, scattered, persistent bases of scales distributed above. Lamina lanceolate, up to 90 x 30 cm, simply pinnate, pinnae up to 35 pairs, opposite or sub opposite, 1.5 x 2 cm apart, sessile, linear lanceolate, 20 x 0.6 cm, apex acuminate, base brodly cuneate, margin serrate in the distal non-soral part, entire in the rest; up to 6 -10 pairs of basal pinnae progressively reduced to deflexed auricles veins obscure, simple or forked once, wide apart; pinnae pale green, glabrous texture herbaceous; sori all along the margin up to the base except the apex, Spores yellowish – green with tangled threadlike thickenings.

New distribution and ecology

New distribution area for *Pteris vittata*, has been reported in this communication. It occur in urban area of palayamkottai, particularly in open sewage-water canal near Palayamkottai bus stand in Tirunelveli district, Tamilnadu (Map-1). The specimens are matching in the St. Xavier's College herbarium (SXC-13113, 15587, 31967), Palayamkottai. Identifying characters of this species are: Rhizome erect, fronds simply pinnate, about five pairs of basal pinnae progressively reduced; sori continuous along the margin of the leaves. The South Indian populations of this species is tetraploid sexual (n=58) (Abraham 1962; Irudayaraj and Manickam 1987; Manickam and Irudayaraj 1988).

Examined: Herbarium No. SXC-13113, 15587, 31967.

Locality: Palayamkottai.

Fig.2: Natural habitat of *Pteris vittata*

Fig.3: Pot culture of *Pteris vittata*

The invasion of this species in the Urban area of Palayamkottai is unknown. The possible ways are the invasion of this species from the Tirunelveli Hills through the river Tamirabarini or by artificial/accidental introduction by human beings. Irrespective of the ways for invasion, it is important to note the establishment of this species in remarkable habitat i.e sewage water canal. With the remarkable phytoremediation potentiality of this fern, scientists are searching for new cytotype, genotype and ecotype of this species. So the present report of this species from sewage water canal in Palayamkottai, Tamil Nadu will be useful for further experimentation and exploitation of this fern for phytoremediation.

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