

Taxonomic notes on *Cheilanthes* genus from Toranmal hills, Nandurbar District, Maharashtra State, India.

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ABSTRACT

Survey of ferns was carried out at Toranmal Hills of Nandurbar district, Maharashtra. It is a rich biodiversity area. The present attempt was undertaken to give a detailed account of non- flowering plants, especially ferns in these hills. Extended distribution and taxonomic account of 2 fern species, belonging to one genus is a *Cheilanthes* has been discussed and described here for the first time from the area.

Keywords: Survey, Toranmal hills, ferns, Nandurbar,

INTRODUCTION

Since no comprehensive account of Pteridophytes at Toranmal mountain ranges in Nandurbar, Dhule and Jalgaon districts of Maharashtra state, present survey was undertaken. Present communication includes detailed account of 2 fern species. The taxonomic account and distribution of two species of *Cheilanthes bicolor* (Roxb.) and *Cheilanthes dalhousiae* Hook. collected from Satpuda hills, there are belonging in one genus is *Cheilanthes*. The present author is engaged in studies of the fern diversity of the Toranmal Hills of the north side in Maharashtra State.

Various fern species are common in the Western Ghats of South India (Anamalais and Kerala Ghats, Ponmudi hills, Munnar hills, Sabarimalai, rare on the Tirunelveli Hills) (Beddome 1863, Manickam & Irudayaraj 1992, Nayar & Geevarghese 1993, Chandra 2000, (Neel et al, 2018). Mahabale and Kamble (1981), Manickam and Irudayaraj (1992) Rathod et al. (2009) Pardeshi (2009), Rathod and Pardeshi (2010), Neel et al, (2018) etc.

MATERIALS AND METHODS

The area was visited many times during different seasons of the year 2018, especially rainy season. Field notes were taken at the time of

collection to observe habit, habitats and localities. During the survey photographs of plants were taken and selected specimens were brought to the laboratory in sealed bags and pressed in standard herbarium sheets. The specimens were deposited in the herbarium of the department of Botany, Z. B. Patil College, Dhule. The fern species were identified using the standard floras, like The Ferns of British India (Beddome 1976), Pteridophytic Flora of the Western Ghats- South India (Manikam and Irudayaraj, 1992), The Ferns of Bombay (Blatter and d'Almeida 1922).

Taxonomic account

Cheilanthes bicolor (Roxb.) Griff.ex Fraser-Jenk., Pakistan Syst. 5:94, 1991; Nakaike & Malik, Crypt.Fl.Pakistan 2: 321, 1993; Khullar, Fern Fl. W. Himal. 1: 192,1994; Fras. -Jenk., New. Sp. Syndr. Indian Pterid.73, 1997.*Pteris bicolor*Roxb. In Griff., J. Nat. Hist. 4:507, 1844. *Aleuritopteris bicolor* (Roxb.) Kholia & Punetha, J. Indian Bot. Soc. 74:184, 1995. *Aleuritopteris kathamaduensis* Ching & S.K. Wu, Acta Bot. Yunnan. 5 (2):167, 1983. *Aleuritopteris longipes* Ching & S.K. Wu, Acta Bot. Yunnan. 5:165, 1983; in Fras. -Jenk., New Sp. Synder. Indian Pterid 74 (1997).*Cheilanthes longipes* (Ching & S.K. Wu) Dixit & Balakr., Pl. Sci. Res. India 10: 1989; in Fras.- Jenk., New Sp. Synder. Indian Pterid.81, 1997.

Plant erect, ca 18-24cm tall. Rhizome cylindrical, erect, scaly, scales brown or reddish-brown, with dark vertical band at the centre, paler margin, lanceolate, 3 x 1 mm, entire, acute. Fronds bipinnately compound, tufted, erect; stipes adoxially grooved, brown-black, cylindrical, ca 8-12 cm, sparsely scaly; rachis dark brown, grooved dorsally, ca 9-13cm, less scaly than stipe; leaflets subopposite-opposite, sessile, 9-11 pairs, ovate – lanceolate, 3-7 x 0.3 – 0.5cm, covered by silvery waxy powder in lower surface, glabrous on upper surface, acuminate, cordate, the apex deeply lobed to the costa, venation forked once or twice, reaching the margin. Sori indusiate, oblong, indusia attached to margin of leaflet, open towards midrib, submarginal; sporangia 98.6 x 42.6 µm.

Distribution and Ecology: Rare, along slopes of hills

Exsiccata-V.N. Rathod- Toranmal-15,39.

Cheilanthes dalhousiae Hook. Sp. Fil.2:80t.83, 1852; Bedd., FSI t.193,1867; Nayar & Kaur, Comp.Bedd., Handb. 25,1974; Fras. -Jenk., New.Sp. Syndr.IndianPterid. 67,79, 1997; Chandra S., FI 51,2000. *Cheilanthes farinose* Kaulf.var. *dalhousiae* (Hook.) Clarke, Trans.Linn. Soc. London II Bot. 1: 1880; Bedd.,Handb. 93,1883. Pterid., 127.*Cheilanthes albo- marginata*Clarke, Trans. Linn. Soc. London II Bot. 1: 456, 1880; Bedd.,Handb. 94, 1883; Nayar & Kaur, Comp. Bedd., Handb. 26,1974. Dixit, Census 63, 1884.***Aleuritopteris leptolepis*** (Fraser-Jenk.) Fraser-Jenk. (2008: Taxon. Revis.Three Hundred Indian Subcont. 127. 2008]-A. *dalhousiae* (Hook.) Ching is nom. rejic. (see Fraser-Jenkins et al. 2017).

Plant erect, ca 20-35cm tall. Rhizome erect, scaly, scales dark brown, with dark vertical band at the centre, paler margin, lanceolate, 3x 1 mm, entire acute. Fronds bipinnately compound, tufted, erect; stipes brown-black, cylindrical, ca 10-20 cm glabrous; rachis dark brown, cylindrical, ca10-17 cm, glabrous; leaflets opposite, 12-20 pairs, basal pairs longer than the middle, ovate – lanceolate- deltoidly, 5-7 x 2.1-4.3 cm, covered by silvery waxy powder in lower surface, glabrous on upper surface, acuminate, cordate, the apex deeply pinnatifid and acuminate, pinnae upper once lanceolatepinnatifid; venation forked once or twice, reaching the margin. Sorisubmarginal, oblong, indusia attached to margin of leaflet, open towards midrib; sporangia 43.5 x 25.33 µm.

Distribution and Ecology: Found on hill slope.

Exsiccata-V.N. Rathod- Toranmal- 02, V.N. Rathod- Toranmal-16,140.

Conflicts of interest: The authors stated that no conflicts of interest.

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