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Research Article

Cyclosorus interruptus (Willd.) H. Ito: a new addition to the flora of Maharashtra

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Abstract

During the study of pteridophytes of Maharashtra authors were collected an interesting fern *Cyclosorus interruptus* (Willd.) H. Ito, which is recorded as new distributional record for Maharashtra. Their description, photographs and range of distribution is described here.

INTRODUCTION

Pteridophytes are the paraphyletic group of seed bearing plants, growing in moist and shady places while some flourish well in open, dry places especially in xeric conditions or aquatic and epiphytic habitats also. About 10,000 species belonging to 305 genera of pteridophytes occur in the wild flora of the World of which around ca. 191 genera and 1080 species are distributed in different biogeographical regions of India mainly diversified in Himalayas, Western Ghats and Eastern Ghats (Benniamin, 2012). Man has been exploiting pteridophytes prosperity from time immemorial to cure various types of diseases traditionally. These plants have been effectively used in the different systems of medicines such as Ayurvedic, Unani, Homeopathic, Allopathic, Siddha, Naturopathic, home remedies and other systems of medicines (Uddin *et al*., 1998; Subitha *et al.*, 2016).

The first floristic account of pteridophytes from Maharashtra has been given by Graham (1839). About 24 species of ferns and 6 species of lycopods were collected from Northern Western Ghats of Maharashtra. Later on Dalzell (1852) added 4 new species of *Lycopodium* from the same region. The Pteridophytic flora of Bombay has studied by Dalzell and Gibson (1861). Birdwood (1986 and 1987) studied the pteridophytes of Matheran and Mahabaleshwar. The ferns of Bombay presidency were studied by Blatter and d'Almeida (1922). They published a book "Fern Flora of *Bombay*". Parandekar (1966) has studied the Pteridophytes of Kolhapur region. Bole and Almeida (1977) discovered four new species of pteridophytes from Bombay presidency. Almeida and Almeida (1985) have given a note on ferns on Maharashtra. Naik (2006) complied the plant wealth of Maharashtra and listed 135 species of pteridophytes from Maharashtra. Jadhav *et al.* (2011) studied the pteridophytes from Koyna Wildlife Sanctuary. They listed 25 species belonging to 19 genera. Patil *et al.* (2012) studied the diversity of pteridophytes from some hills in Northern

Western Ghats. However, recently Patil *et al.* (2013; 2014a; 2014b; 2014c and 2015) and Patil and Dongare (2014d) were added eight species to the flora of Maharashtra. In connection with this there is no authentic documentation was found on the occurrence of *Cyclosorus interruptus* (willd.) H. Ito. Hence it was reported as new distributional record for Maharashtra, India.

Taxonomic description

Cyclosorus Interruptus (Willdenow) H. Itô, Bot. Mag. (Tokyo). 51: 714. 1937.

Pteris interrupta Willd., Phytographia, 13. 1794.

Dryopteris interrupta (Willd.) Ching., Lingnan Sci. J 12(4): 567. 1933.

T. interrupta (Willd.) K. Iwat., J. Jap. Bot 38 (10): 314. 1963.

Plant aquatic or marshy; *rhizome* creeping, dark, scaly; *scales* pale brown, caducous, subdeltoid; *frond* monomorphic, yellow-green, bipinnate-pinnatifid; *stipes* stramineous, glabrous above, scaly at base; *lamina* stiff, oblong-lanceolate; *pinnae* 10-25 pairs, lobed, sessile, linear-lanceolate, gradually narrowing towards acute apex; *lobes* 10-25 pairs, triangular, apex pointed; *veins* pinnate, with excurrent vein, 2-4 mm long; *sori* linear along the margins in ziz–zag manner, confined to segments, usually confluent at maturity; indusia glabrous or hairy, caducous; *spores* 50-60 µm diameter, brown, exine irregularly granulose.

Distribution: **world**: India, Bhutan, Myanmar, Nepal, Sri Lanka Algeria, Argentina, Brazil, Colombia, Guyana, Madagascar, Panama, Paraguay, Tanzania, Uganda, Venezuela, Viet Nam.

India: Maharashtra, Karnataka, Goa, Kerala, Tamil Nadu.

Maharashtra: Patan, Koyna Nagar, Nawjja.

Phenology: Vegetative Phase: August-December; Reproductive Phase: January-April.

Conservation status: *Cyclosorus interruptus* (willd.) H. Itô, was collected from Patan and its adjoining area. A population of about 10000 individuals was found in studied localities. The area of occupancy is 1–5 km^2/per locality. Hence, it is assessed as least concerned (LC) species following the IUCN categories and criteria (IUCN, 2001).

Ecology: Found along the Koyna river at Patan, Koyna Nagar and Nawjja associated with *Pteris biaurita, Diplazium exculantum, Cyclosorus dentatus* and *Tectaria caudanata*.

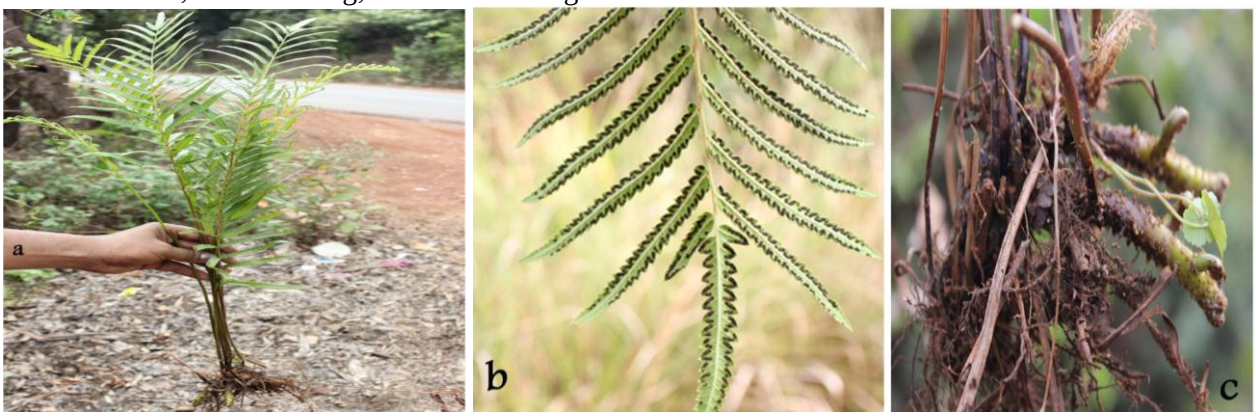

Fig. 1: *Cyclosorus Interruptus* (Willd.) H. Ito a) habit of the plant b) enlarge pinne showing arrangement of sori c) enlarged rhizome showing brown scales

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