



Morphological Study of *Athyrium* From Chikhaldara, Melghat Forest, Maharashtra State

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Abstract – Melghat forest has biodiversity in flora and fauna. Melghat means meeting of ghats. The Pteridophytes formed a dominant part of Earth's vegetation in the historic past (280-230 million years ago). Melghat lies on the southern shoots of the Satpuda range of hills. This part of Satpuda is known as Melghat; consists of succession of hill and vallies. Rare and endemic flora of North, East and Western Ghats are also found here. The entire area of the Melghat is covered by the forest of the "Dry deciduous Teak Forest." The forest of Melghat is dry tropical forest. *Tectona grandis* is the most important and dominant species. The environment of Melghat forest is favourable for the flourishes of Pteridophytes well.

Key words- *Athyrium*, *Pteridophytes*, *Melghat*.

Introduction = :

Melghat means meeting of ghats. Pteridophytes formed a dominant part of Earth's vegetation in the historic past 9280-230 million years ago). In the present day flora, excluding the non -vascular plants, they rank only next to the spermatophytes. The present day fern have managed to conserve to conserve the former diversity and glory of their ancestors. The Melghat forest composed of Gugamal National Park (core area) with 361.28sq.km.area, Melghat Sanctuary (Buffer and tourism area) with 788.75sq.km. area and Multiple use area (Reserve forest) with 526.90 sq.km.area.

The geological formation represented in the Melghat Forest is the Deccan trap. The annual rain fall varies from place to place within short distances, with the change in altitude and aspects. The lowest rainfall is 964.3mm and highest rainfall is 1458.4 mm. The moisture percentage is high which is favourable for pteridophytes .The relative humidity in Melghat forest varies from 63.25-64.0.



Materials and Methods :=

Pteridophytes include Ferns, Club mosses and Horse tail. Pteridophytes formed a dominant part of earth vegetation in the historic past. The pteridophytes have a distinct charm and physiognomy to the landscap. The Melghat forest Tropical Dry deciduous Forest has high and low elevations of Valleys and diverse topography. The high altitude with heavy rain fall, high moisture, humidity, minimum moderate temperature, waterfalls, moist rocks and humus soil.

The plant specimens of Athyrium were collected in every stage of their growth and habitats and reproduction from different localities Chikhaldara of Melghat Forest area. A single specimen with rhizoids, rhizome, frond or sporophyll or sporocarp collected at maturity period of plants, which is necessary for identification. Also visited the different localities and habitats of Athyrium for several times in a season. The plants are pressed and collected in collection bottle also and in bottle preservative that is 4% formaline is used as a preservative. The plants specimen pressed in blotting paper .and are frequently changed after a fixed period. And then the specimen are mounted on herbarium sheets.

The morphotaxonomical work or description of Athyrium was done and identified with the consultation of different Pteridophytic Floras of India.

Observations -:

Rhizome of Athyrium short, creeping, erect, thick or thin, glabrous or scaly, usually covered with persistent frond bases. Stipe size, color, thickness and strength variable, flattened at base, with two strands of vascular bundles, densely scaly at base, scales brown, rarely bicolor, thin walled, large or small.

Leaf linear lanceolate, margin entire, apex acuminate, hairs absent, rachis round. Lamina 1-2 pinnate, lanceolate to triangular, texture usually herbaceous, veins free.

Sori indusiate, Indusium 'J' shaped short, indusial usually brown, attached along one side of the lamina, thin, usually persistent, curls back at maturity, They are glabrous. Spores are brown in color, bilateral, monolete, perinate.



The sporangium distinguished into two parts. Stalk and capsule . The stalk composed of three rows of elongated cells. Sporangium develops from a single initial cell in the typical leptosporangiate way. Each mature sporangium has a long slender stalk or three rows of cells and a biconvex capsule above. The wall of the mature capsule one cell in thickness.

Sori indusiate, small, indusial light brown, straight, thin, membranous, sub-persistence, margin irregularly lobed. Spores brown, perinate.

Discussion :-

The Pteridophyta are treated as vascular cryptogams as they have a well developed conducting system. The plants with feather like fronds. The vascular cryptogams possess an independent sporophytes with vascular system . The roots are adventitious, the primary roots being short lived. In spite of floristic work undertaken by various workers from Melghat. Ferns possess roots by which they are fastened to the soil and obtain nutrition.

The stem forms either an upright habit. The rhizome covered with hairs . Rhizome short, lamina long, rachis grooved on upper side. Frond 2-pinnate finely dissected.

The sporangium distinguished into two parts. Stalk or pedicel and capsule. Each mature sporangium has a long slender stalk or three rows of cells and a biconvex capsule above. Spores brown, sori small.

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