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Comparative Study of Marsilea (Water fern) from Melghat Forest, Amravati District (M.S.)

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Abstract

Melghat Forest is Dry deciduous type forest.Forest has biodiversity in flora and fauna. Melghat means meeting of ghats. The Pteridophytes formed a dominant part of Eath'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- Marsiles, Water fern, 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 hightest 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. Rain fall is high. Marsilea reported from ponds, lakes. Pools of Melghat forest area.

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 Marsilea 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 Marsilea were collected 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 Marsilea was done and identified with the consultation of different Pteridophytic Floras of India.

Observations -:

In Melghat, I have got 2 species , *Marsilea quadrifolia* and *Marsilea minuta*. Study of water fern helps to identify these species.

Marsilea quadrifolia -:

The sporophyte reported from ponds, ditches, pools and lakes of Melghat forest area. The Plant body divided into petiole, roots, rhizome, laf and sporocarp, Roots adventitious borne at each node on the lower side of rhizome. Roots may develop laterally. The stem is also called as rhizome,that keeps on the surface of the soil. The rhizome slender,branched, with nodes and internodes, dichotomously branched, indefinite in growth and multidirectional. Leaves long petiolated and compound, borne

at the nodes and multidirectional. Leaves long petiolated and compound, borne at the nodes ad are arranged in two rows. Young leaves are circinate.

Petiole long, soft, and flexible. Lamina divided into 4 leaflets. Obovate with crenate or wavy margin. At the base of petiole bean shaped and stalked sporocarp present. Sexual reproductive organ sporocarp which contain microsporangia and megasporangia.

Marsilea minuta =

The sporophyte reported from ponds,ditches,pools and lakes of Melghat forest area. It exhibits amphiterriestrial habitat. The sporocarp observed from the month of November. The plant body divided into roots, rhizome and leaves. Roots are adventitious borne at each node on lower side of rhizome. Rhizome slender, creeping and branched with nodes and internodes. The nodes bear the leaves and roots in acropetal sucession. The adventitious roots grow downward and leaves grow upwards. The young leaves are circinately coiled. The nodes present at the nodes are present in two rows, one on either side of the mid line of the rhizome. Each leaf consists of long petiole, bearing at its stalk four leaflets are arising from one common point. Each leaf let obovate, venation dichotomous with several cross connections.

Vegetative reproduction by tubers. Sexual reproductive organ is the sporangia, heterosporous. The spore bearing structure known as sporocarp. Sporocarp develop near the base of petiole.The number of sporocarp in *Mirsilea minuta* is -2.

Discussion :

The pteridophytes are considered as a first vascular land plants that considered the terrestrial habitat. In watern fern irregular tuber like bodies are formed on the stem. These tubers are able to survive for long periods pf drought. They persist when the rest of plant die.

Marsilea quadrifolia and *Marsilea minuta* grows in ponds and pools and lakes and acts as an indicator of ecological succession.The adult fronds of *M.minuta* and *M.quadrifolia* shows diurnal movement of the petiole.

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