

Marsilea

Q. Draw a well labelled diagram showing the external and internal structure of sporocarp of Marsilea?

Ans:- Systematic Position →

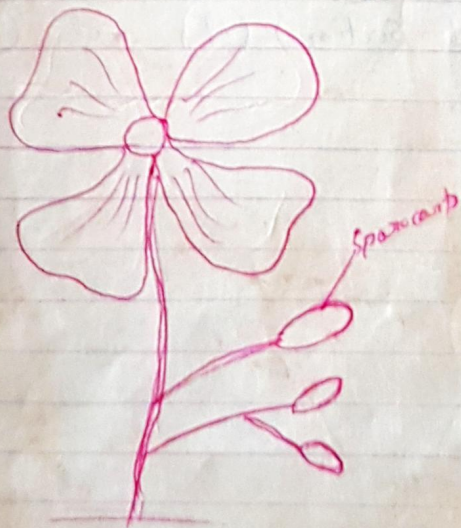
- Class - Leptosporangiopsida
- Order - Marsiliales
- Family - Marsiliaceae
- Genus - Marsilea

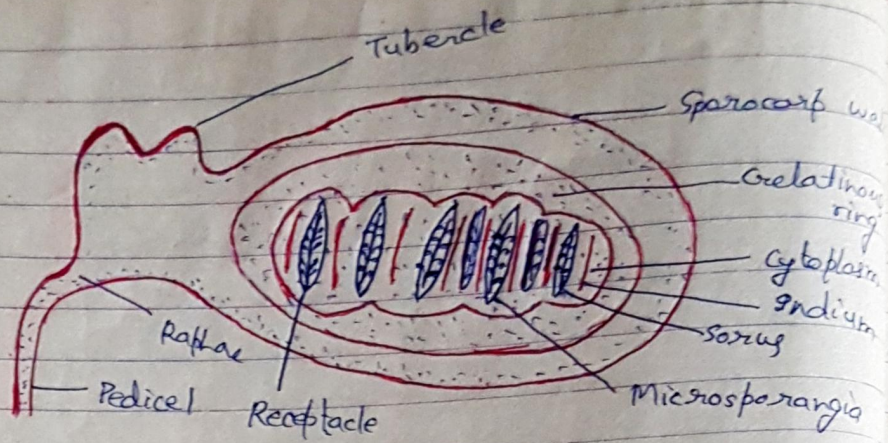
The plant is sporophytic which is widely distributed and are may be hydrophytic or xerophytic. The stem is herbaceous, soft, thin, creeping and rhizome like. On the surface of the soil and just below the soil, the nodes and internodes are quite prominent. The leaves are aerial and alternately arranged on the nodes. The petioles are quite long bearing 4 leaflets at the top that is quadrifoliate. The rhizome is well branched and young leaves are coiled called circinate vernation. At the end of season reproductive structure are formed at the base of leaf or on the petiole known as sporocarp. Sporocarps are sorus like in structure having many sporangia which is covered by a hard stony layer. Inside sporangia many heterogenous spores are form.

On maturity at the end of season asexual reproductive structure are formed at the base of leaf or on the petioles. Sporocarp possess a small pedicel and a raphe and a tubercles which is pointed in structure. Each sporocarp are small in size, oval, rectangular, spherical or bean shaped having a hard stony layer. But when sporocarp are young they are

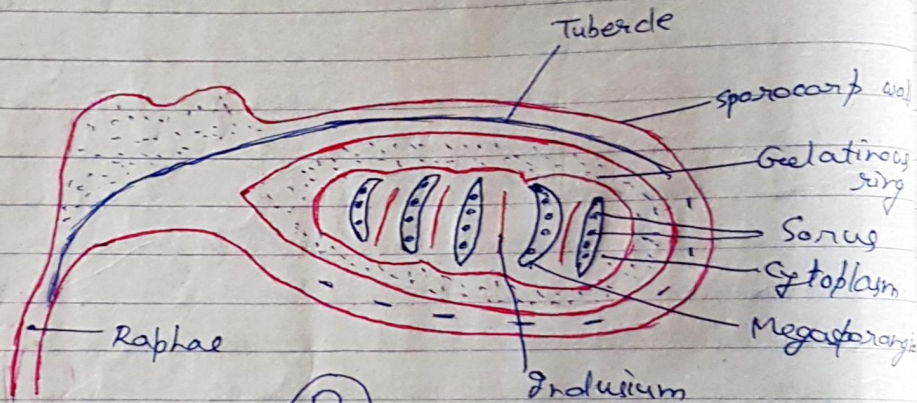
green and soft.

The sporangia inside the sporocarp are of two types. That is Microsporangia and other is Megasporangia present inside the sporocarp which bears a large number of sori. Inside each sorus they are heterosporous possessing a single megasporangium at the top and many ^{micro} sporangia at the base. Each sporangium has a jacket of nutritive Tapetal and spore mother cells which develop from a group of cells. Megasporangia are large and matured first to produce megaspores. Microsporangia are smaller in which a large number of haploid microspores are found during the course of development of the internal tissue. After a long time the hard covering of sporocarp split into two valves from where sori come out and microspores and megaspore germinate in presence of water to form gametophytes. The number of sporocarp varies from 1 to 20 in different species of Marsilea.





(A)



(B)

Fig - Internal structure of sporocarp of *Marsilea* (Dorsiventral section) (A) and (B)