



S.G.V.C. Vidya prasarak Trust's

M.G.V.C. ARTS, COMMERCE AND SCIENCE
COLLEGE MUDDEBIHAL

DEPARTMENT OF BOTANY

PROJECT WORK

ON

PTERIDOPHYTE



Go-...
Internal Quality Assurance Cell
M.G.V.C. Arts, Commerce & Science College
MUDDEBIHAL - 586212, Vijayapur.

[Signature]
PRINCIPAL

M.G.V.C. Arts, Com. & Science College
MUDDEBIHAL - 586212.

FROM BSC 3rd SEMESTER STUDENTS.

S.G.V.C Vidya Prasarak Trust's

**M.G.V.C ARTS, COMMERCE AND SCIENCE COLLEGE
MUDDEBIHAL-586212**

DEPARTMENT OF BOTANY

CERTIFICATE



Examination Seat No: S1928080

Class: BSC 3rd sem

This is to Certify that, Mr/Mrs. MOUNESH. K. PATTAR

Has satisfactorily completed Project work on "PTERIDOPHYTES"

**"Under my supervision in M.G.V.C Arts, Commerce
and Science College Muddebihal year 2020-2021"**

Staff Member in charge

Head Department of Botany
Head of the Department of Botany
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What are pteridophytes?

These are seedless, vascular plants that show true alternation of generation.



General characters of pteridophytes:

- Pteridophytes are considered as the first plants to be evolved on land.
- They are cryptogams, seedless and vascular.
- The plant body has true roots, stem and leaves.
- Spores develop in sporangia.
- Sporangia are produced in group on sporophylls.
- Sex organs are multicellular.
- They show true alternation of generation.



Habits and Habitat:

- These species are distributed in the tropic of the entire world.
- It is represented by about 30 species.
- About five species are found in india.

Reproduction:

- Reproduction by two methods I,e.vegetative method and sexual method.
- Vegetative method by the formation of buds.
- These buds give rise to fronds and thus help in vegetative reproduction of the plants.
- Sexual reproduction by development of sporangium
- Fertilization and development of sporophyte is also simillar to pteridium.

Uses:

- It is used in manufacture of hats,mats,baskets,and other wickerwork.
- These are used in cultivated as ornaments.
- Used to make hanging baskets.

Nephrolepis



Classification:

Division: pteridophytes

Sub-division: pteropsida

Class: leptosporangiatae

Order: filicales

Family: polypodiaceae

Genus: Nephrolepis

General characters of nephrolepis:

- The plant body is sporophytes.
- It is differentiated into roots, rhizomes and leaves.
- The stem is modified to rhizomes.
- The pinnae are sessile or shortly petioled.
- The veins are prominent and the veinlets are branched with open ends.
- It is short, slender, suberect, erect or wide creeping.



Habit and Habitats:

- These are commonly found in wet or swampy forest.
- These are present in open woodlands, and meadow areas.
- Some species are adapted to xeric condition.

Reproduction:

- Reproduction is by vegetative methods and by means of spores.
- The rhizomes of some plants separate from the parent plants and germinate to produce new sporophytic plants.
- The tubers develop due to irregular growth of some buds at the nodes of the rhizomes.
- Spores are produced within the sporangia.
- The equisetum is a homosporous pteridophyte. The haploid spores germinate to form gametophytes.
- The germination takes place immediately if the spore lands on a suitable substratum.

Uses:

- It is used for fluid retention, kidney and bladder stones.
- Used in treatment of urinary tract infections.
- It is used in treatment of the inability to control urination and general disturbances of the kidney and bladder.
- Used for treatment of swelling of the tonsil.
- Use on the skin for wound healing.
- Used to lose weight.

Equisetum



Classification:

Division: pteridophytes

Sub-division: sphenopsida

Order: equisetales

Family: equistaceae

Genus: equisetum

General characters of equisetum:

- The plants are erect and bushy.
- The plants are differentiated into root, rhizome, aerial branches and leaves.
- Leaves are present at nodes in whorls.
- The leaves are non-chlorophyllous and scaly.
- Plants body is sporophytic and the sporophyte is well-branched perennial herb.



Habits and Habitat:

- These are terrestrial plants that grow in different habits.
- Most of the plants grow in damp shady areas of tropical forests.
- They are herbaceous and can be perennials or annuals.
- Abundantly it is found growing in tropical rain forests.
- They are also found growing in xerophytic conditions that is dry sandy soil or rocks.

Reproduction:

- Reproduction by both vegetative method and by formation of spores.
- Vegetative reproduction by fragmentation.
- These are heterosporous that produce two different types of spores—megaspores and microspores.
- These spores are produced in megasporangia.
- They are produced on fertile leaves known as megasporophylls and microsporophylls respectively.
- These structures are grouped together to form a compact structure known as strobilus.

Uses:

- These species are used as food.
- These are used in hand crafts.
- These are used as medicine in Chinese traditional medicine as a bactericide in the treatment of

Selaginella



Classification:

Division: pteridophytes

Sub-division: lycopsida

Order: selaginellales

Family: selaginellaceae

Genus: selaginella

General characters of selaginella:

- Many species are prostrate , creeping, on the ground
- It is simple , scale-like leaves on branching stems .
- A few species climbs with the help of rhizophores.
- The plant body is divided into root, stem and leaves.
- The primary root is short lived and all other roots are adventitious.
- Presence of rhizophores.
- Presence of ligules.

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Habitat:

- They are either terrestrial or epiphytic.
- They grow in the humus packets of trees.
- Found in moist to dry localities, on soil, among rocks and on trees in Hawaii
- It is found in thickest open forests and clearings, on trunk of trees or in rocky crevices of the cliff.
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Reproduction :

- Psilotum reproduces vegetatively as well as by spores.
- Vegetative reproduction by sporophytes as well as gametophytes.
- Spores reproduce by spore producing.
- These are formed on the rhizome and are usually restricted to the tip or the axils between the branches.
- The gemmae detach from the plant body, germinate and give rise to a new plant of Psilotum.
- The sporophyte reproduces asexually by the formation of spores.

Uses:

- Used as talcum powder.
- Used medically as a purge.
- Used in making traditional Hawaiian leis.
- Used in the part as a small broom.
- The whole plant is made into a tea.
- It is an edible plant.

Psilotum



Classification:

Division: pteridophyte
Sub-division: Psilotopsida
Order: psilotaes
Family: psilotaceae
Genus: Psilotum

General chracters of Psilotum:

- The plant body may be pendent or erect and dwarfed.
- It is differentiated anti (i) abasal rhizomatous system and (ii) aerial branches.
- Aerial shoots bears many small and scale like irregularly distributed scale leaves.
- Sporangia are borne in triads on very short stalk in axis of leaves.



Habits and Habitat :

- Pteridophytes grow luxuriantly in most tropical forests and temperate forests.
- Their occurrence in different eco-geographically threatened regions from sea level to the highest mountains.
- They are found on moist or dry rocks and boulders, tree trunks, water bodies including marshes and swamps.
- They occur today in a variety of habits like terrestrial, aquatic, epiphytic and lithophytic.
- They are major part next only to the angiosperms in India.
- Each fern species has its own preference for temperature, humidity, soil type, moisture etc.
- Pteridophytes are annual, terrestrial and herbaceous plants.

Reproduction of pteridophytes:

- Antherozoids are released in water and come in contact with archegonia.
- Gametes fuse in the archegonium to produce zygote.
- Zygote produces sporophytes after division.
- Spores are homosporous and heterosporous.
- In heterosporous plants, microspores give rise to male and female gametophyte respectively.