DEPARTMENT OF BOTANY
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DATE: 11 NOV. 2020

LECTURE NO. 10

B.Sc. (H) PART-II PAPER-III

GROUP-A

Gymnosperm- Structure of sporophytic plant body, flower, pollination, fertilization, embryo development and seed structure of Pinus I:- Taxonomic position:

Class - Coniferopsida
order - Coniferales
Family - Pinaceae
Genus - Pinus

occurance: It is distributed throughout the Northern Hemisphere. Out of about 105 species 5 are reported from Indian subcontinent.

Sporophytic plant body:-

1. Morphology - Plants are tall erect and evergreen, having a well developed tap root and aerial branches. Branches are of two -

(a) Dwarf shoots (branches of limited growth) bearing green needle like leaves and

(b) Long shoots (branches of unlimited growth) bearing scale leaves. The number of needles in a cluster varies from 1 to 5.

Anatomy:

The T.S of stem shows a cortex and well defined pith with a few resin ducts. The vascular bundles are collateral and open. Secondary growth takes place by a persistant cambium. Secondary wood is "pycnoxylic". Annual rings are present. Parts of Sanio are present around and bordered pits of sieve tubes.

(b) T.S of needle shows epidermis with thick cuticle and sunken stomata. Hypodermis chollenchymatous and the transfusion tissue is present. Mesophyll consits crenately lobed chlorophyllous cells and contains resin ducts. There are one or two vascular bundles. The xylem faces the pointed end and phloem towards the cortical end.

Reproduction:

Pinus is heterosporous and monoecious. Male and Female cones are are borne on separate branches.