

ANNEXURE

METRIC NO. 1.3.2

Master of Science Botany (Field Survey)

Scanned copies of the Permission letter and objective and outcome of the field survey done by the students of MSc (Botany) course.



Government College For Girls
Rakh Bagh, Ludhiana, Punjab 141001
NAAC Accredited 'A' Grade

Ref. No.....12232.....

Date.....5/5/22.....

PG Department of Botany is organizing evaluative educational field trip to Dalhousie and adjoining areas from 06th May, 2022 to 08th May, 2022, as part of the curriculum of M.Sc. (Botany) programme, as per the following itinerary:

| | |
|-----------------------|--|
| 06-05-2022 (Friday) | Starting from GCG, Ludhiana at 9:00 PM and travelling overnight |
| 07-05-2022 (Saturday) | Reaching Dalhousie in morning and Stay at Dalhousie |
| 08-05-2022 (Sunday) | Starting Return Journey after Breakfast Reaching GCG, Ludhiana by night |

The following staff of college is accompanying the students for the trip:

1. Ms. Ramanjit Bhatti
2. Dr. Tarunpreet Singh Thind
3. Dr. Rupinder Kaur
4. Mr. Jasvir Singh (Lab Attendant)

The list of the students, accompanying the trip, is enclosed alongwith.

Ramanjit Bhatti
Head
PG Department of Botany

Subhdeep
5/5/22
Principal Principal
Govt. College For G
LUDHIANA

Field Trip to Dalhousie & Adjoining Areas

Objectives:

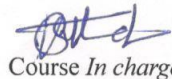
The purpose of the field trip for the M.Sc. (Botany) students is to offer them the opportunity to engage in hands-on and interactive learning experiences that go beyond reading textbooks and listening to lectures. Field trip to Dalhousie and adjoining areas was planned to enhance students understanding and knowledge of the flora of Chamba region by exposing them to real-world and also understanding applications of the subject of botany.

Outcomes:

1. Experiential learning: Field trip to Dalhousie helped students to deepen their understanding of various concepts of Taxonomy and Embryology. They also studied various species of pteridophytes in detail.
2. Application of knowledge: The trip allowed students to see how the theories and concepts of various topics of plant sciences, they learnt in the classroom, are applied in practical settings. This helped bridge the gap between theoretical knowledge and its real-world application, thus making the learning more meaningful and relevant.
3. Observation and exploration: Field trip provided students with the chance to observe and explore different sites around Dalhousie like Kalatop Wildlife reserve, Khajjiar, Dainkund Peak etc. This firsthand exposure helped stimulate curiosity, critical thinking, and observation skills.

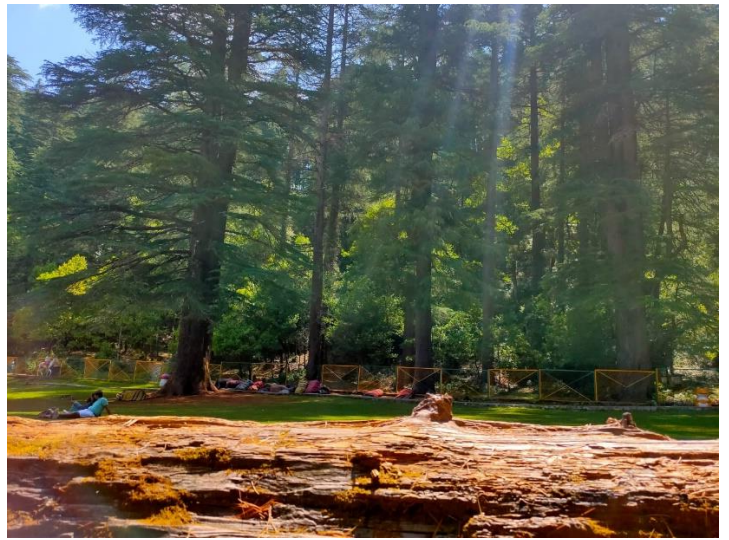
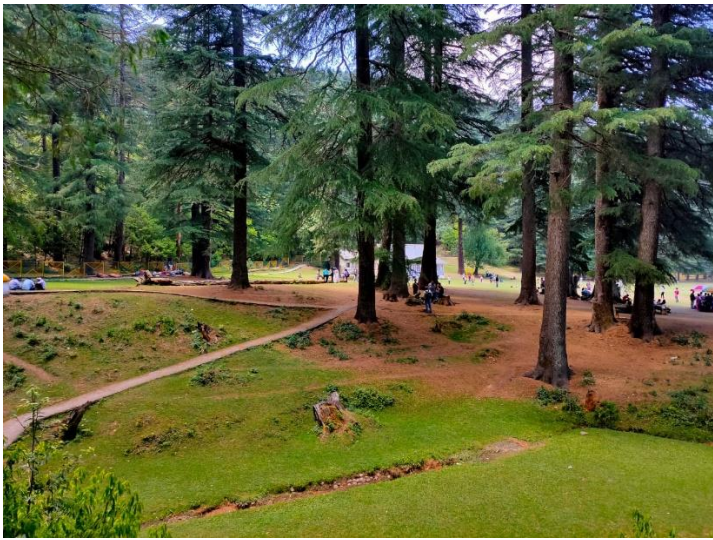


Principal
Govt. College for Girls
Ludhiana



Course In charge

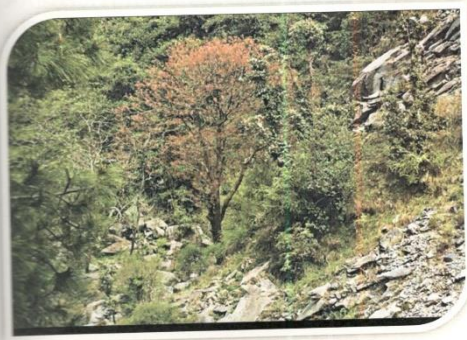
Exploring Flora of Dalhousie & Adjoining areas



Species studied at Dalhousie

Erythrina americana

- Family: Fabaceae
- Genus: *Erythrina*
- Species: *americana*
- Trees grows upto 4-5 m
- Branches are wide spreading
- Leaves are trifoliate with ovate leaflets
- Stem have spines along with their length
- Flowers are terminal spike
- Petals are carmine red



Abies alba

- Family: Pinaceae
- Genus: *Abies*
- Species: *alba*
- Large trees upto height of 10-80 m.
- Leaves are needle like
- Leaves are green and shining without stomata
- Mature cone is usually brown young in summer



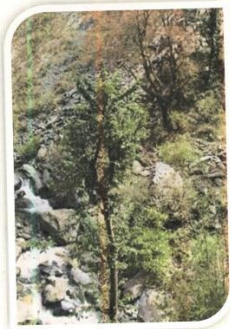
Rhododendron decorum

- Family: Ericaceae
- Genus: *Rhododendron*
- Species: *decorum*
- Woody plant having showy flower
- Leaves are covered with scales
- Flowers are white to pale pink
- Fruit has capsule



Cupressus gigantea

- Family: Cupressaceae
- Genus: *Cupressus*
- Species: *gigantea*
- Trees usually 25-50 cm tall
- Branches are densely arranged
- Leaves closely arranged in 4 ranks
- Scale like, ridged or arched
- Cones are globose oblong with fertile scale
- Seeds are prominent, large



Pinus roxburghii

- Large tree having 30-50m height, 2-3m diameter
- Bark is red brown
- Leaves are needle like 20-35cm long.
- Cones are ovoid conical,
- 12-24cm long & 5-8cm
- broad at base



Cedrus libani

- Family: Pinaceae
- Genus: *Cedrus*
- Species: *libani*
- Evergreen coniferous
- Tree with pyramidal shape fine texture.
- Leaves are needle like
- Flower shape is catkin in male and cones in female
- Well drained soil
- Soil pH is 5-8.2



Picea smithiana

- Family: Pinaceae
- Genus: *Picea*
- Species: *smithiana*
- Large evergreen tree growing to 40-55m tall.
- Trunk diameter upto 1-2m.
- It has a conical crown with level branches & usually pendulous branchlets.



1. Leatherleaf mahonia



BELONGS TO ORDER RANUNCULALES AND FAMILY BERBERIDACEAE ATTRACTIVE, UPRIGHT SHRUB WITH DISTINCTIVE EVERGREEN FOLIAGE AND TERMINAL CLUSTERS OF SHOWY, FRAGRANT YELLOW FLOWERS FOLLOWED BY HIGHLY ORNAMENTAL, POWDER-BLUE TO BLACK, GRAPE-LIKE FRUIT CLUSTERS. THE SPINY LEAVES MAKE A FINE BARRIER PLANT OR SPECIMEN. PLANT GROUPINGS TO INCREASE FLOWER AND FRUIT PRODUCTION, EVERGREEN.

2. Agapanthus



IT BELONGS TO FAMILY AMARYLLIDACEAE COMMONLY KNOWN AS LILY OF THE NILE. HERBACEOUS PERENNIALS THAT MOSTLY BLOOM IN SUMMER. LEAVES ARE BASAL, CURVED AND LINEAR.

3. CEDAR (DEODAR)



CEDRUS, COMMON NAME CEDAR, IS A GENUS OF CONIFEROUS TREES IN THE PLANT FAMILY PINACEAE. THEY ARE NATIVE TO THE MOUNTAINS OF WESTERN HIMALYAS. IT CAN GROW UPTO 30-40 METER TALL WITH SPICY-RESINOUS SCENTED WOOD, THICK, BROAD, LEVEL BRANCHES. LEAVES ARE EVERGREEN AND NEEDLE LIKE.

4. BLUE PINE



HIMALYAN BLUE PINE (*Pinus wallichiana*) IS DENS EVERGREEN TREE FOUND IN HIMALYAS. TREE IS DISTINGUISHED BY ITS CLUSTERS OF LONG CYLINDRICAL HANGING CONES AND NEEDLE LIKE BLUE GREEN LEAVES. TREES ARE SYMMETRIC AND PYRAMIDAL IN SHAPE. THE WOOD IS ODERATELY HARD, DURABLE AND HIGHLY RESINIOUS.

5. BANJ OAK



Quercus leucotrichophora TREE BELONGS TO FAMILY FAGACEAE COMMONLY KNOWN AS BANJ OAK IS AN EVERGREEN TREE BEARING STALKED, OVATE TO LANCEOLATE, LEATHERY, AND DARK GREEN LEAVES WHICH ARE GLABROUS ABOVE AND DENSELY WHITE OR GREY PUBESCENT BENEATH.

6. *Rhododendron*



Rhododendron IS A GENUS OF SHRUBS AND SMALL TO (RARELY) LARGE TREES. THE LEAVES ARE SPIRALLY ARRANGED. THEY MAY BE EITHER EVERGREEN OR DECIDUOUS. IT IS USED IN TRADITIONAL MEDICINE AND HAVING ANTIOXIDANT EFFECTS OF FLAVANOLS OR OTHER PHENOLIC COMPOUNDS THAT PLANT CONTAINS. THEY ARE POISONOUS TO GRAZING ANIMALS BECAUSE OF GRAYANOTOXINS IN THEIR POLLEN AND NECTAR.

7. FIRS



FIRS ARE EVERGREEN CONIFEROUS TREES IN THE FAMILY PINACEAE. FIRS ARE MOST CLOSELY RELATED TO THE GENUS CEDRUS (CEDAR). THEY ARE LARGE TREES, 10-80 METERS WHEN MATURE. FIRS CAN BE DISTINGUISHED FROM THE OTHER MEMBERS OF THE PINE FAMILY BY THE WAY THEIR NEEDLE LEAVES ARE ATTACHED SINGLY TO THE BRANCHES AND THEIR CONES THAT STAND UPRIGHT ON THE BRANCHES.

8. COMMON DAISY



Bellis perennis EUROPEAN SPECIES OF FAMILY ASTERACEAE IS A PERENNIAL HERBACEOUS PLANT WITH ROSETTES OF SMALL ROUNDED OR SPOON SHAPED LEAVES. IT HAS ASTRINGENT PROPERTIES AND HAS BEEN USED IN HERBAL MEDICINES. DAISIES HAVE TRADITIONALLY BEEN USED FOR MAKING DAISY CHAINS IN CHILDREN GAMES.

9. *Digitalis purpurea*



DIGITALIS PURPUREA, THE FOXGLOVE OR COMMON FOXGLOVE IS A POISONOUS SPECIES OF FLOWERING PLANTS IN THE FAMILY PLANTIGNACEAE. IT IS A HERBACIOUS BIENNEAL PLANT. THE LEAVES ARE SPIRALLY ARRANGED , BROAD , SIMPLE AND COVERED WITH GLANDULAR HAIRS, IMPARTING A WOOLY TEXTURE IT IS THE ORIGINAL SOURCE OF THE HEART MEDICINES DIGOXIN .

10. EDEN ROSE



ROUNDED, DEEPLY CUPPED, FULL FLOWERS OF CREAMY WHITE AND SUFFUSED WITH PINK MOST INTENSLY AT THE EDGE OF THE PETALS. THERE IS A SLIGHT FRAGRANCE. IT REPEAT FLOWERS WELL. IT HAS VERY STURDY ,DENSE, DARK GREEN FOLIAGE WITH LARGE , SEMI-GLOSY LEAVES, AND ALMOST NO PRICKLES.