

“ Sheel, Sharir, Adhyayan ”  
Aundh Shikshan Mandal, Aundh



Raja Shripatrao  
Bhagawantrao  
Mahavidyalaya, Aundh.  
(Satara)

**Experiential Learning**

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***B.SC. PART 1,2 & 3 BOTANY***

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Class Scout No. -  
30292



Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh

Department of Botany

CERTIFICATE

Exam no.

Date:- 27/3/17

This is to certify that she / He Jashvi Komal Vishwas

has satisfactorily completed the submission as per required in Botany course prescribed by Shivaji University, Kolhapur for BSc.III Botany practical examination under my supervision in the year 2016-2017.

*(Signature)*

Teacher in charge

*(Signature)*  
27/3/17

Head

*(Signature)*

*(Signature)*

Examiner

TO VISIT NURSARY  
AND  
LEAD BOTANICAL  
GARDEN

Name - Yaday Komal Vishwas

Class - B.Sc. II

Year - 2016-17

Sub - Botany

# INTRODUCTION

We the student of B.Sc. II. We are visited the Lead Botanical garden of Shriji University in 1-3-2017.

There are about 55 student are visited to this garden.

The major B section are in Lead Botanical Garden. Information about LBG as follows:

After visiting LBG we are visited the Historical place, PANHALLA.

After visiting the historical place we are visited Shriji nursery. Area of nursery is about 25 ha. various types of plants are seen which are medicinal ornamental & aesthetic value.

# Lead Botanical Garden

## Major Section in LBG.

1) Greenery :- It is established in 2005. In this greenery holds. Juerm plasm collection of 61 spp.

2) Pinodum :- In this pinodum 22 spp of gymnosperm.

3) Conservatory of Rhizomatous, caudexous, Tuberosus Bulbus plants :-

In this section 40 spp of warden plant are conserve.

4) Aquatic plant :- Remarkable plant victoria, Amazonica, Nelumba, Nucifera.

Medicinal Plants :- Chief 25 spp of medicinal plants have been maintained in this section.

Palmodum :-

In palmodum hold more than 70 spp of indigeneous as well as collected palme orchidaceus there are about 60 spp of Indepengeous mentioned in orchidaceum.

Herbarium medicinal plants :- If suppose 100 medicinal plants these species of warden plant of Andaman nikobae have been introduced in the

asbiodatum L.B.G.

Special Genes

Mango genes. Geovinis have been medicinal in the LBG insectivorous plant. This section introduced insectivorous plants.

Plant Discoveries of Botany Department Shivaji University, Kolhapur

Discovery of new species is great pleasure of every taxonomist. Botany department of Shivaji University, Kolhapur has made significant contribution by discovery of 60 new spp of flowering plants.

There are just 12 species in the family Hydrocharitaceae belonging to genus Teichuzia. 11 species of Teichuzia are restricted to Australian continent & form a group of basal angiosperm. Teichuzia species have several unique features of an enigma for Botanists.

1) Botanical Name :- Dypsis lutescens.

family :- Arecaceae  
:- Arec palm.

Native place :- Madagascar.

2) Botanical Name :- Cycas zumpii

family :- Cycadaceae  
:- Queen Sago

Native place :- New Guinea.

3) Botanical Name :- Hyphaena dichotoma  
(White) sarakols.

family :- Arecaceae

4) Botanical Name :- Callistemon lanceolatus

family :- Myrtaceae

5) Botanical Name :- Araucaria columnaris

family :- Araucariaceae

Native place :- South western pacific.

6) Botanical Name :- Phoenix coccoloni

family :- Arecaceae

Native place :- South western Asia.



- 7) Botanical Name :- Phoenix robusta Hookf  
family :- Palmaeaceae
- 8) Botanical Name :- Phoenix sylvestris  
family :- Palmaeaceae  
Native place :- Candy Islands
- 9) Botanical Name :- Phoenix robusta  
family :- Palmaeaceae  
Native place :- India
- 10) Botanical Name :- Rhynchospora alba  
family :- Palmaeaceae
- 11) Botanical Name :- Cycas revoluta  
family :- Cycadaceae  
Native place :- Southern Japan  
Japanese cycas palm
- 12) Botanical Name :- Beaucarnea feageana  
family :- Asparagusaceae  
Native place :- Tropical Africa
- 13) Botanical Name :- Adiantum ocellatum  
family :- Polypodiaceae
- 14) Botanical Name :- Beaucarnea recurvata  
family :- Asparagusaceae

15) Botanical Name :- Ensete glaucum  
family :- Musaceae.  
 Snow Banana.  
Native place :- China.

16) Botanical Name :- Wallichia di deha  
family :- Heaceae.

17) Botanical Name :- Xylocarpus granatum  
family :- Mimosaceae.

18) Botanical Name :- Avicennia officinalis  
family :- Avicenniaceae.

19) Botanical Name :- Avicennia marina  
family :- Avicenniaceae.

20) Botanical Name :- Bauhinia gymnochizom  
family :- Rhizophoraceae.

21) Botanical Name :- Excoecaria agallocha  
family :- Euphorbiaceae.

22) Botanical Name :- Cesarea adollum  
family :- Apocynaceae.

23) Botanical Name :- Teasin polymophe  
family :- Bayoptaceae.

24) Botanical Name :- Washingtonia filifera  
family :- Arecaceae.  
 California palm.

Native place :- North America.

25) Botanical Name :- Sabal Palmetto.

family :- Arecaceae.

Native place :- Florida.

26) Botanical Name :- Wodyetia biguacota.

family :- Arecaceae.

Native place :- Australia.

27) Botanical Name :- Bismarckia nobilis

family :- Arecaceae

Bismarck palm

Native place :- Malag.

28) Botanical Name :- Pinus saxburghii.

family :- Pinaceae

chir. pine

Native place :- Himalaya.

29) Botanical Name :- Hyplarea dichotoma

family :- Arecaceae.

39) Botanical Name :- Cinnamomum Verum

family :- Lauraceae.

40) Botanical Name :- Hypoxyp dichadoma

family :- Araceae.

41) Name of plant :- Hypocistate

6 pot or

42) Name of plant :- Kala cofot

golden vezy

43) Name of plant :- Apzalondea

5 pot 300

44) Name of plant :- Tilendeisheet 6pot

45) Name of plant :- Nuxaodista

46) Name of plant :- faykas doek

47) Name of plant :- Robbit food guen.

48) Name of plant :- Sepromiya pink

49) Name of plant :- fidoniya.

50) Name of plant :- Madhyana

51) Name of plant :- Radiontum guen

52) Name of plant :- Ciluee veegy guen

53) Name of plant :- guen Radiontum

54) Botanical plant :- Thun bergia grand  
Acanthaceae  
Bengal deumpet.

## 1) Restoration Programmes :-

- *Cecropias* (Apocynaceae)
- *Abutilon canadei* (Malvaceae)
- *Leinocarpus himroni* (Malvaceae)
- *Hubbardia heptaneuron* (Poaceae)
- Mangroves.

### • Cecropias (Apocynaceae) :-

In maharashtra 25 species are recorded out of which 17 species are endemic & threatened. Tubers of cecropias are starchy & edible. Which are nutritive & highly medicinally important some of the butterflies, bees & complete their life cycle on cecropia species. Some of them are host specific.

### • Abutilon canadei (Malvaceae) :-

*Abutilon canadei* is critically endangered species known only from 8-9 location with about 100 individuals from Matheran Western Ghats. It grows in main forest of Sahyadri, ranging from Amba ghat in south to theischand-dugoo in north. It has beautiful flowers of orange yellow colour which is of ornamental value.

• Cainocarpus nimmoni (Malvaceae) :-

Cainocarpus is monotypic endemic tree genus with fragmented population in western ghats. The individuals are sparsely distributed in semi-deciduous to dry deciduous forest of Maharashtra & Karnataka. Its wood is used for craft making by tribal people.

• Hubbardia heptaneuron (Poaceae) :-

Hubbardia is critically endangered & endemic genus which was on the verge of extinction. It grows on rocky habitat. Hubbardia heptaneuron originally known from Jog falls, a famous water fall in Karnataka state have been restored.

• Mangroves :-

Department has made significant contribution in restoration of mangrove ecosystem. Under the program in addition to common mangroves, two rare mangroves viz. *Cynometra* & *Heritiera* have been restored.

2020  
11/3/2021  
B. S. Kulkarni

Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh

Department of Botany


CERTIFICATE

Exam no. 2015075500592755 Date:-18-17-2018

This is to certify that she / He Pawar Supriya Sampat

has satisfactorily completed the submission as per required in Botany course prescribed by Shivaji University, Kolhapur for BSc.III Botany practical examination under my supervision in the year 2017-2018.

  
Teacher in charge

  
HEAD  
Department of BOTANY  
R. D. M. Aundh

  
Examiner





Page No.:

Date:



TouE Report

2017 : 18

BSC-III

Botany



colors





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Date: \_\_\_\_\_

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### Introduction :-

The excursion (collection tour of BSc III Botany) were arranged at botanically interested places koyanagar, chiplun, hedni, velneshwar, gahagar on 8 september

In this tour 20 student of BSc III class (Botany) & two teachers were participated the aim & objectives of educational tour is to visit the botanically interested places and to study the vegetation in natural ecological condition. includes rare endemic & botanically interesting plants.

koyanagar is situated in western ghats while chiplun is part of kokan area. hedni, velneshwar & gahagar are situated on sea coast of Arabian sea. phytogeographical information of visited area is as follows.

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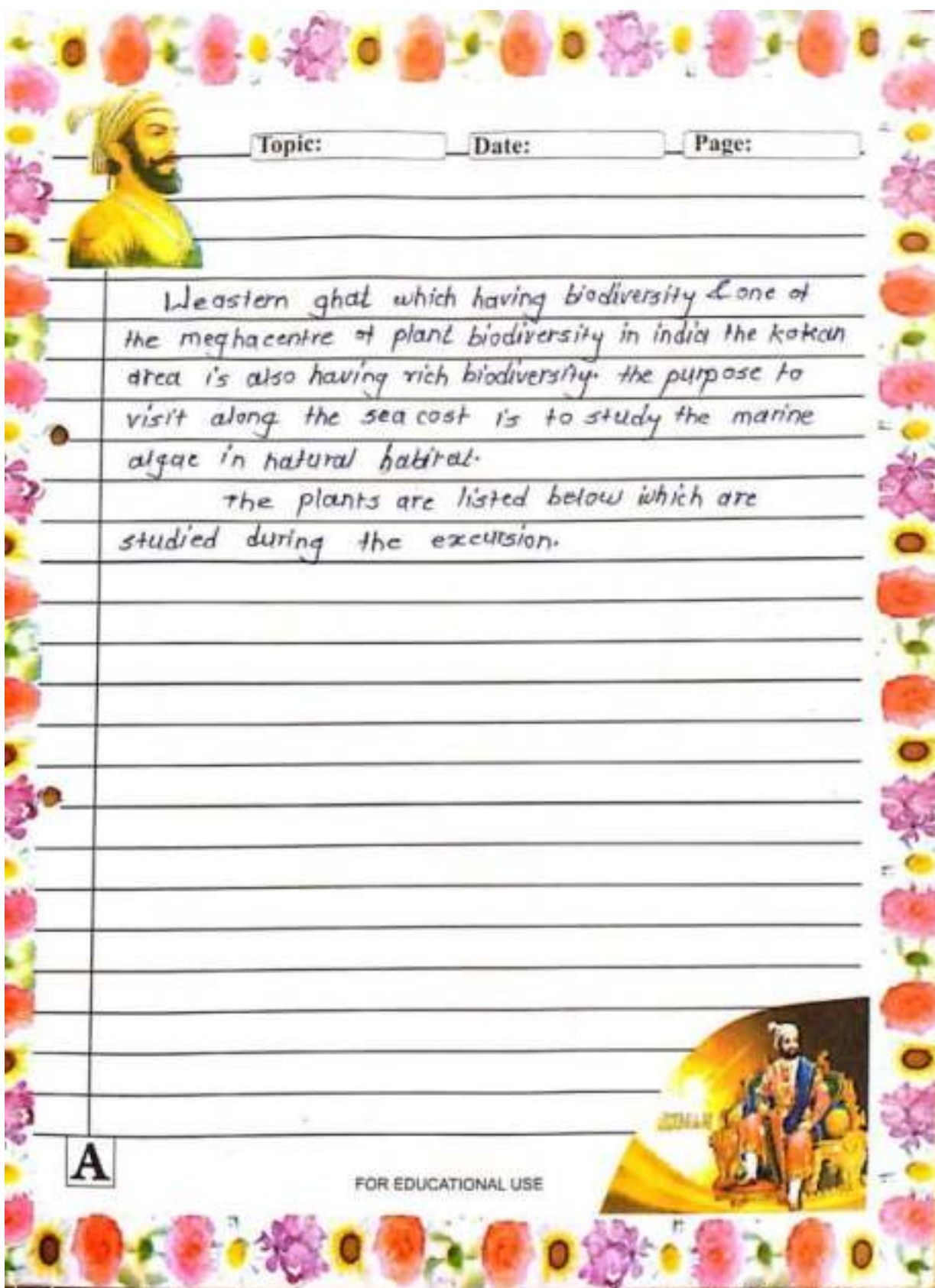
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Western ghat which having biodiversity & one of the megahcentre of plant biodiversity in india the kokon area is also having rich biodiversity. the purpose to visit along the sea cost is to study the marine algae in natural habitat.

the plants are listed below which are studied during the excursion.

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Sr No.	Name of the plant sps.	family
1)	<i>Dillenia indica</i>	Dilleniaceae
2)	<i>Clematis gauriana</i>	Ranunculaceae
3)	<i>Mikhaelia champaca</i> (ornamental plant)	Magnoliaceae
4)	<i>Nelumbo nucifera</i> (ornamental plant)	Nymphaeaceae
5)	<i>Cleome viscosa</i>	cleomaceae.
6)	<i>Cleome gynandra</i>	cleomaceae
7)	<i>Abutilon indicum</i>	malvaceae.
8)	<i>Abutilon crispum</i>	malvaceae
9)	<i>Triumpfetta rhomboidea</i>	Teliaceae

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Topic: \_\_\_\_\_

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Sr.no	Name of the plant species	family
10)	<i>Murraya paniculata</i>	Rutaceae
11)	<i>Olea dioeca</i>	oleaceae
12)	<i>Legustrum neilgerno</i>	oleaceae
13)	<i>Anacardium occidentale</i> (dominant cultivated tree)	Anacardaceae
14)	<i>Semicarp anacardium</i> (dominant tree)	Anacardaceae
15)	<i>Mangifera indica</i> (dominant cultivated tree)	Anacardaceae
16)	<i>Mimosa pudica</i>	minoceae
17)	<i>Tamarindus indicus</i>	caesalpino- aceae

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Topic: \_\_\_\_\_ Date: \_\_\_\_\_ Page: 3

Sr.No.	Name of the plant species	family
18)	Butea monosperma (Flame of the forest)	fabacea.
19)	Bombax malbaricum (dominant tree)	Bombacace.

The species of Terminalia are most dominant in weastern ghat

Sr.No.	Name of the plant	family
1)	Terminalia chebula (hirda)	Combretaceae
2)	Terminalia belarica (Bilbe-da)	Combretaceae
3)	Terminalia tomentosa	Combretaceae
4)	Terminalia paniculata	Combretaceae
5)	Terminalia argun	combretaceae

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Topic: \_\_\_\_\_

Date: \_\_\_\_\_

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Sr.No	Name of the plant	family -
6)	<i>Terminalia catapa</i>	Combretaceae
7)	<i>Myrcetoln ambelatum</i> (most dominant tree in Western ghat)	Melastomaceae
8)	<i>Rhandia sps.</i>	Rubiaceae
9)	<i>Exacum lduil</i>	Gentianaceae
10)	<i>Canscora diffusa</i>	Gentianaceae
11)	<i>Impetians balsamiana</i>	Gentianaceae
12)	<i>Impetians terda</i>	Geraniaceae
13)	<i>Impetians pulcherhina</i>	Geraniaceae
15)	<i>Impetians equowalis</i>	Geraniaceae

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Topic: \_\_\_\_\_

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Sr.No	Name of the plant	family
15)	<i>Catharan thum roseus</i>	Apocynaceae
16)	<i>Heliotropium indicum</i>	Boraginaceae.
17)	<i>Ipomea biloba</i> (occure in saline soil) (endemic to sea sour)	Boraginaceae
18)	<i>Solanum indicum</i> (chinetturdi)	solanaceae
19)	<i>Spubea dolphinifolia</i>	scropulariaceae
20)	<i>Ramphicarpa</i>	scropulariaceae
21)	<i>Sterculca foetida</i> (Ergantic tree)	sterculaceae.

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Sr.No.	Name of the plant	family
22)	<i>Stereulea urens</i>	stereuleaceae
23)	<i>Tecoma tons</i>	Bignoniaceae
24)	<i>Canarus sps</i>	Conoraceae
25)	<i>Astracantha longiflora</i>	Acanthaceae
26)	<i>Blepharis sps</i>	Acanthaceae
27)	<i>Rungea sps</i>	Acanthaceae
28)	<i>Polygonum glabrum</i>	polygonaceae



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Orchids are indicators of evergreen or semi evergreen forest most of them commonly occur of Western ghat of kokan.

Sr.No.	Name of the plant	family
1)	Dendrobium	orchidaceae
2)	Vanda xoxburghii	orchidaceae
3)	Maloxis	orchidaceae
4)	Trich. dalzellii	orchidaceae
5)	Pandanus tinerious (keveda)	pandanaceae
6)	Cara Indica	Cunaceae
7)	Cocus nucifera	palmae.
8)	dominantly cultivated unbranched tree	

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# TOUR REPORT



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**BOTANY  
TOUR REPORT**  
AUNDH SHIKSHAN MANDALS AUNDH

**RAJA SHRIPATRAO BHAGAWANTRAO MAHAVIDYALAY,  
AUNDH (KHATAV)  
DEPARTMENT OF BOTANY**

**CERTIFICATE**

EXAM No. 2016064626

DATE: 5-3-19

This is to certify that *Vedpathak Tanuja Hanuman* has satisfactory completed tour as required in Botany course prescribed by Shivaji University, Kolhapur for BSc III Botany practical examination under my supervision in the year 2018-2019

  
Teacher in charge

  
Examiner

  
HEAD  
Department of Botany  
R. B. M. Aunth.

Page No.

Date

# Toua Report

2018 - 2019

Name :- Vedpathak Tanuja Hanmant

Sub :- Botany

PRN No :- 2016064626

Guidence name :-

Prof. Yadav U.A Sir

colors



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Page No.

Date :

Kolhapur

And

Gaganbavda

Study

Tour

colors

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## Annual tour report of..... Kolhapur and Gaganbavda...

The collection to tour of BSc-III Botany was arranged at botanically interested places such as Kolhapur & Gaganbavda in this excursion tour 23 students of BSc-III & 2 teachers of department were participated.

The aim & objective of diseducation tour is visit botanically interested places & to show to visitation including some endemic rare & indigenous plants in their natural habitat.

The Gaganbavda is situated in west-east ghat 52 km west from Kolhapur while 40 km East from Goa Mumbai highway.

The exact Geographical Location →

Latitude → 16.31.36.62 North

Longitude → 73.49.53.81 East

LongiAltitude & Elevation → 619-61 meter from sea shore

Rainfall → Approximately 2500 to 4500 mm per year

Forest type → semi evergreen to dry deciduous subtropical forest.

Soil type → Red laterite

Gaganbada is situated in west-  
 lean ghat is one of the mega centre of plant  
 biodiversity in Indian the specially flowering  
 biodiversity is reach in western ghat. Approxima-  
 tely no. of flowering species occurs in western  
 ghat. Most of them are endemic species of  
 western ghat. Some rare & intergeat plant are  
 also occur in vegetate area.

We observed endemic indigeat  
 botanical interesting species in they natural  
 habitat during this visits the plant observed  
 during visit are listed below

Sl No	Name of plant species	Family	Locality
1]	<u>Adnsonia digitata</u>	sterculiaceae	Kolhapur C.L.B.G
2]	<u>Ammannia baccifera</u>	Lythraceae	Gaganbada
3]	<u>Anacardium occidentale</u>	Anacardiaceae	Gaganbada
4]	<u>Clematis gauriana Roxb</u>	Ranunculaceae	Gaganbada
5]	<u>Pillinea indica</u> L. Ne	Dilleniaceae	Gaganbada
6]	<u>Bambax malabarium</u> D.C. Poed	Malvaceae	Gaganbada



7]	<u>Stæculia foetida</u> Roxb	stæculiaceae	Gaganbavda
8]	<u>stæculia uæens</u> Roxb	stæculiaceae	Gaganbavda
9]	<u>Linum mysoæens</u>	Linaceae	Gaganbavda
10]	<u>nothopoditis (mappha)</u> Foetida	olacæae	Gaganbavda
11]	<u>Butea monespara</u>		Gaganbavda

The plant is called  
because of their fragrant attractive flowers.

12]	<u>Moulaya spicata</u> Roxb	caesalpinaceae	Gaganbavda
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The species of Terminalia are  
dominantly occur in the western ghat  
for eg →

13]	<u>Terminalia chebula</u> Roxb (Hlada)	combælaceae	Gaganbavda
14]	<u>Terminalia bellerical</u> Roxb (Beheda)	combælaceae	Gaganbavda
15]	<u>Terminalia tomentosa</u> stein (Ain)	Combælaceae	Gaganbavda

Taifeao chuan.

The area of maharashtra state are well known for anjan kanchan & karwandi  
Botanical Name are

<u>Mymecelon umbelatum</u> (Buan (Anjan))	melastomeceae	Gaganbauda
--	---------------	------------

most dominant plant in western ghat

<u>Bohunea species</u> (Kanchan)	Caesalpiniae	Gaganbauda
-------------------------------------	--------------	------------

<u>Carissa carandus</u> (Karwandi)	Rubiaceae	Gaganbauda
---------------------------------------	-----------	------------

<u>Lobelia nicotifolia</u> Heyne	compositae	Gaganbauda
-------------------------------------	------------	------------

<u>Plumbago zeyheria</u> Linn (Chitkak)	plumbaginaceae	Gaganbauda
--	----------------	------------

16]	<u>Teraminolia paniculata</u>	combretaceae	Gaganbauda
-----	-------------------------------	--------------	------------

17]	<u>Teraminolia cajan</u>	combretaceae	Gaganbauda
-----	--------------------------	--------------	------------

The Teraminolia species is commonly used many ayurvedic medicine such as Taifea chuan.

The area of maharashtra state are well known for cinjan kanchan & karwandi  
Botanical Name are

1]	<u>myrcelon umbelatum</u> Buan (Anjun)	melastomeaceae	Gaganbauda
----	---	----------------	------------

most dominant plant in western ghats

2]	<u>Gohuna species</u> (kanchan)	caesalpiniae	Gaganbauda
----	------------------------------------	--------------	------------

3]	<u>Carissa carandus</u> (karwandi)	Rubiaceae	Gaganbauda
----	---------------------------------------	-----------	------------

13]	<u>Lobelia nicotinaefolia</u> Heyne	compositae	Gaganbauda
-----	--	------------	------------

	<u>Plumbago zeyheria</u> Linn (chitak)	plumbaginaceae	Gaganbauda
--	---	----------------	------------

20]	<u>Conoclinium diffusum</u> F. Poac	Gentianeaceae	Gaganbauda
21]	<u>Exacum Lawii</u>	Gentianeaceae	Gaganbauda

The species of Impatiens commonly occur in Gaganbauda are as follows.

1]	<u>Impatiens balsamifera</u>	Geraniaceae	Gaganbauda
2]	<u>Impatiens pulcherrima</u>	Geraniaceae	Gaganbauda
3]	<u>Impatiens lawii</u>	Geraniaceae	Gaganbauda
4]	<u>Impatiens aequalis</u>	Geraniaceae	Gaganbauda
5]	<u>Tectona grandis</u> Linn (Teak)	Verbenaceae	Gaganbauda

Commonly occur in western ghats wood is very much valuable hence it is called magic tree

22]	<u>Chlorodendrum serratum</u> (Spaeng)	Verbenaceae	Gaganbauda
23]	<u>Chlorodendrum unfeatum</u>	Verbenaceae	Gaganbauda

<u>Cyperus</u> sps.	<u>Cyperaceae</u>	Gaganbawda
<u>Habenaria longicaulata</u>	<u>orchidaceae</u>	Gaganbawda
<u>Feria dalzellii</u>	<u>orchidaceae</u>	Gaganbawda
<u>Vanda</u> sps.	<u>orchidaceae</u>	Gaganbawda
<u>Pentstemon</u>	<u>orchidaceae</u>	Gaganbawda
<u>Paicaulon</u>	<u>Paicaulaceae</u>	Gaganbawda
<u>Chlorophyton</u> sp.	<u>Liliaceae</u>	Gaganbawda
<u>Piperadi</u>	<u>Liliaceae</u>	Gaganbawda
<u>Urigena</u>	<u>Liliaceae</u>	Gaganbawda

### Triclophytes.

1] <u>Selaginella</u>	<u>Selaginaceae</u>	Gaganbawda
2] <u>Adiantum</u>	<u>Selaginaceae</u>	Gaganbawda

3] <u>Chilanthus (silves rum)</u>	<u>Selageniaceae</u>	<u>Gaganbavda</u>
4] <u>Plicatosorium</u>	<u>Selageniaceae</u>	<u>Gaganbavda</u>
5] <u>Teais . etc</u>	<u>Selageniaceae</u>	<u>Gaganbavda</u>

Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh

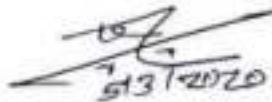
Department of Botany

CERTIFICATE

Exam no.

Date:- 05/03/2020

This is to certify that she / He Nikam Poonam Manoj  
has satisfactorily completed the submission as per required in  
Botany course prescribed by Shivaji University, Kolhapur for  
BSc.III Botany practical examination under my supervision in  
the year 2016-2020

  
5/3/2020

Teacher in charge

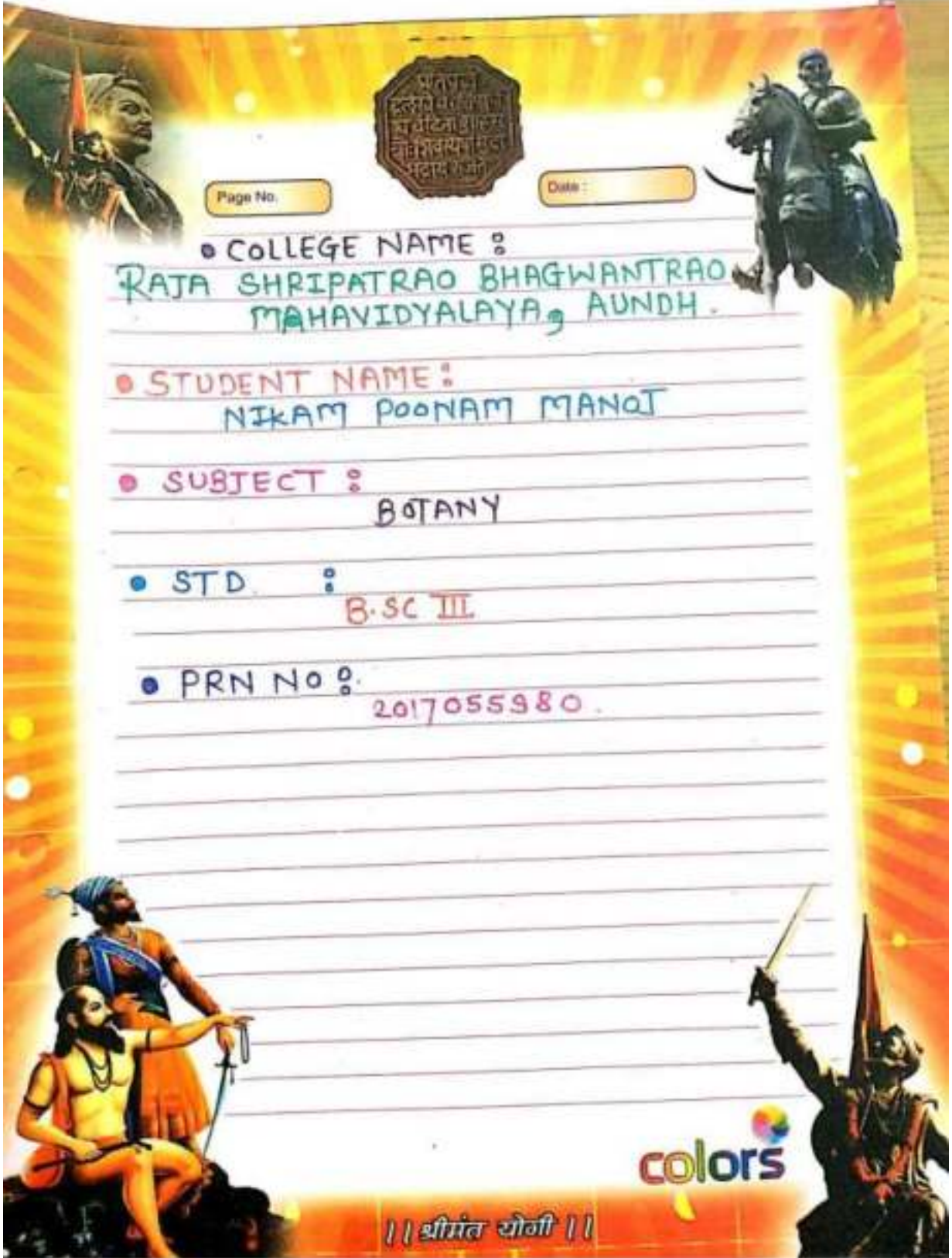
  
5/3/20

HEAD  
Department of BOTANY  
R. B. M, Aundh.

  
12/3

Examiner





Page No. \_\_\_\_\_

Date: \_\_\_\_\_

● COLLEGE NAME :  
RAJA SHRIPATRAO BHAGWANTRAO  
MAHAVIDYALAYA, AUNDH.

● STUDENT NAME :  
NIKAM POONAM MANOT

● SUBJECT :  
BOTANY

● STD. :  
B.SC III

● PRN No :  
2017055980

colors

|| श्रीमंत योगी ||





Page No.

Date

TouE Report  
2019-20.

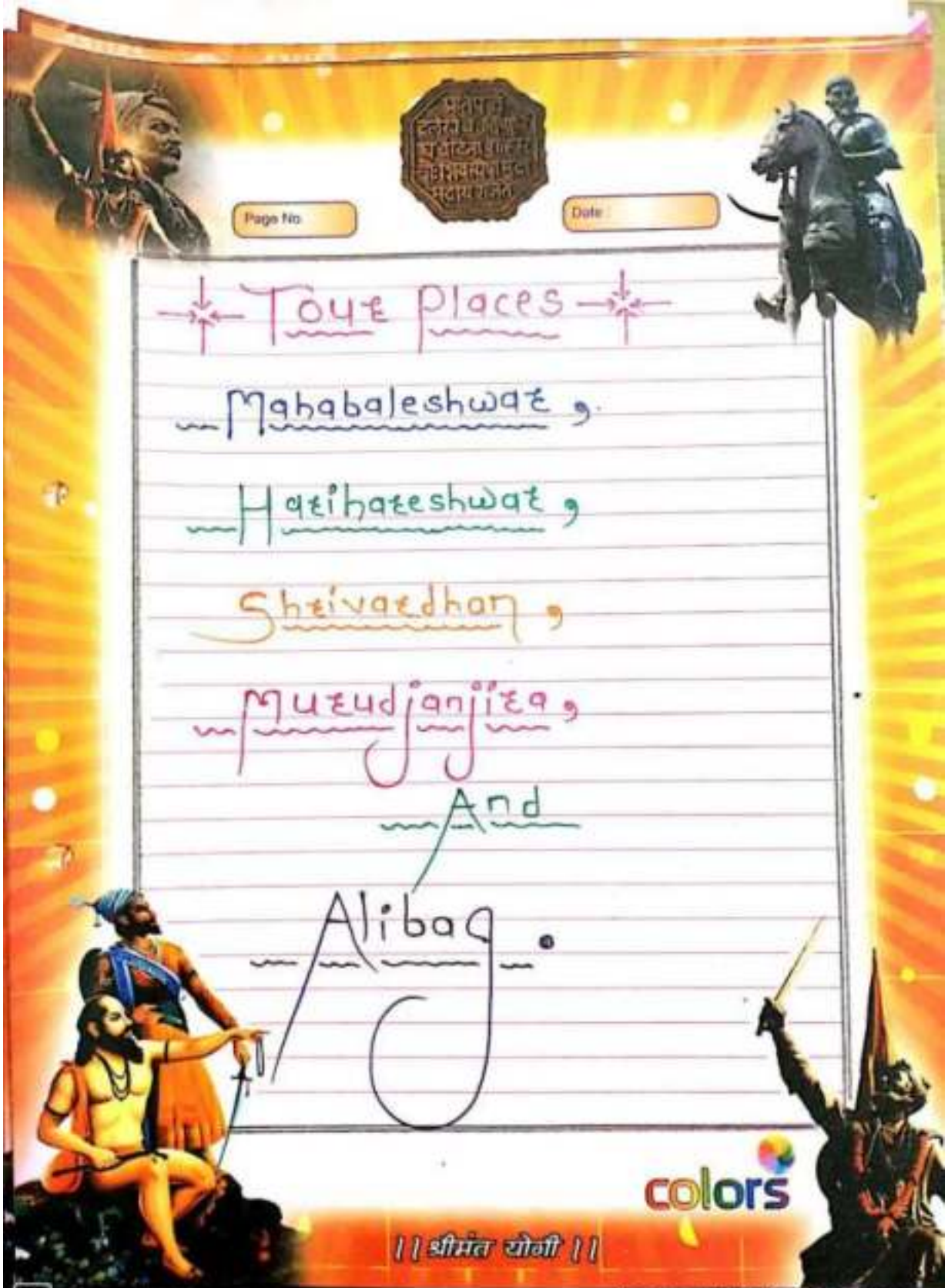
B.SC III.

BOTANY  
☺

Guidence teacher name :-  
PROF. Yadhav. U.A Sir.



॥ श्रीगंत योगी ॥



Page No

Date

→ \* Tour places \* →

Mahabaleshwar ,

Haridwar ,

Shivdhan ,

Muzdjanjira ,

And

Alibag .

colors

|| श्रीमंत योगी ||

Page No. 1      Date: \_\_\_\_\_

## Introduction :-

Mahabaleshwar, Hatihateshwar, Sheivardhan, Mutudjanjira, Alibag.

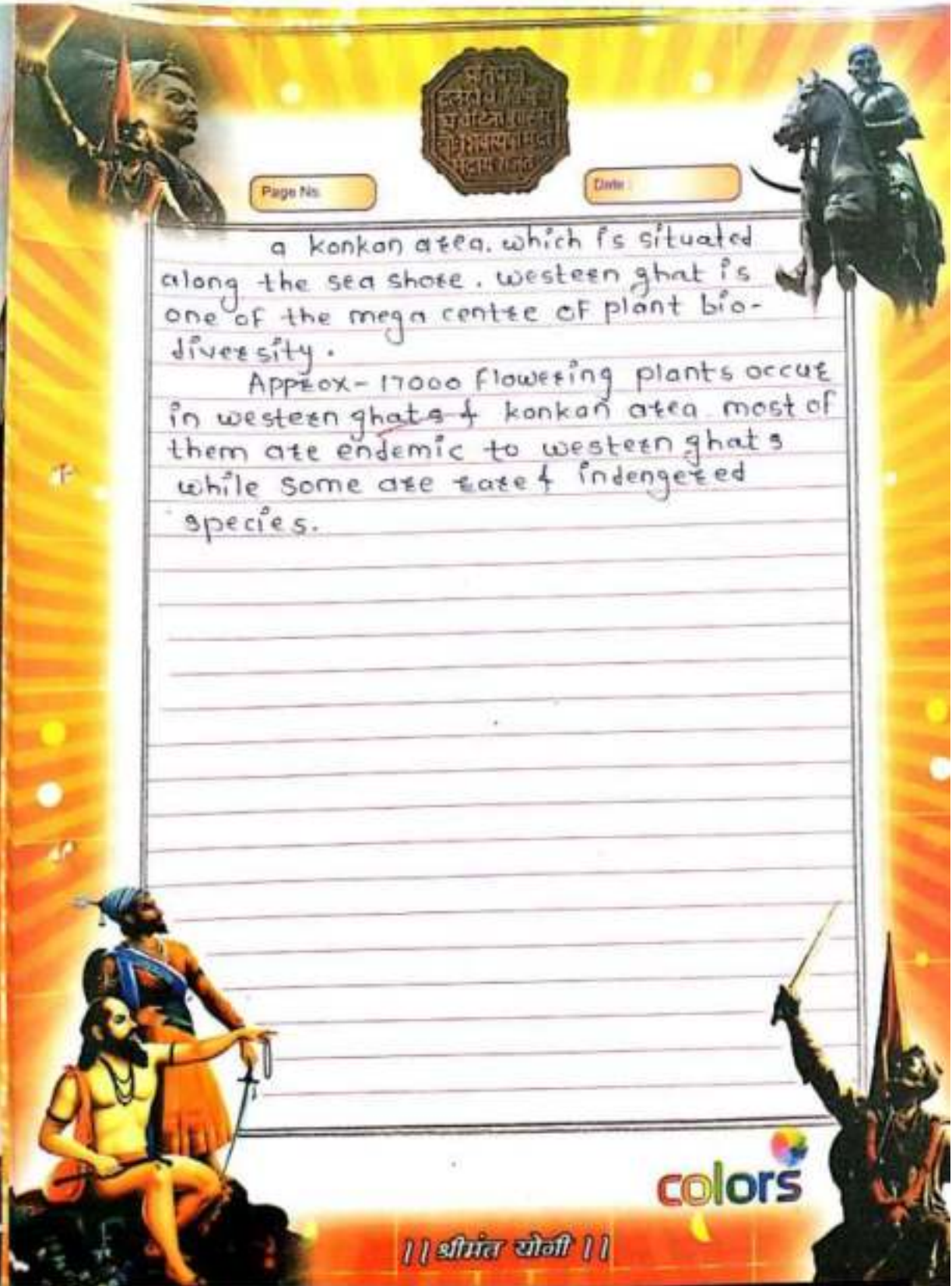
The collection of excursion tour of department of botany B-sc part III was arranged at botanically interesting places like Mahabaleshwar, Hatihateshwar, Sheivardhan, Mutudjanjira, Alibag etc. on 3 & 4 January 2020.

The aim & objective of these excursion tour is to observe the plant community in their natural habitat, to observe botanically interested plant species & rare threatened indigenous species to study plants growing in different adverse habitat. Such as saline water, marshy habitat etc, to study the different types of ecosystem.

In this excursion tour 27 students of B-sc part III & four faculties of botany department of bot were participated. During this excursion we were visited the localities of different botanical interests. The area visited are parts of western ghats &

**colors**

|| श्रीमंत योगी ||

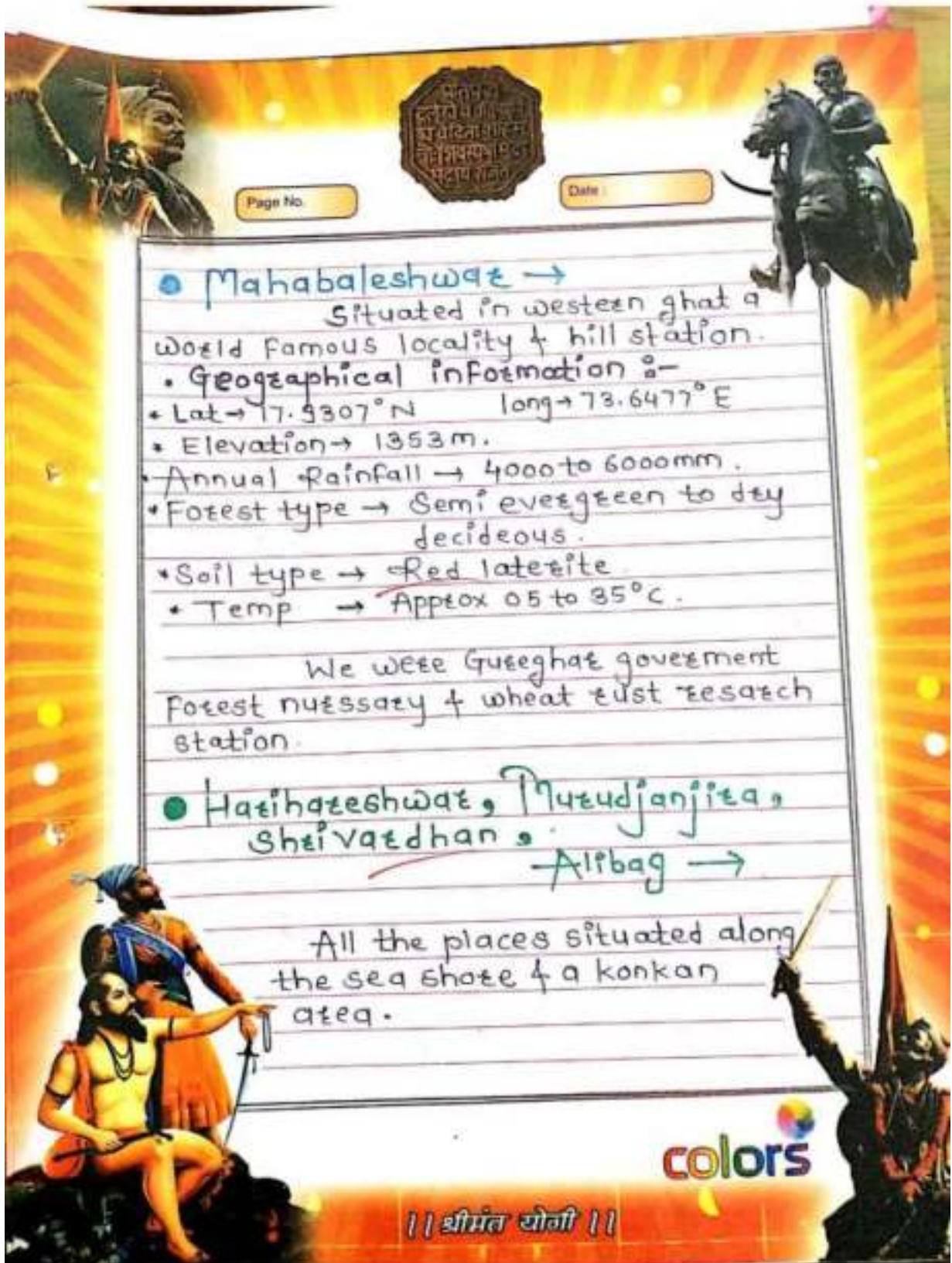


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a konkan area, which is situated along the sea shore. western ghat is one of the mega centre of plant biodiversity.

Approx- 17000 flowering plants occur in western ghats & konkan area. most of them are endemic to western ghats while some are rare & endangered species.



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● Mahabaleshwar →

Situated in western ghat a world famous locality & hill station.

- Geographical information :-
- Lat →  $17.9307^{\circ}N$       long →  $73.6477^{\circ}E$
- Elevation → 1353 m.
- Annual Rainfall → 4000 to 6000 mm.
- Forest type → Semi evergreen to dry deciduous.
- Soil type → Red laterite.
- Temp → Approx 05 to  $35^{\circ}C$ .

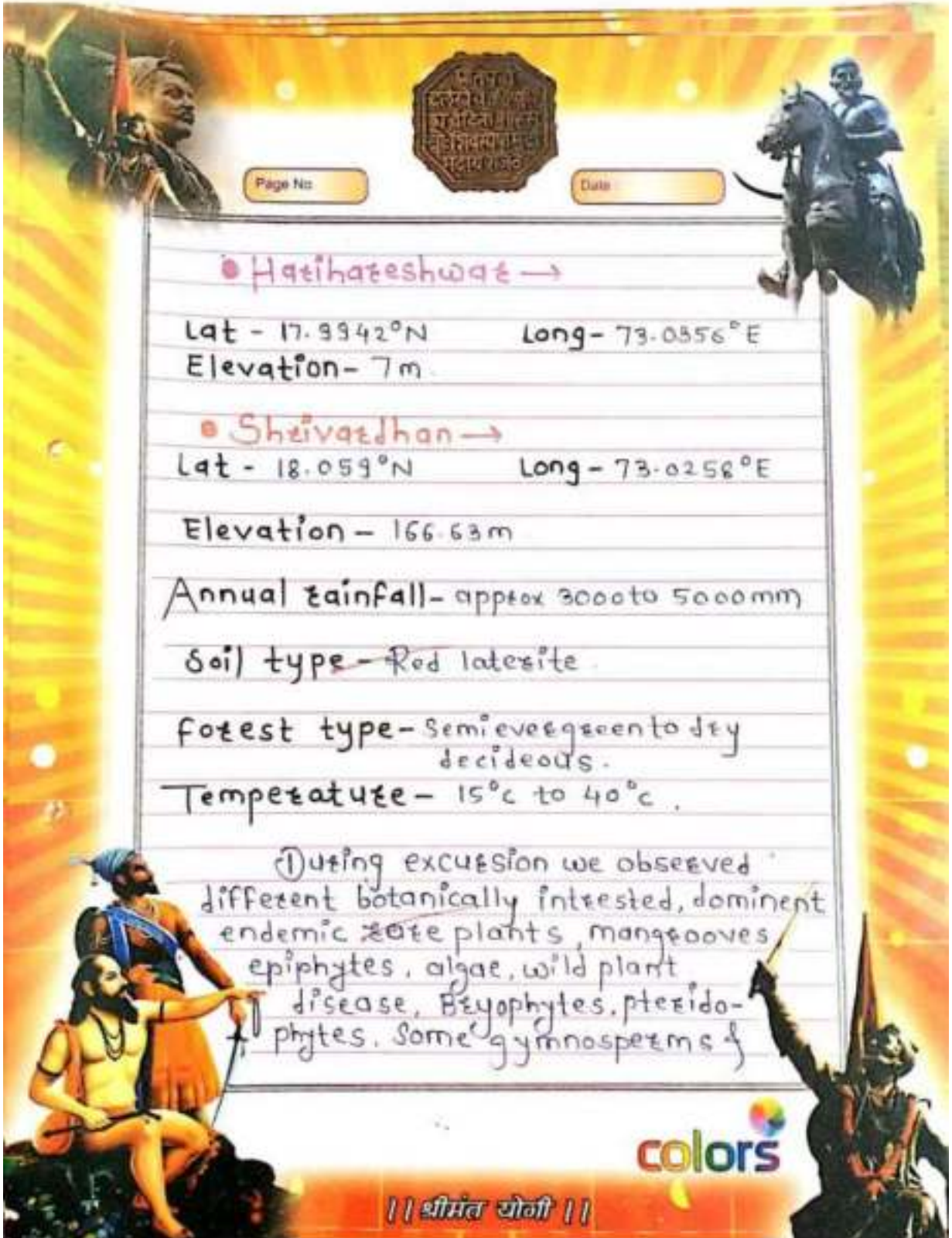
We were Gujrat government forest nursery & wheat cult research station.

● Hastheshwar, Murudjanjer, Shevadh •  
Alibag →

All the places situated along the sea shore & a konkan area.

colors

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● Haaihareshwar →

Lat - 17.9942°N      Long - 73.0856°E  
Elevation - 7m

● Sheivaadhan →

Lat - 18.059°N      Long - 73.0258°E  
Elevation - 166.63m

Annual rainfall - approx 3000 to 5000mm

Soil type - Red laterite

Forest type - Semievergreen to dry deciduous.

Temperature - 15°C to 40°C.

① During excursion we observed different botanically interested, dominant endemic ~~tree~~ plants, mangooves, epiphytes, algae, wild plant disease, Bryophytes, pteridophytes, some gymnosperms.

colors

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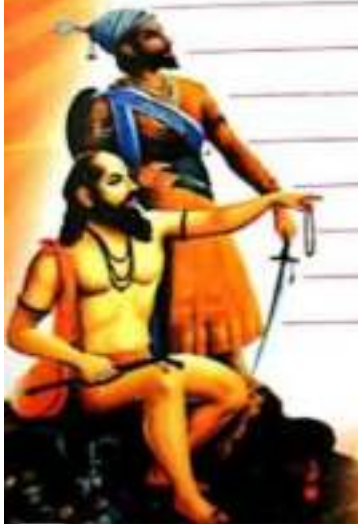


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Common angiosperm.  
The observed plant are list below.

Sr. No	Name of plant	Locality
①	<i>Climatis gausiana</i>	Mahabaleshwar.
②	<i>Dileneq Indica</i>	Mahabaleshwar.
③	<i>Maulava spicata</i>	Peatapgad.
④	<i>Elegnous latifolios</i>	Mahabaleshwar



colors

|| श्रीमंत योगी ||

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Some dominant trees of western ghats.

Sl. No	Name of plant	Family	Locality
1)	Mimocylon ambelatum (Ajin)	Milastomeceae	Mahabaleshwar
2)	Terminalia chebula (Heda)	Combretaceae	Mahabaleshwar
3)	Terminalia batesia (Beheda)	Combretaceae	Mahabaleshwar
4)	Terminalia tomentosa (Ain)	Combretaceae	Mahabaleshwar
5)	Terminalia arjuna (arjun)	Combretaceae	Mahabaleshwar
6)	Terminalia paniculata	Combretaceae	Mahabaleshwar
7)	Mangifera indica (cultivated) Mango	Anacardiaceae	Konkan
8)	Anacardium occidentale (cultivated) Cashewnut.	Anacardiaceae	Konkan

LOTUS



Topic	Page	Date
25) <i>Bombax malabaricum</i>	Conocephalaceae	Mahabaleshwar
26) <i>Mophea foetida</i>	Olacaceae	Mahabaleshwar
27) <i>Acacia cinnamom</i>	Caesalpiniaceae	Mahabaleshwar
28) <i>Eucalyptus tereticornis</i>	Myrtaceae	Mahabaleshwar
29) <i>Eucalyptus lanceolata</i>	Myrtaceae	Mahabaleshwar
30) <i>Eucalyptus robusta</i>	Myrtaceae	Mahabaleshwar
31) <i>Sarcoca indica</i>	Annonaceae	Mahabaleshwar
32) <i>Dendrocyathus strictus</i> (Beandius)	Poaceae	Mahabaleshwar
33) <i>Cinnamomum zeylanicum</i>	Poaceae	Mahabaleshwar

● Mangroves (halophytes)

Sr. No.	Name of plant	Locality
1)	<i>Rhizophora mucronata</i>	Along the sea shore

**LOTUS**

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### • Algae •

Sl. No.	Name of plant	Locality
1)	<i>Caulocopa</i> sps.	Ha. Alibag
2)	<i>Ulva</i> sps	Alibag
3)	<i>Padiana</i> sps.	Alibag
4)	<i>Gracilaria</i> sps.	Alibag
5)	<i>Sargassum</i> sps.	Alibag.

### • Gymnosperm •

Sl. No.	Name of plant	Locality
1)	<i>Agathis robusta</i>	Greeghae
2)	<i>Coffea arabica</i>	Greeghae
3)	<i>Pinus roxburghii</i>	Greeghae
4)	<i>Pinus castata</i>	Greeghae
5)	<i>Acacia cunninghamii</i>	Greeghae

LOTUS



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### ● Gnetum ●

Sr. No.	Name of plant	Locality
1)	Cycas	Gureghae nussary
2)	Podocarpus	Gureghae nussary
3)	Cupressus	Gureghae nussary

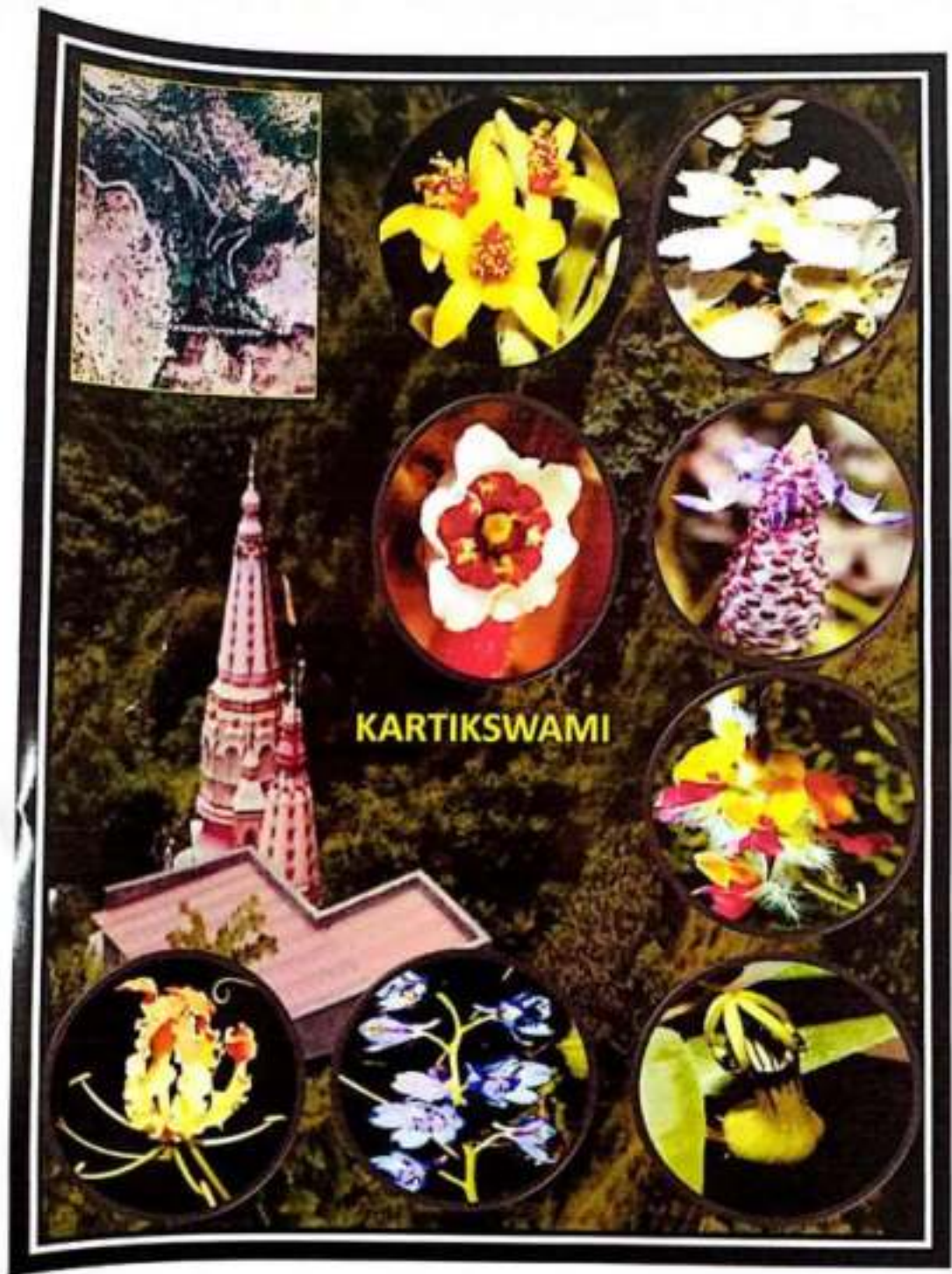
### ● pteridophytes ●

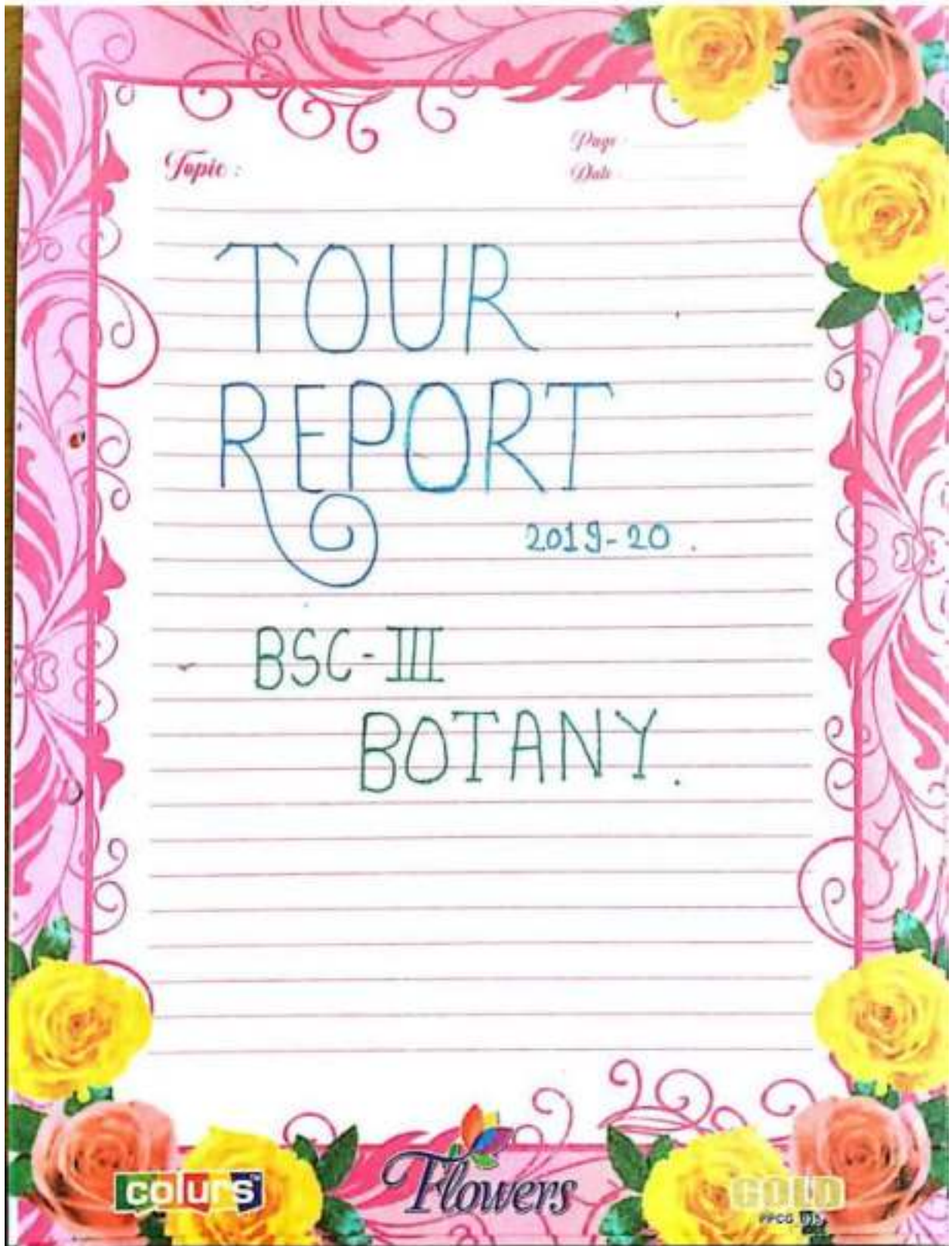
Sr. No.	Name of plant	Locality
1)	Adiantum	Gureghae
2)	chialanthus (sivesfeem)	Gureghae
3)	Pteris	Gureghae
4)	Blechnum	Gureghae

*[Handwritten signature]*



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# TOUR REPORT

2019-20 .

BSC-III

BOTANY.

colours

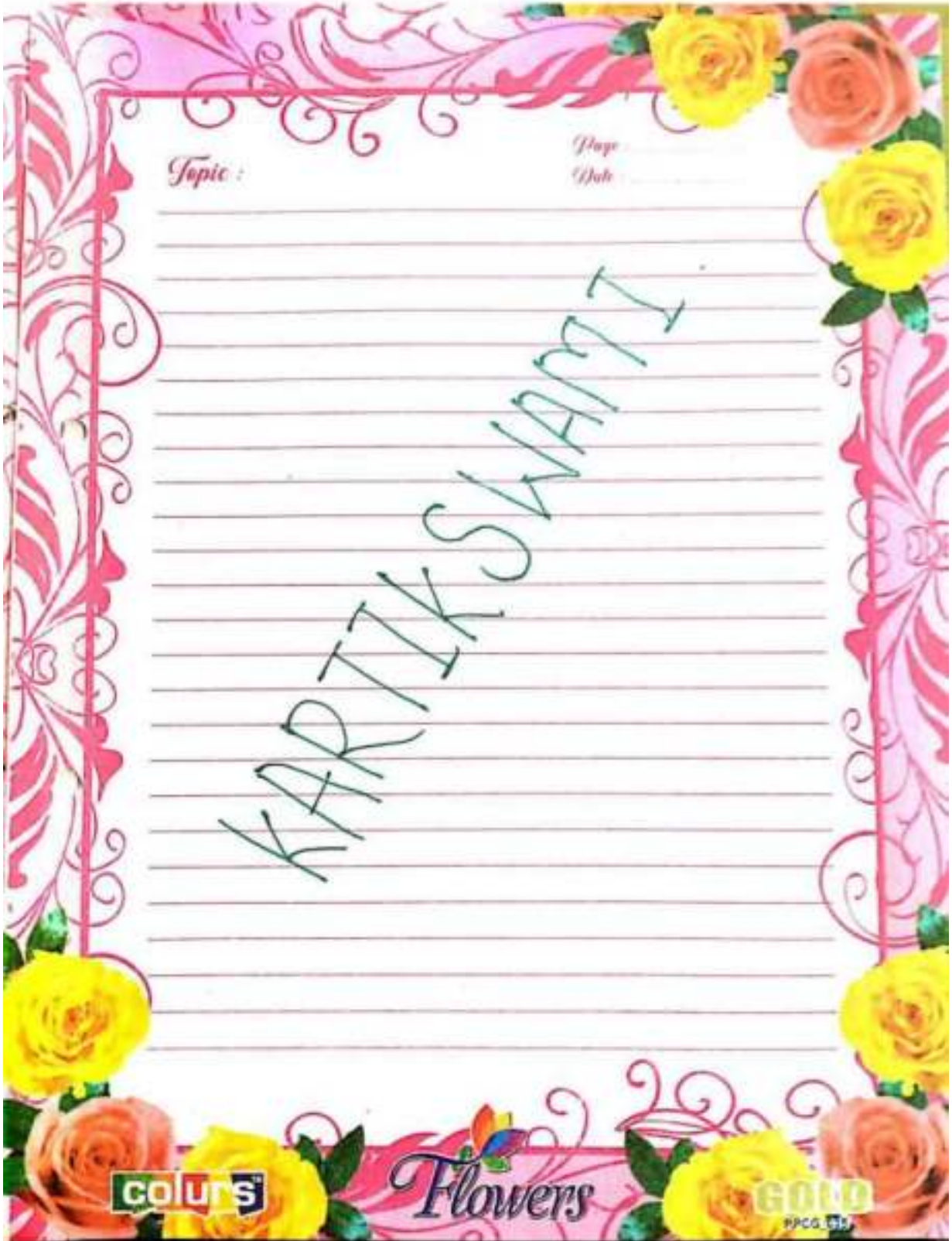
Flowers

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KARTIK SWAMI

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## Introduction →

Khatav, one of the eleven talukas of Satara district has 186457 hectares of area. It is situated in South east region. Major portion of this taluka is occupied by Mahadeo ranges of Western Ghats. The most prominent are Ramdangat Hills, Chandkhana Hills, Kastikswami Hills, Yarnai Hills, Jotiba Hills & Bhushangad Hills & part of Vardhangad. Remaining part comprises of plains with open savannas having red & black soil. The hills & rivulutes of Khatav Taluka are rich in biodiversity with some very rare & endangered plant species. It also having

Colors

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Department of Botany organized field visit at Kastikswami on It is situated on the boundary of Kozegoon & Khatav tahasil. It is one of the hill of Mahadev ranges. The plant diversity of is rich. The forest type is open scrub. dry deciduous & Shrubby Forest. type is open scrubs. dry The altitude from sea level is 3285 Ft. with N-17° 26'14.970" latitude to E-74°15'27.815" longitude. The average rain fall of this area is 450 to 550 mm. In this hilly region some algae, Bryophytes, pteridophytes & some Angiospermic plants are found. Few of them they are rare, endemic & threatened plants.



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Objectives of field visit

- Document plant diversity.
- Document the RET plant.
- Document the life forms of plants.
- To create the awareness amongst students.

The check list of plant.

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Algae

Nostoc  
spirogyra

Riccia  
Cyathodium  
Funaria  
Polytrichum

Adiantum  
Actinopteryx  
Selaginella

colours

Flowers

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	Name of plant	Family	
1	<i>Clematis gousiana</i>	Ranunculaceae	climber
2	<i>Clematis hedysarifolia</i>	Ranunculaceae	climber
3	<i>Delphinium dasycaulon</i>	Ranunculaceae	Herb.
4	<i>Annona reticulata</i>	Annonaceae	Small tree
5	<i>Annona squamosa</i>	Annonaceae	Small tree
6	<i>Polythia longifolia</i>	Annonaceae	Tree
7	<i>Cocculus hirsutus</i>	Menispermaceae	Twinee
8	<i>Tinospora cordifolia</i>	Menispermaceae	Twinee
9	<i>Argemone mexicana</i>	Papaveraceae	Herb
10	<i>Capparis zeylanica</i>	Capparidaceae	shrub
11	<i>Cleome simplicifolia</i>	Cleomaceae	Herb

**Colors**

*Flowers*

**GOLD**  
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12	<i>Cleome viscosa</i>	Cleomaceae	Herb
13	<i>Eclettia montana</i>	Placustaceae	Tree
14	<i>Polygala arvensis</i>	polygalaceae	Herb
15	<i>Polygala erioptera</i>	polygalaceae	Herb
16	<i>Polygala persicariifolia</i>	polygalaceae	Herb
17	<i>Portulaca oleracea</i>	portulacaceae	shrub
18	<i>Abutilon indicum</i>	malvaceae	shrub
19	<i>Hibiscus ovalifolius</i>	malvaceae	shrub
20	<i>Hibiscus rosainensis</i>	malvaceae	shrub
21	<i>Kyllia caevicina</i>	malvaceae	small tree
22	<i>Sida acuta</i>	malvaceae	Herb
23	<i>Sida cordifolia</i>	malvaceae	Herb

COLORS

Flowers

GOLD

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24	<u>Sida rhombifolia</u>	Malvaceae	Shrub
25	<u>Bombax ceiba</u>	Bombaceae	Tree
26	<u>Steculia usens</u>	Steculiaceae	Tree
27	<u>Cochotus trilocularis</u>	Teliaceae	Herb
28	<u>Grewia acutifolia</u>	Teliaceae	Shrub
29	<u>Grewia serrulate</u>	Teliaceae	Shrub
30	<u>Grewia filifolia</u>	Teliaceae	small tree
31	<u>Telfia rotundifolia</u>	Teliaceae	shrub
32	<u>Linum mysoence</u>	Linaceae	Herb
33	<u>Aspidopteris cordata</u>	Maphigiaceae	shrub
34	<u>Hiptage benghalensis</u>	Maphigiaceae	shrub
35	<u>Tribulus terrestris</u>	Zygophyllaceae	Herb

colours

Flowers

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48	<u>Semecarpus anacardium</u>	Anacardiaceae	Tree
49	<u>Abus peacatorius</u>	Fabaceae	Twinner
50	<u>Alysicarpus pubescens</u>	Fabaceae	Twinner
51	<u>Clitoria ternatea</u>	Fabaceae	Twinner
52	<u>Crotalaria medicaginea</u>	Fabaceae	Herb
53	<u>Crotalaria linifolia</u>	Fabaceae	Herb
54	<u>Dalbergia cissa</u>	Fabaceae	Tree
55	<u>Desmodium gangeticum</u>	Fabaceae	Shrub
56	<u>Goniogyna hirta</u>	Fabaceae	Herb
57	<u>Indigofera cassiodes</u>	Fabaceae	Herb
58	<u>Indigofera linifolia</u>	Fabaceae	Herb
59	<u>Indigofera cordifolia</u>	Fabaceae	Herb

**COLORS**

*Flowers*

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60.	<u>Indigofera glandulosa</u>	Fabaceae	Herb
61.	<u>Melilotus indica</u>	Fabaceae	Herb
62.	<u>Mucuna pruriens</u>	Fabaceae	Twining shrub
63.	<u>Paracalyx sarifosa</u>	Fabaceae	Twinner
64.	<u>Pongamia pinnata</u>	Fabaceae	Small tree
65.	<u>Psoralea medifolia</u>	Fabaceae	Herb
66.	<u>Stylosanthes mucronata</u>	Fabaceae	Herb.
67.	<u>Lornia gibbosa</u>	Fabaceae	Herb
68.	<u>Bahunia racemosa</u>	Caesalpiniaceae	Small tree
69.	<u>Cassia auriculata</u>	Caesalpiniaceae	Tree
70.	<u>Cassia mimosoides</u>	Caesalpiniaceae	Tree
71.	<u>Cassia toea.</u>	Caesalpiniaceae	Shrub

colours

Flowers

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72	<u>Cassia uniflora</u>	Caesalpinaceae	Herb
73	<u>Acacia nilotica</u>	Mimosaceae	small tree
74	<u>Acacia chundra</u>	Mimosaceae	Tree
75	<u>Albizia lebeck</u>	Mimosaceae	Tree
76	<u>Mimosops pulica</u>	Mimosaceae	shrub
77	<u>Kalachoe spathulata</u>	Cassulaceae	Herb
78	<u>Anogishus latifolia</u>	Combretaceae	Tree
79	<u>Combretum ovalifolium</u>	Combretaceae	shrub
80	<u>Terminalia alata</u>	Combretaceae	Tree
81	<u>Syzgium cumini</u>	Myrtaceae	Tree
82	<u>Ammania baccifera</u>	Lythraceae	Herb
83	<u>Ammania pentandra</u>	Lythraceae	Herb

Colors

Flowers

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84.	<u>Ammania salicifera</u>	Lythraceae	Herb
85.	<u>Woodfordia fruticosa</u>	Lythraceae	Shrub
86.	<u>Woodfordia serpyllifolia</u>	Lythraceae	Shrub
87.	<u>Citrullus colocanthis</u>	Cucurbitaceae	Herb
88.	<u>Diplocyclis palmatus</u>	Cucurbitaceae	Climber
89.	<u>Mimordica dioica</u>	Cucurbitaceae	Climber
90.	<u>Mukia madraspatana</u>	Cucurbitaceae	Climber
91.	<u>Trichosanthes tricuspidata</u>	Cucurbitaceae	Climber
92.	<u>Opuntia elatior</u>	Cactaceae	Shrub
93.	<u>Mollugo pentaphylla</u>	Molluginaceae	Herb
94.	<u>Pimpinella lateriflora</u>	Apiaceae	Herb
95.	<u>Anolis monthonia</u>	Rubiaceae	Herb

COLORS

Flowers

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96.	<i>Borreria pumila</i>	Rubiaceae	Heeb
97.	<i>Canthium paviflorum</i>	Rubiaceae	shrub
98.	<i>Ixora arborea</i>	Rubiaceae	Small tree
99.	<i>Catunargum spinosa</i>	Rubiaceae	
100.	<i>Oldenlandia grassilis</i>	Rubiaceae	Heeb
101.	<i>Wendlandia thyrsoides</i>	Rubiaceae	Tree
102.	<i>Acanthospermum hispidum</i>	Astraceae	Heeb
102.	<i>Ageratum conyzoides</i>	Astraceae	Heeb
104.	<i>Bidens biternata</i>	Astraceae	Heeb
105.	<i>Blainvillea acmella</i>	Astraceae	Heeb
106.	<i>Blumea obliqua</i>	Astraceae	Heeb
107.	<i>Caesulia axillaris</i>	Astraceae	Heeb.
108.	<i>Centratheum anthihilim- nicum.</i>	Astraceae	Heeb.

colors

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109	<u>Chromolaena odorata</u>	Asteraceae	Herb
110	<u>Conyza stricta</u>	Asteraceae	Herb
111	<u>Cosmos bipinnatus</u>	Asteraceae	Herb
112	<u>Cythocline lysata</u>	Asteraceae	Herb
113	<u>Echinops echinatus</u>	Asteraceae	Herb
114	<u>Eclipta ezecta</u>	Asteraceae	Herb
115	<u>Glossocordia bosvalia</u>	Asteraceae	Herb
116	<u>Emilia sonchifolia</u>	Asteraceae	Herb
117	<u>Lagacea mollis</u>	Asteraceae	Herb
118	<u>Notonia grandiflora</u>	Asteraceae	Shrub
119	<u>Parthenium hysterophorus</u>	Asteraceae	Herb
120	<u>Pulicaria wightiana</u>	Asteraceae	Herb

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SHEEL SHARIR ADHYAYAN

Aundh Shikshan Mandal's, Aundh

Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh


Department of Botany

CERTIFICATE

Exam. no. 32752G

Date:- 22/01/2016

This is to certify that she/~~he~~ **Pranadik Ekata Vitthal**  
Class B.Sc.II, has satisfactory completed the Study tour arranged at  
**Kolhapur, Panhala and Malkapur** Prescribed by Shivaji University,  
Kolhapur for BSc.II Botany practical examination. Which was  
submitted to the Department of Botany during academic year 2015-  
2016.

  
Teacher in charge

  
Examiner

  
25/1/2016  
Head

Study of  
Tour & Report  
Botany

2015 - 16



Study of  
Tour & Report  
Botany

2015 - 16



Name - Mahodik

Ekata Vitthal...

Class - S.T. B.Sc.

College Name - R.

S. B. M. Aundh.



## LEAD BOTANICAL GARDEN

History of Lead Botanical garden of  
Shivaji University, Kolhapur

Lead Botanical garden is a wonderful concept conceived by our country & is nurtured by ministry of Environment & forest.

Plant wealth of Lead Botanical Garden

Angiosperms	-	1048
Gymnosperms	-	22
Pteridophytes	-	63
Total	-	1133

Shivaji University, Kolhapur is situated on the slopes of Western Ghats. The university holds a vast area of land. The landscape itself is undulating & provides excellent opportunities for to grow & conserve various kinds of species of Western Ghats. The Department of Botany was established in 1964.

### Major Sections in IBG

Fernery - It is established in 2005 fernery holds a vast plant collection of 61 spp.







Pinetum - In this pinetum 22 spp of Gymnosperms

Conservatory of Rhizomatous, Cormatus, Tuberosus & Bulbous plant :-

In this section 40 spp of Western Ghats are conserve.

Aquatic plant :- Remarkable plant Victoria, Amazonica, Nelumbo, Nucifera.

Medicinal Plants :- There 25 spp of medicinal plant have been maintained in this section.

Palmatum :- The palmatum holds more than 70 spp of indigenous as well as cultivated palms orchidarium there are about 60 spp of Indigenous maintained in orchidarium.

Arboretum Medicinal plant - It suppose 100 medicinal plant trees species of Western Ghats & Andaman Nicobar have been introduced in the arboretum LBG.

Species Graves - Mango graves, Garvins have been medicinal in the LBG. Insectivorous plant. This section introduced insectivorous plant.





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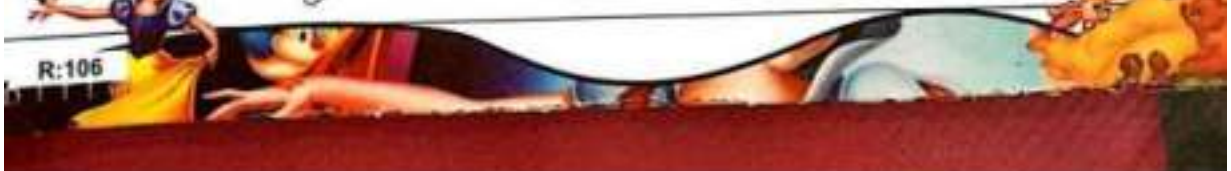
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## RESTORATION PROGRAMMES

Ghats harbor species of some of threatened due to human activities viz. Modification & destruction of habitats. Any species once lost is lost forever. Therefore, conservation is the only way to protect them. All these endemic, rare plants are very specific in their habitat requirements & have some problems in their propagation & dispersal. Thus, they are dwindling in ecosystem. Their survival is only possible if humans take their special care. Taking into account the need of time for conservation of threatened species of Western Ghats, Department conducted several programs using expertise in the department & student strength. Department has successfully completed restoration programs for 20 species.

### Ceropegia (Apocynaceae) :-

In Maharashtra 25 species are recorded out of which 17 species are endemic & threatened. Tubers of Ceropegia are starchy & edible, which are nutritive & highly medicinally important. Some of the butterflies feed & complete their life cycle on Ceropegia species. Some of them are host specific. Ceropegia are very specific in their habitat preferences. Conservation of Ceropegia species is a challenge to the biologist.



R:106





### *Erinacarpus nimmanii* (Malvaceae) -

*Erinacarpus* is monotypic endemic tree genus with fragmented populations in Western Ghats. The individuals are sparsely distributed in semi-evergreen to dry deciduous forests of Maharashtra & Karnataka. The wood is used for raft making by tribal people. The efforts were made to conserve *Erinacarpus nimmanii* (ex-situ as well as in situ condition). In collaboration with the Forest Department, Kolhapur, 1885 seedlings were introduced in natural habitat.

### *Hubbardia heptaneuron* (Poaceae) -

*Hubbardia* is critically endangered & endemic genus which was on the verge of extinction. It grows on rocky habitat. *Hubbardia heptaneuron* originally known from Jog falls, a famous waterfall in Karnataka state have been restored. Under this restoration program more than 10,000 individuals of 16 acres & more than 100 locations are reintroduced. Now all these populations are self-perpetuating. It is success story of restoration of a grass of Western Ghats.

### Mangroves -

Department has made significant contribution in restoration of mangrove ecosystem. Under the program in addition to common mangroves, two rare mangroves





viz. *Cynometra* *leipa* & *Mentiera littoralis* have been restored.

### • Bioprospecting Plants of Western Ghats -

Bioprospecting is the process of discovery commercialization of new product in bioresources. Western Ghats is rich biological material & one of the source.

### Plant Discoveries of Botany Department Shivaji University, Kolhapur

Discovery of a new species is a great pleasure of every taxonomist. Botany department of Shivaji University, Kolhapur has made significant contribution by discovery of a new spp of flowering plant.

There are just 12 species in the family Hydatellaceae belonging to genus *Trithuria*. 11 species of *Trithuria* are restricted to Australian continent & forms a group of basal angiosperms. In *Trithuria* species have several unique features & an enigma for Botanists.



Shivaji University, Kolhapur  
LEAD BOTANICAL GARDEN  
GRACE OF GARDEN  
PALMS

Palm is a gr. of elegant species of monocots. The Dept of Botany has made attempts for last 3 decades to introduce exotic as well as indigenous palm to Lead botanical garden attempts were made to introduce more than 100 spp. However, some of them did not survive. Presently there are more than 70 species belong to 43 genera & this palm germplasm is available everywhere.



Page No: \_\_\_\_\_  
Date: 11/11/2016

## Tour Study

We the student of B.Sc - II, we are visited the lead Botanical Garden of Shivaji University in 1-3-2016.

There are about 55 students visited to this garden.

The major 2 section are in lead Botanical garden. Information about LBG as follows

After visiting LBG we visited the Historical place 'PANHALLA'.

After visiting the Historical place we are visited 'Shailesh Nursery'. Area of Nursery is about 35 Ft. various types of plants are seen which has medicinal, Ornamental & Aesthetic value. The plants are listed as follows.



R:106



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① Botanical Name :- *Dyrcis lulescent*  
 Family :- *Arecaceae*  
 :- *Areca palm*  
 Native place :- *Madagascar*

② Botanical Name :- *Cycus rumpii*  
 Family :- *Cycadaceae*  
 :- *Queen Sage*  
 Native place :- *New Guinea*

③ Botanical Name :- *Hyphaene dihatema*  
 (white) *furtodi*  
 Family :- *Arecaceae*

④ Botanical Name :- *Callistemon lanceolatus*  
 Family :- *Myrtaceae*  
 :- *Bottle Brush*

⑤ Botanical Name :- *Phoenix roebelanii*  
 Family :- *Arecaceae*  
 Native place :- *Southeastern Asia*

⑥ Botanical Name :- *Phoenix robusta Hook.*  
 Family :- *Arecaceae*

(8) Botanical Name :- *Phoenix Syriensis*  
Family :- *Arecaceae*  
Native place :- *Candian Islands*

(9) Botanical Name :- *Phoenix robusta*  
Family :- *Arecaceae*  
Native place :- *India*

(10) Botanical Name :- *Spathis alba*  
Family :- *Arecaceae*

(11) Botanical Name :- *Cycus rumphii revoluta*  
Family :- *Cycadaceae*  
Native place :- *Japanese sago palm*  
*Southern Japan*

(12) Botanical Name :- *Draecena Fragrans*  
Family :- *Aparagaceae*  
Native place :- *Tropical Africa*

(13) Botanical Name :- *Actocarpus atilis*  
Family :- *Moraceae*

(14) Botanical Name :- *Ensete glaberrimum*  
Family :- *Plantaginaceae*  
Native place :- *Snow Banana*  
*China*





(12) Botanical Name :- *Klallchta di delia*  
Family :- *Araucace*

(13) Botanical Name :- *Xylacarpus granatum*  
Family :- *Mileidaceae*

(14) Botanical Name :- *Avicennia officinalis*  
Family :- *Avicenniaceae*

(15) Botanical Name :- *Avicennia marina*  
Family :- *Avicenniaceae*

(16) Botanical Name :- *Bruquiera gymnorhiza*  
Family :- *Rhizophoraceae*

(17) Botanical Name :- *Euphorbia ngolota*  
Family :- *Euphorbiaceae*

(18) Botanical Name :- *Cerbera odollum*  
Family :- *Apocynaceae*

(19) Botanical Name :- *Tournefortia poly morph*  
Family :- *Bignoniaceae*

(20) Botanical Name :- *Washingtonia filifera*  
Family :- *Arecaceae*

Native place :- *California palm*  
:- *North America*



(23) Botanical Name :- Cabal palmetto  
Family :- Araceae  
Cabbage palm  
Native place :- Florida

(24) Botanical Name :- Lledytia bixarata  
Family :- Araceae  
Footall palm  
Native place :- Australia

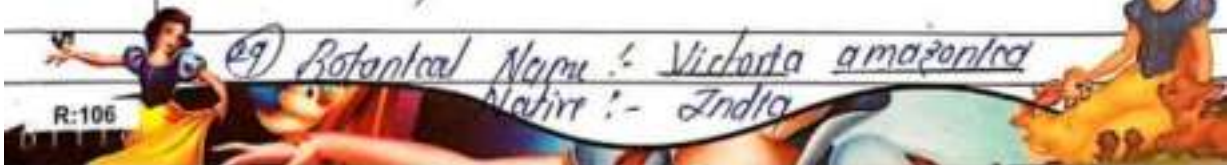
(25) Botanical Name :- Bismarkia nobilis  
Family :- Araceae  
Bismarck palm  
Native place :- Malay

(26) Botanical Name :- Pinus rosburghii  
Family :- Pinaceae  
Chir Pine  
Native place :- Himalaya

(27) Botanical Name :- Hypolepis dichotoma  
Family :- Arceae

(28) Botanical Name :- Morus alba  
Family :- Moraceae  
Native place :- China

(29) Botanical Name :- Victoria amazonica  
Native :- India





(30) Botanical Name :- Madhura longifolia  
Family :- Sapotaceae (FIC)

(31) Botanical Name :- Swietenia macrophyllum  
Family :- Meliaceae (मैलासी)

(32) Botanical Name :- Nolthopegia castanegera  
Family :- Anacardiaceae

(33) Botanical Name :- Carallia brachiata  
Family :- Rhizophoraceae

(34) Botanical Name :- Saraca asoka  
Family :- Fabaceae

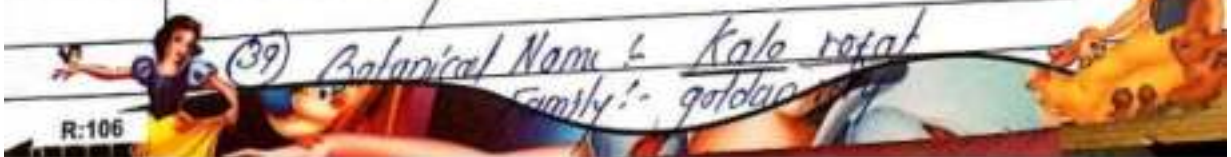
(35) Botanical Name :- Calophyllum inophyllum  
Family :- Clusiaceae

(36) Botanical Name :- Canarium verum  
Family :- Lauraceae

(37) Botanical Name :- Hyphora nicholoma  
Family :- Anacardiaceae

(38) Botanical Name :- Hypocistis  
Family :- 6 part 35

(39) Botanical Name :- Kale rotal  
Family :- gothar



(40) Name of plant :- A prolandra  
:- 5 part 3001

(41) Name of plant :- Tilerdesheel  
:- 3 pod

(42) Name of plant :- Auxadista  
:-

(43) Name of plant :- Saykar dark

(44) Name of plant :- Rabbit foot gum

(45) Name of plant :- Sepromiya pink

(46) Name of plant :- Fitoniya

(47) Name of plant :- Mediyana

(48) Name of plant :- Aadiantum fern

(49) Name of plant :- Fern Aadiantum

(50) Name of plant :- Silver very gum

SHEEL SHARINI ADHYAYAN

Aundh Shikshan Mandal's, Aundh

Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh

Department of Botany

CERTIFICATE

Exam. no. 30224

Date:- 23/3/2017

This is to certify that she / He Katkar Shivani Sugandhrao.  
Class B.Sc.II, has satisfactory completed the Study tour arranged at  
Kolhapur, Panhala and Malkapur Prescribed by Shivaji University,  
Kolhapur for BSc.II Botany practical examination. Which was  
submitted to the Department of Botany during academic year ~~2016~~  
2016 - 17

*Satish*  
Teacher in charge

*Smaran*  
*13/3/17*  
Examiner

*23/3/17*  
HEAD  
Department of BOTANY  
R.H.M. Aundh



Page No.

Date :

TO VISIT

NURSARY

&

LEAD BOTANICAL

GARDEN

colors



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Page No.

Date :

# TOUR REPORT OF BOTANY

Name :- *Katkar Shivani Sugandhrao.*

Std :- *5Y.BSc.*

colors



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We are the students of BSc II. Our College arranged study tour to lead botanical garden and Nursery. On 1/1/2017. About 55 students joined it.

We visited lead botanical garden of Shivaji University. In that garden we see uncountable plants and trees. These plants and trees are distributed in major 8 sections. Prof. Avimash Ghodave gives information about each and every plants and trees. They told us new researches and related to that plant and new varieties of that plant.

After visiting L.B.G we visited Panhala. It is historical place. We seen various types of trees & plants.

After that we visited Shailesh Nursery. The area of that Nursery is about 35

Plants in that nursery distributed in poly house, green house, sections. Water management in that nursery is very well.



## LEAD BOTANICAL GARDEN

### Major Sections in LBG

1) Fernery - It is established in 2005. In this fernery holds germ plasma Collection of 61 spp.

2) Pinetum - In this section 22 spp. of gymnosperm are included.

3) Conservatory of Rhizomatous, Cormatus, Tuberos and bulbus plants.

In this section 40 spp. of Western Ghat are Conserv.

4)

4) Medicinal plant -

Chief 25 spp. of medicinal plant have been maintained in this section

5) Palmatum -

The palmatum holds more than 70 spp of indengrous as well as coiled palms.

Orchidarium their are about 60 spp. of nondangerous mentioned in orchidomum.

6) Aquatic plant - Remarkable plant, victoria,  
Amazonica.

7) Arboretum medicinal plant -

About 100 medicinal plant trees species  
of Western Ghat and Andaman Nicobar have  
been introduced in the arboretum L.B.G.

8) Special grooves -

Mango grooves, Gorvins have been  
mentioned in the L.B.G. insectivorous plant.

## PLANT DISCOVERIES OF BOTANY DEPARTMENT SHIVAJI UNIVERSITY KOLHAPUR

Discovery of a new species is great  
pleasure of every taxonomist. Botany Dept. of  
Shivaji University Kolhapur has made significant  
contribution by discovery of 60 spp. of flowering plant.

There are just 12 species in the family  
Hydatellaceae belonging to genus trithuria 11 spp.  
of trithuria are restricted to Australian  
Continent.

and forms a group of basal angiosperm  
 Triturria spp. have several unique features  
 and an enigma for botanist.

## SHIVAJI UNIVERSITY KOLHAPUR

### • Lead Botanical Garden, Grace of Garden Palms.

Palms is a group of elegant spp. of monocots. The Dept of Botany has made attempts for last 3 decades to introduce exotic as well as indigenous palms to lead botanical garden attempts were made to introduce more than 100 spp. However some of them did not survive. Presently there are more than 70 species belong to 43 genera and this palm germplasm is available everyone.

### • Restoration Programme

Cerpegias

Abutilon ramadei

Erina - Carpus numonli

Hubbardia heptaneuron

Mangrooves

## Bioprospecting Plant of Western Ghat

Mucina Sanjappae (Fabiaceae)

Borlerias (Acanthaceae)

Delphinium Malabaricum (Ranunculaceae)

Senecios (Asteraceae)

1) Botanical Name - Dupsis lutescens

Family - Areaceae

Native Place - Madagascar

2) Botanical Name - Cycus rumphii

Family - Queensago

Native place - Newguinea

3) Botanical Name - Hyphaene dichotoma

Family - Areaceae

4) Botanical Name - Calisteman lanceolates

Family - Murtaceae

5) Botanical Name - Araucaria Columnaria  
Family - Araucariaceae  
Native place - South western Pacific

6) Botanical Name - Phoenix roebelani  
Family - Araceae  
Native place - South western Asia

7) Botanical Name - Phoenix robusta Hookf  
Family - Araceae

8) Botanical Name - Phoenix Sylvesteris  
Family - Araceae  
Native place - Canary Islands

9) Botanical Name - Phoenix robusta  
Family - Araceae  
Native place - India

10) Botanical Name - Agathis alba  
Family - Araceae

11) Botanical Name - Cycus revoluta  
Family - Cycadaceae  
Native place - Southern Japan

20) Botanical Name - Bruguiera gymnorhiza  
Family - Rhizophoraceae

21) Botanical Name - Excoecaria agallocta  
Family - Euphorbiaceae

22) Botanical Name - Cerbera odollum  
Family - Apocynaceae

23) Botanical Name - Tearin poly maphe  
Family - Bryophytaceae

24) Botanical Name - Washingtonia filifera  
Family - Arecaceae  
Native place - North America

25) Botanical Name - Sabal palmetto  
Family - Arecaceae  
Native place - Florida

26) Botanical Name - Wadyetia biforcata  
Family - Arecaceae  
Native place - Australia

27) Botanical Name - Bismarkia nobilis  
Family - Arecaceae

29) Botanical Name- Hyplacae dichotoma  
Family - Aroaceae

30) Botanical Name- Victoria indica  
Family - Dipterocarpaceae

31) Botanical Name- Victoria amazonica  
Native place- India

32) Botanical Name- Morus alba  
Family - Moraceae  
Native place- China

33) Botanical Name- Melhuca longifolia  
Native place - Sapotaceae

## SHATLESH NURSARY

Name of plant

1) Hyporthe

2) Kala rotat

3) Apralandra

4) *Azoreodista*

5) *Fycus dark*

6) *Rabbit foot fern*

7) *Sapromiya pink*

8) *Fitonia*

9) *Mediyana*

10) *Adiantum fern*

11) *Fern Adiantum*

12) *Cliver very fern*

13) *Thumbergia grandiflora*

9/10/2019  
Srikumar



# BOTANY TOUR REPORT

RAJA SHRIPATRAO BHAGAWANTRAO MAHAVIDYALAYA, AUNDH

DEPARTMENT OF BOTANY

## CERTIFICATE

Exam.No. 32820

Date: 27/3/18

This is to certify that Jankar Shroaddha Vasant  
as satisfactory completed tour as required in Botany course prescribed by  
Jivaji University, Kolhapur for B.Sc.II Botany practical examination under my  
supervision in the year 2017-2018.

  
Examiner  
27/3/18

*Examined*  
  
Examiner

  
27/3/18  
Head  
Department of Botany  
Department of BOTANY  
R. B. M. Aundh.



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TOUR

REPORT



## Introduction

The botanical tour of Botany Department of Raja Shripatrao Chaganwale Mahavidyalaya Aundh Dis. Solara was arranged at botanical interesting places - Malakapur and Markeshwar 31<sup>st</sup> January, 2018. In this botanical trip tour three teachers from Botany department and 37 students were participated.

### The aims & objectives of Botanical tour :-

- 1] To visit the places of botanical interest
- 2] To study the natural vegetation and different ecosystem.
- 3] To study habits & habitats of terrestrial and aquatic plants
- 4] To study wild & rare plants
- 5] To study the plants in botanical garden.
- 6] To increase an interest among the student about plant sciences.

We have visited to Markeshwar, Shailesh Narasey at Malakapur, and the environs along with other places of interest en route.

Teacher's Sign: \_\_\_\_\_

Mareshwar is a holy cave temple in the midst of the Sahyadri hills [Western Ghats]. It is about 19 km from the town of Derrukh in Palnagiri district. It is deep in the forest between two hillsides, at the top of one of the hills, with a river flowing in the valley below.

We had to stop down to enter the narrow opening of the cave temple. It was cool and dark and smoky inside. After taking the Lord's blessing, we stepped outside again. Even though it was January there was still a flow of water from the waterfall nearby. Indeed it must be a beautiful sight to witness this waterfall in full flow during the monsoon months.

We had to also visited shailesh nursery at Malakapur and observed several foliage plants, Big Tall Avenue plants, Bamboo plants, Grasses, Ground cover plants, Bulbous plants, Creepers, Heliconias plants, Palms, Rockery, Conifer, Cacti, Succulents etc.

Teacher's Sign: \_\_\_\_\_

The plants which were observed at Shailesh Nursery is listed below :-

	Name of Plant	Family.
1)	<u>Acalypha indica</u>	Euphorbia.
2)	<u>Alpinia zabra</u>	Zingiberaceae
3)	<u>Alpinia zact</u>	Zingiberaceae
4)	<u>Alpinia variegated torumbil</u>	Zingiberaceae
5)	<u>Azalia balfurmiana</u>	Asaliaceae
6)	<u>Lily jafanthus</u>	Liliaceae.
7)	<u>Mangifera indica</u>	Anacardiaceae.
8)	<u>Allium sativum</u>	Amaryllidaceae
9)	<u>Hygrophilla auricadato</u>	Acanthaceae
10)	<u>Justicia procumbens</u>	Acanthaceae
11)	<u>Acorus calamus</u>	Acoraceae.
12)	<u>Anacardium occidentale</u>	Anacardiaceae

Teacher's Sign: \_\_\_\_\_

13]	<u>Daucus carota</u>	Apiaceae
14]	<u>Coslondzum sativum</u>	Apiaceae
15]	<u>cotharonthus pusillus</u>	Apocy noceae
16]	<u>Rauwolfia serpentina</u>	Apocynaceae
17]	<u>Achyranthes aspera</u>	Amaranthaceae
18]	<u>Cocos nucifera</u>	Arecaceae
19]	<u>colotropis procea</u>	Asclepiadoceae
20]	<u>Urginea indica</u>	Asparagaceae
21]	<u>Eclipta prostrata</u>	Asteraceae
22]	<u>Anacyclus pubethum</u>	Asteraceae
23]	<u>Achillea millefolium</u>	Asteraceae
24]	<u>Azolla pinnata</u>	Azolloceae
25]	<u>Adonsonia digitata</u>	Bambacocae
26]	<u>Boswellia serrata</u>	Gussedaceae
27]	<u>cosica papaya</u>	caricaceae

Teacher's Sign.:

<u>Cassinia combogia</u>	clusiaceae
<u>Mesua ferrea</u>	clusiaceae
<u>Cyperus squarrosus</u>	Cyperaceae
<u>Cyperus rotundus</u>	Cyperaceae
<u>Aloe vera</u>	xanthorrhoeaceae
<u>Acacia concinna</u>	fabaceae
<u>Acacia catechu</u>	fabaceae
<u>Ocimum tenuiflorum</u>	hamiaceae
<u>Phyllanthus emblica</u>	phyllanthaceae
<u>Aegle marmelos</u>	Rutaceae
<u>Datura metel</u>	solanaceae
<u>Curcuma longa</u>	Zingiberaceae
<u>Zingiber zuberens</u>	Zingiberaceae

Aravind  
20-3-18

RAJA SHIRIPATRAO BHAGAWANTRAO MAHAVIDYALAYA,  
AUNDH

DEPARTMENT OF BOTANY

**CERTIFICATE**

Exam. No. 4228

Date: 30/03/2019

This is to certify that **Mane Amrta Gorkhnath**  
has satisfactory completed tour as required in Botany course  
prescribed by Shivaji University, Kolhapur for B.Sc.II Botany  
practical examination under my supervision in the year 2018-  
2019.



Teacher In charge

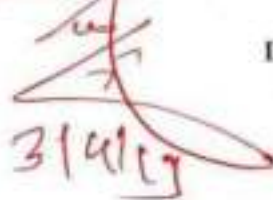


Examiner



Head

Department of Botany



31/4/19





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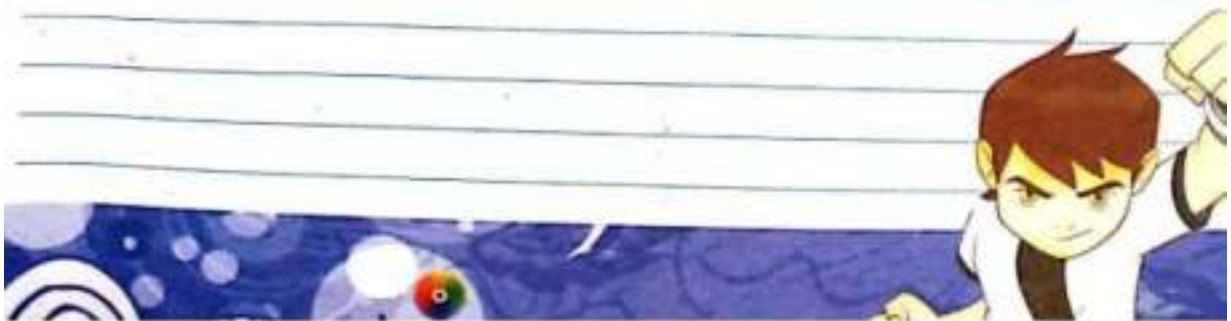
Date

# Visit to lead

# Botanical Garden.

The tour of department of Botany BSC- Part II Class were arranged on 12-01-2019 at botanical intercollegiate places. The lead botanical garden Shivaji University Kolhapur (SUK) Under the visit to lead 60 student of BSC Part II Class and 2 teachers were participated. The aim and objective of this visit to observe ex-situ conservation of plants for protection of wild, rare and endangered plant species.

Among all the ex-situ conservation botanical garden seems to be most ideal for conservation of rare, endangered and threatened (RET) and economically importance plants.





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In Maharashtra state lead botanical garden situated at Shivaji University Kolhapur, it is only lead botanical garden and was established in 2007.

In this garden more than 1100 species of higher plants are introduced and well conserved.

The lead botanical garden have some major sections such as:

① **Fernary** - It contain large number of ferns [Pteridophytes, Hold germplasm]

collection of 60 species in fernary, some species are endemic for eg. Anglopetric, Tectaria.

② **Pinetum** - Pinetum means plantation of pine trees & other conifers. Pinetum has 22 species of different gymnosperm, zamea like cycus, gingo. this. It also have petrified fossil of Mesembryoxyl mahabalei. attraction of all visitors.

③ Conservatory of Rhizomatous, Cormatous, Tuberos and Bulbous plant more than 40 species of western ghats are conserved in garden.





Some important species are Amarphobolus, Arisaema, chlorophytum, critum, Dipcadi etc

④ Palmatum:- In this section 70 species of Plum from Asia are planted which included indigenous as well as cultivated plum some important are Avanga, Benticki and Corypha

⑤ Orchidium - Some area of botanical garden is dedicated to orchids such as Eulopia, Habroaria, Liparis etc

⑥ Mangrooves - The garden has significant contribution in restoration of mangrooves. Garden have nursery of mangrooves. The 35 mangrooves are conserved in garden. Some important are Cynometra, iripa, Rhizophora, Abicinea

⑦ Medicinal Plant - 75 medicinal plant species are maintained in garden includes Antiaris, Aloe, Plumbago, Decalpis etc.





Some important species are Amarphaphalaus, Arisaema, chlorophytum, caitum, Dipcadi etc

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⑦ Medicinal Plant - 75 medicinal plant species are maintained in garden includes Antiaris, Aloe, Plumbago, Decalpis etc.





Some other sections of garden are

**Aquatic Plants -** The aquatic plant such as Victoria, Amazonia, Nymphaea and Nymphaea.

**Insectivorous Plants -**

Nursery of RET species and climbers  
Nilambati, Auditorium etc

The least of plants observed and studied during the visit are listed below.





Sr No.	Botanical Name	Family	Location.
①	Callistemon citrinus	Myrtaceae	Kolhapur
②	Dyopsis lutescens	Artocaceae	Kolhapur
③	Brownea coccinea	Fabaceae	Kolhapur
④	Phoenix Sylvestris Toxb	Arecaceae	Kolhapur
⑤	Cycas revoluta	Cycadaceae	Kolhapur
⑥	Agathis alba	Artocarniaceae	Kolhapur
⑦	Cycas revoluta	Cycadaceae	Kolhapur
⑧	Cycas rumphii	Cycadaceae	Kolhapur
⑨	Polyalthia longifera	Annonaceae	Kolhapur
⑩	Bulbils		
⑪	Cycas crinalis	Cycadaceae	Kolhapur
⑫	Dioon spinulosum	Zamiaceae	Kolhapur
⑬	Araucarpus gracilis	Podocarpaceae	Kolhapur
⑭	Carica Umbroculitera	Arecaceae	Kolhapur
⑮	Dracaena fragrans	Asparagaceae	Kolhapur
⑯	Santalum album	Santalaceae	Kolhapur
⑰	Crotalaria Spectabilis	Fabaceae	Kolhapur
⑱	Adhatoda Zeylanica	Acanthaceae	Kolhapur
⑲	Ocimum Sanctum	Lamiaceae	Kolhapur





20)	Butea monosperma	Faboaceae	Kolhapur
21)	Asparagus racemosus	Asparagaceae	Kolhapur
22)	Azadirachta indica	Meliaceae	Kolhapur
23)	Curcuma caesia	Zingiberaceae	Kolhapur
24)	Plumbago zylagina	Plumbaginaceae	Kolhapur
25)	Antiaris toxicaria lesch	Moraceae	Kolhapur
26)	Solanum virginianum	Solanaceae	Kolhapur
27)	victoria amazonica	Nymphaeaceae	Kolhapur
28)	Adansonia digitata	Malvaceae	Kolhapur
29)	Syzygium cumini	Myrtaceae	Kolhapur
30)	Macaranga peltata	Euphorbiaceae	Kolhapur
31)	Elaeocarpus grandiflorus	Elaeocarpaceae	Kolhapur
32)	Aristolochia elegans	Aristolochiaceae	Kolhapur
33)	Muntingia calabura	Muntingiaceae	Kolhapur
34)	Pinus Roxburghii	Pinaceae	Kolhapur
35)	Lobelia	Campanulaceae	Kolhapur
36)	Madhura longitolia	Sapotaceae	Kolhapur
37)	Barleria	Acanthaceae	Kolhapur
38)	Swietenia macrophylla	Meliaceae	Kolhapur
39)	Hyphaene dichotoma	Arecaceae	
40)	Nymphae fruticans	Arecaceae	
41)	Elaeis guineensis	Arecaceae	



Page No. \_\_\_\_\_

Date : \_\_\_\_\_

VISIT  
REPORT

colors



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## Visit to Shailesh Nurssary.

The tour of BSc-II class botany of our college arranged at botanically interested places: Shailesh nurssary malkapur on 12/10/2019. The visit to nurssary as per Syllabus.

In this tour 60 student of BSc-II botany and two teachers of development were participated.

The aim and objective of this visit is the student should know the ornamental plants its conservation and cultivation. The malkapur is situated in Kolhapur - Raunagiri highway. 50 km away from Kolhapur. The place is part of Western Ghats. Hence,

the place is favourable for plant growth and development.

Shailesh nurssary is well known nurssary in western Maharashtra.

It occupy approximately 23 hector area.





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The nursery contains traditional flowering trees, shrubs, herbs and also climbers

The nursery has its own collection of Exotic, interesting, Economically valuable Plants

The nursery cultivated of seedlings of Agri culturally economic crops such as mango Sapota, Coconut & Eugenia etc





The nursery has different sections such as,

1) Section of Indoor plants -

The plants are cultivated in polyhouses and net houses including flowering herbs, foliage herbs, and A. herbs.

2) Flowering trees

3) Gymnosperm

4) Flowering shrubs

5) Foliage trees

6) Cacti and Succulents

7) Aquatic plants - cultivated in tanks

8) The section of equipment necessary for use in gardening, such as pots, lawn cutters, knives etc.





Page No.:

Date:

Sr no	Botanical Name	Family	Location
①	Bixa orellana	Bixaceae	Malkapur
②	Plumbago auriculata	Plumbaginaceae	Malkapur
③	Bauhinia variegata	Fabaceae	Malkapur
④	Tiromo plant	Bignoniaceae	Malkapur
⑤	Vanda orchid	Orchidaceae	Malkapur
⑥	Impatiens impatiens Plant	Balsominaceae	Malkapur
⑦	Begonia	Begoniaceae	Malkapur
⑧	Pedilanthum	Euphorbiaceae	Malkapur
⑨	Bromelia	Bromeliaceae	Malkapur
⑩	Philodendron	Araceae	Malkapur





Page No.:

Date:

Sr No	Botanical Name	Family	location
(11)	<u>White Santalum</u>	Santalaceae	Malkapur
(12)	<u>Adenium plant</u>	Apocynaceae	Malkapur
(13)	<u>Dwarf Casuarina</u>	Casuarinaceae	Malkapur
(14)	<u>Dwarf yucca</u>	Asparagaceae	Malkapur
(15)	<u>Anthurium plant</u>	Araceae	Malkapur
(16)	<u>Staghorn</u>	Polypodiaceae	Malkapur
(17)	<u>Adiantum</u>	Pteridaceae	Malkapur
(18)	<u>Chlorophyllum</u>	Agaricaceae	Malkapur
(19)	<u>Dracena</u>	Asparagaceae	Malkapur
(20)	<u>Diplazium</u>	Araceae	Malkapur
(21)	<u>Taxod</u>	Rubiaceae	Malkapur



Sr. No	Botanical Name	Family	Location
(22)	Cantou petra	Euphorbiaceae	Malkapur
(23)	Heliconia	Heliconiaceae	Malkapur
(24)	Feature plant		Malkapur

TOPIC \_\_\_\_\_

DATE \_\_\_\_\_

PAGE \_\_\_\_\_

# Tour Report..

Name - Charge Prinyanka  
Mahadev

Collage Name :- Raja Shripateo  
Bhagovanteo Mahavidyalay  
Aundh..

PRN. No - 2018055079

Subject - Botany..

Standard - B.sc.II

vista

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DEPARTMENT OF BOTANY

**CERTIFICATE**

Exam. No. - 2018055089

Date: 11.02.2020

This is to certify that Gharge Priyanka Mahadev has satisfactory completed tour as required in Botany course prescribed by Shivaji University, Kolhapur for B.Sc. II Botany practical examination under my supervision in the year 2019-2020.

  
Teacher in charge

Examiner

  
Head  
Department of Botany



The botanical tour of Botany department at Raja Shripatrao Bhagvartrao Mahavidyalaya, Aundh, Dist. Satara was arranged of botanically interesting place Malakapur and Marleshwar 16<sup>th</sup> January 2020. In this a botanical tour, six teachers from Botany department and 56 students were participated.

The aims and objectives of botanical tour:-

- ① To visit the places of botanical interest.
- ② To study wild and rare plants.
- ③ To study the natural vegetable and different ecosystem.
- ④ To study habits and habitats of terrestrial and aquatic plants.
- ⑤ To study the plants in botanical garden.
- ⑥ To increase the interest among the students about the science/plant sciences.

We have visited to Marleshwar Shailesh, Nursery at Malakapur and the.

Name of Plants	Family
Ficus blakins	Moraceae
Ficus golden	Moraceae
Ficus kingbrush	Moraceae
Ficus lorata	Moraceae
Ficus Nuda	Moraceae
Anthurium	Araceae
Bigonia	Bignoniaceae
Caladium singal	Araceae
Calthia new	Ranunculaceae
Albelia green	Caprifoliaceae
Asparagus spingarsr	Asparagaceae

Name of Plant	Family
Abelia green	Caprifoliaceae
Gypsophila paniculata	Caryophyllaceae
Zamioculcus zamiifolia	Araceae
Phoenix dactylifera	Araceae
Areca latensis	Arecaceae
Bismarkia palm	Arecaceae
Bougainvillea glabra	Nyctaginaceae
Asparagus americana	Asparagaceae
Anthurium	Araceae
Calathea zehringii	Marantaceae

We learnt a lot about plant life on their insitu and ex-situ habitats under the guidance of respected teachers.



Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh

Department of Botany

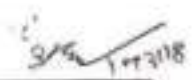
CERTIFICATE


Exam no. 2572

Date:- 10/3/2018

This is to certify that she / He Makar Gauri Mohan

has satisfactorily completed the submission as per required in Botany course prescribed by Shivaji University, Kolhapur for BSc.I Botany practical examination under my supervision in the year 2017-2018.

  
Teacher in charge

  
HEAD OF BOTANY  
R. B. M. Aundh

  
Examiner



Raja Sheipatzo

Bhagwantzo Mahavidyalaya,  
Aundh.

Name :- Makaz Gauzi Mohan

class :- F.Y. Bsc

Touze

Report.

colors

## TOUR REPORT

Department of Botany Raja Shripatrao Bhagwantrao Mahavidyalaya Aundh organized study tour for B.Sc I students on 14<sup>th</sup> Feb 2018 at Mahabaleshwar Dapoli & Kolnagar. In this tour 41 students & two teachers participated. The main aim of tour is to visit the botanically interested place, to create awareness amongs the students about plants to know the natural habit & habitat of plants & conservatory methods. The journey of tour starts at 7.30 am via Koregaon, Wai, Pachgarh, Mahabaleshwar.

In Mahabaleshwar first we visit to Gureghar biodiversity park. Mr. Pise, Mrs. Gurav & his coworkers gives detail information about plants conserved in this area their medicinal uses & propagation methods. Then we observed some bryophytes (on wet walls like Riccia, Anthoceros, Funaria & Polytrichum) & Pteridophyte, like Selaginella. In this orchardium they maintain epiphytic as well as terrestrial orchids found in this forest. Then we visit to Rust research centre that centre is run under Panjabrao Agriculture university. Then main work is done in this centre is to test rust research centre that resistance by artificially inoculation of rust on varieties developed on farmets & breeders in the



different corners of country.

In Dapoli we visit to information centre of Dr. Balasaheb Sawant agricultural university Dapoli. In this centre Mrs. Malkhan gives the information of university & also gives information about models, agricultural tools, practices & domesticated animals, dairy science, horticultural practices. After all we visit to Rubber plantation project which is the Pilot Project in Maharashtra. Mr. Moholkar sir gives the information about collection of latex method of preparation crude rubber & importance. Then we visit to coastal habitat to observe the different algal forms & Fauna. Finally we safely return to Mundh via Koyanagar.

- The annual rainfall of Mahabaleshwar is 4500 to 5500 mm
- Forest type is evergreen & semi evergreen
- Attitude & latitude -  
  - $17.9307^{\circ}N$  ,  $73.6477^{\circ}E$
- Soil type : Laterite, Red
- Temp :- Average  $20/25^{\circ}$
- Humidity :- 80-90%
- Height from msl - 1353 m
- The plants observed in Guneghar, Dapoli are listed below.



Page No. 3

Date:

Bryophytes Riccia, Anthoceros, Funaria &  
Polytrichum

pteridophyte → Selaginella, Gymnosperms -  
Gnetum, species of Pinus etc.

colors



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# Forest Research Centre.

## Gureghar

### Glozy of Mahableshwar. Peide of Maharashtra.

#### Introduction -

Forest Research centre, Gureghar is situated in the western ghat Rajya of Maharashtra, which is just fascinating while going to the world. Famous hill station Mahableshwar one can see the small replica of Green nature's Beauty of Forest & the cover of Maharashtra. this small green replica is mid-blowing & worth to visit atleast one

The distance of Gureghar centre is just 6 kms from Panjgani - Mahableshwar Road. Here we can notice the exotic species along with species found in various part of India.

#### Special Features -

In Gureghar Research centre mainly the "Introduction Trials" has to be carried out. It includes the introduction trials of exotics to India & like gathus robusta (Australia), pinus caribea (Caribbean Iceland) pinus patula (Mexico) along



with the species from conifers of Himalaya like Pinus roxburghii, Cupressus species & the broad leaved species of southern part of India.

e.g. Tea, coffee, Eucalyptus, Dalchini etc. Gureghar hosts on only introduction trials of Agathus robusta taken in the state of Maharashtra. Here at Gureghar Research centre one can witness the collection of various varieties of species of Eucalyptus conifers, bamboos, orchids, In short the special feature can be described as the success in trials of the trees, shrubs, grown naturally in various agro-climatic conditions.

Year of establishment.

Forest Research centre, Gureghar has been established in the year 1957 vide Govt. of Maharashtra Resolution No. MFP-1335-2 dated 13-09-1956. The expansion of the centre was done in the year 1970.

Area -

Research centre, Gureghar is established in the forest area of territorial range on Mahabaleshwar of Satara forest division (Kolhapur forest circle). It comprises of 84.48 H of forest comml. No. Eg the altitude is 1300 meter above MSL.

Legal status -

The legal status of the research centre.



is "Reserved forest" as per Indian Forest Act - 1927  
Classification -

As per the classification made by Champion & Seth Forest types is Sal & soil -

The area of hilly undulating area, major aspect is Northern aspect, soil is red laterals boulder soil In water logged area, the soil is black-cotton soil

Rainfall -

This area receives average rainfall of 2500 - 3000 mm annually.

Weather -

cool weather is the specialty of this area Maximum temperature is 36 degree centigrade & minimum 8 to 10 degree centigrade fog is common in rainy season which remain till August end.

Nursery -

there is small nursery where seedling are raised for experimental plantation & for meeting the demands of local farmers to some extent

Water supply -

there is one well for water supply water is supplied with the help of electric pump.

Roads -

there is 400 meter long motorable road



From the Panchgani - Mahabaleshwar road, Internal Nature trail is of 65 kms long.

### Experimental Plantation -

Experimental plantation were taken up in the year 1960 with the plantation of Camthar (cinnamon camphora) till today in on 123 experimental plantation of 16 different species has been tried.

there are 97 experimental plantation of 48- exotic species, 23 of 20 other species of 3 3 experiments of 8 Bamboo species.

### Eucalyptorium -

total a species of eucalyptus has been tried 35 different experimental plantations.

Sr No.	species	No. of Experiments	Sr No.	species	No. of Experiments
1)	Eucalyptus grandis	16	6	Eucalyptus citriodora	1
2)	Eucalyptus robusta	6	7	Eucalyptus radis	1
3)	Eucalyptus teriticomis	5	8	Eucalyptus saligna	1
4)	Eucalyptus commandulensis	2	9	Eucalyptus resinifera	1
5)	Eucalyptus alba	2		Total	35

colors

pinatum (collection of Pinus species) - there are 7  
Species of Pinus which were tried by 32 experiments

Sr No.	Species	No. of Experiment
1)	Pinus caribbia	11
2)	Pinus cassia	5
3)	Pinus exburgii	4
4)	Pinus patula	4
5)	Pinus insuata	1
6)	Pinus illottii	1
7)	Pinus pseudostrobus	1
	Total	27

Apart from the above experiment there are 5 different experiments of Pinus statistical designs

## ANNEXURE - I

List of Exotics planted for Forest Research centre  
Gureghar

Sr No.	Species	Sr No.	Species
1)	camphor	9)	Eucalyptus grandis
2)	dalchini	10)	Eucalyptus robusta
3)	Mesuafeena	11)	Eucalyptus teriticornis
4)	calamus	12)	Eucalyptus commanciuletis
5)	casuarina	13)	Eucalyptus collafila
6)	Tea	14)	Eucalyptus radis
7)	coffee	15)	Eucalyptus resinifera
	Eucalyptus alba	16)	Eucalyptus saligna

17	cinnamom	32	Pinus cassia
18	Silver oak	33	Pinus Roxburghii
19	Agathus robusta	34	Pinus insulata
20	Aurocarria	35	Pinus Elliottii
21	cunninghamiana	36	Pinus tansodium
	labillardera	37	Churfasia tubularis
22	Podocarpus	38	Thuja
23	Cryptomeria japonica	39	Prasaria indica
24	Eucalyptus calofila	40	Quercus glauca
25	Cupressus goveniana	41	Red oil palm
26	Cupressus cashmiriana	42	Bottle Palm
27	Cupressus macrocarpa	43	Casuarina strictum (Dho)
28	Cupressus bentham	44	Bottle brush
29	Cupressus torulose	45	Pinus khasya
30	Cupressus lasiocarpa	46	Pinus khasya
31	Pinus caribbia	47	Duabunga.

Page: \_\_\_\_\_

Date: \_\_\_\_\_

Topic: \_\_\_\_\_

COLLEGE NAME :-

RAJA SHRIPATRAO BHAGWANTRAO  
MAHAVIDYALAYA, AUNDH.

STUDENT NAME :-

NIKAM POONAM MANOJ.

SUBJECT :-

BOTANY.

STANDARD :-

B.Sc III

PRN No. :- 2017055980

Roll No :- 18

Guidance teacher name :-

prof. Mohalkar. S. M. Sir

prof. Yadhav. U. A. Sir.

COLORS

Flowers

GOLD

PPCG, GUL



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## ANNEXURE - II

List of yearwise species first planted at forest  
Research centre, Gureghas.

Year	Species first planted
1960	camphor
1962	Ramboo (Dendrocalamus strictus)
1963	Sonchay (Michelin champae) Eucalyptus citrisdon Himalayan Eucalyptus robusta
1964	
1965	Eucalyptus resinifera, Eucalyptus, commandulensis cupressus, cupressus governiana, cupressus cashmirina, cupressus tourlasg.
1966	calathris glauca
1967	cupressus macrocarpa, Orosinia indica
1968	Aurocarria cunninghamii, tea Eucalyptus seligna
1970	coffee, Agathus robusta, pinus patua satara 'A' Istemia scholaris
1971	churiasia tubularis, bodia roxburghii
1972	pinus roxburghii, oalchini, Thuja, cassuria
1973	pinus carribia
1977	pinus pseudostrobus
1979	pinus plittii, silver oak
2002	orchids
2015	kokum, vanilla



## ANNEXURE - III

Sl No	Species	Sl No	Species
1	Cupressus macrocarpa	16	Pinus serotina
2	Cupressus tourlosa	17	Pinus patula (Mexico)
3	Cupressus cashmiriana	18	Pinus patula (Kenya)
4	Cupressus bantami	19	Podocarpus
5	Cupressus lusitanica	20	Thuja rentellii
6	Cupressus goveniana	21	Thuja rentellii compacta
7	Cupressus sempervirens	22	Calatris glauca
8	Pinus elliottii	23	Agathis robusta
9	Pinus patula	24	Citrus deodara
10	Pinus khasya	25	Cunninghamia laevis
11	Pinus longifolia	26	Spruce
12	Pinus radiata	27	Aurocaria cunninghamii
13	Pinus pinaster	28	Aurocaria local
14	Pinus caribaea	29	Cryptomeria japonica
15	Pinus cassia		

## ANNEXURE-IV

Orchids collected at Forest Research Centre. of Gureghar.

A) Orchids from North-East India

- 1) *Aerides wilsonii*
- 2) *Cymbidium olotolium*
- 3) *Cymbidium pendulum*
- 4) *Dendrobium fimbriatum*
- 5) *Dendrobium moschaueri*
- 6) *Dendrobium nobili*
- 7) *Micropera obtusa*
- 8) *Papilionanthe terestris*
- 9) *Cymbidium murroranum* ✓
- 10) *Calanthe maculata*
- 11) *Phaius flavus*
- 12) *Phaius tankervillei*

B) Orchids from Tapola (Mahabaleshwar) -

- 14) *Aerides crispulindi*
- 15) *Dendrobium acutum* Lindl
- 16) *Rhynchostylis retusa*
- 17) *Dendrobium hartwegii* Lindl
- 18) *Dendrobium macrostachyum* Lindl
- 19) *Oberonia recurva* Lindl
- 20) *Oberonia falconeri* Lee.



- Q orchids from mahableshwar & Jawli area-
- 23 Dendrobium microbalbem A Rich
  - 24 Dendrobium hezbaeum Lindl
  - 25 Bulbophyllum produdockii J J sm
  - 26 Gastrochilus acoulis (Lindl kizo)
  - 27 Aesides Rispum Lindl
  - 28 dendrodium wrightii Hawkes & Keller

- D) orchids from Dajipar (kolhapur) -
- 29 oberonia brunaniang

- E) orchids from kerela
- 30 Vanilla planifolia

-C-  
St  
11/3/18

colors



## Objectives of field visit :-

- Document plant diversity.
- Document the RET plant.
- Document the life forms of plant.
- To create the awareness amongst students.

The check list of plant.





# Algae

Nostoc  
Spirogyra

Riccia  
Cyathodium  
Funaria  
Polytrichum

Adiantum  
Actinopteria  
Selaginella





Sl. No.	Name of plant	Family	
1)	<u>Clematis gouriana</u>	Ranunculaceae	Climber
2)	<u>Clematis hedisarifolia</u>	Ranunculaceae	Climber
3)	<u>Delphinium dasycaulon</u>	Ranunculaceae	Herb
4)	<u>Annona reticulata</u>	Annonaceae	small tree
5)	<u>Annona squamosa</u>	Annonaceae	small tree
6)	<u>Polythia longifolia</u>	Annonaceae	Tree
7)	<u>Coculus hirsutus</u>	Menispermaceae	Twiner
8)	<u>Tinospora cardifolia</u>	Menispermaceae	Twiner
9)	<u>Argemone mexicana</u>	Papaveraceae	Herb
10)	<u>Capparis zeylanica</u>	Cappariaceae	shrub
11)	<u>Cleome simplicifolia</u>	Cleomaceae	Herb





12)	<u>Cleome viscosa</u>	Cleomaceae	Herb
13)	<u>Ekortia Montona</u>	Flacurtiaceae	Tree
14)	<u>Polygala arvensis</u>	Polygalaceae	Herb
15)	<u>Polygala erioptera</u>	Polygalaceae	Herb
16)	<u>Polygala persicanifolia</u>	Polygalaceae	Herb
17)	<u>Portulaco oleracea</u>	Portulacaceae	shrub
18)	<u>Abitulon indicum</u>	Malvaceae	shrub
19)	<u>Hibiscus ovalifolius</u>	Malvaceae	shrub
20)	<u>Hibiscus rosainensis</u>	Malvaceae	shrub
21)	<u>kylia corvicing</u>	Malvaceae	small tree
22)	<u>Sida ocuta</u>	Malvaceae	Herb
23)	<u>Sida cordifolia</u>	Malvaceae	Herb
24)	<u>Sida rhombifolia</u>	Malvaceae	Shrub






25)	<u>Bombax ceiba</u>	Bombaceae	shrub <del>tree</del>
26)	<u>Sterculia urens</u>	sterculiaceae	Tree
27)	<u>corchorus trilobularis</u>	Teliaceae	Herb
28)	<u>Grewi acutifolia</u>	Teliaceae	shrub
29)	<u>Grewi serrulate</u>	Teliaceae	shrub
30)	<u>Grewi filifolia</u>	Teliaceae	small tree
31)	<u>Trimfeta rotundifolia</u>	Teliaceae	shrub
32)	<u>Linum mysorence</u>	Linaceae	Herb
33)	<u>Aspidopteris cordata</u>	Maphigiaceae	shrub
34)	<u>Hiptage bengholensis</u>	Maphigiaceae	shrub
35)	<u>Tribulus terrestris</u>	Zygophyllaceae	Herb
36)	<u>Semicarpus anacardium</u>	Ancardiaceae	Tree
37)	<u>Abnus pricatorius</u>	Fabaceae	Tree







35)	<i>Alysicarpus pubesense</i>	Fabaceae	Twinner
36)	<i>Cleistanthus</i>	Fabaceae	Twinner
37)	<i>Crotalaria medirogiro</i>	Fabaceae	Herb
38)	<i>Crotalaria linifolia</i>	Fabaceae	Herb
39)	<i>Dalbergia cissa</i>	Fabaceae	Tree
40)	<i>Desmodium gageitum</i>	Fabaceae	shrub
41)	<i>Goniogyna hirta</i>	Fabaceae	Herb
42)	<i>Indigofera cassiodes</i>	Fabaceae	Herb
43)	<i>Indigofera linifolia</i>	Fabaceae	Herb
44)	<i>Indigofera corallifolia</i>	Fabaceae	Herb
45)	<i>Indigofera glandulosa</i>	Fabaceae	Herb
46)	<i>Melilotus indica</i>	Fabaceae	Herb
47)	<i>Mucuna puriens</i>	Fabaceae	Herb



52)	<u>Paracalyx sariosa</u>	Fabaceae	Twinner
53)	<u>Pongamia pinnata</u>	Fabaceae	small tree
54)	<u>Psoralea cardifolia</u>	Fabaceae	Herb
55)	<u>Stylosanthes mucronata</u>	Fabaceae	Herb
56)	<u>Lornia gibbosa</u>	Fabaceae	Herb
57)	<u>Bahunia racemosa</u>	Caesalpinaceae	small tree
58)	<u>Cassia auriculata</u>	Caesalpinaceae	Tree
59)	<u>Cassia mimosoides</u>	Caesalpinaceae	Tree
60)	<u>Cassia tora</u>	Caesalpinaceae	Shrub
61)	<u>Cassia uniflora</u>	Caesalpinaceae	Herb
62)	<u>Acacia nilotica</u>	Mimosaceae	small tree
63)	<u>Acacia chundra</u>	Mimosaceae	Tree
64)	<u>Albizia lebeck</u>	Mimosaceae	Tree





64)	<u>Mimosops pudica</u>	Mimosaceae	Shrub
65)	<u>Kalochoe spathulata</u>	Crassulaceae	Herb
66)	<u>Anogishus latifolia</u>	Combretaceae	Tree
67)	<u>Combrotum ovalifolium</u>	Combretaceae	Shrub
68)	<u>Terminalia alata</u>	Combretaceae	tree
69)	<u>Terminalia alata</u>	Combretaceae	Tree
70)	<u>Syzigium cumini</u>	Myrtaceae	Tree
71)	<u>Ammania baccifera</u>	Lythraceae	Herb
72)	<u>Ammania pentandra</u>	<del>Lythraceae</del>	Herb
73)	<u>Ammania salicifera</u>	Lythraceae	Herb
74)	<u>Woodfordia fruticosa</u>	Lythraceae	Shrub
75)	<u>Woodfordia serpyllifolia</u>	Lythraceae	Shrub
76)	<u>Citrulus colocianthis</u>	Cucurbitaceae	Herb





77)	<i>Diplocycalis palmatus</i>	Cucurbitaceae	Climber
78)	<i>Mimordica dioca</i>	Cucurbitaceae	Climber
79)	<i>Mukia madraspatana</i>	Cucurbitaceae	Climber
80)	<i>Trichosanthes tricuspidata</i>	Cucurbitaceae	Climber
81)	<i>Opuntia elatior</i>	Cactaceae	Shrub
82)	<i>Mallugo pentaphylla</i>	Malluginaceae	Herb
83)	<i>Pimpinella lateriflora</i>	Apiaceae	Herb
84)	<i>Anotis monthonia</i>	Rubiaceae	Herb
85)	<i>Borreria pumila</i>	Rubiaceae	Herb
86)	<i>Canthium paviflorum</i>	Rubiaceae	Shrub
87)	<i>Ivora arborea</i>	Rubiaceae	Small tree
88)	<i>Catunangum spinosa</i>	Rubiaceae	Herb
89)	<i>Oldenlandia grossilis</i>	Rubiaceae	Herb






94)	<u>Wendlandia thyrsoides</u>	Rubiaceae	Tree
95)	<u>Acanthospermum hispidum</u>	Astraceae	Herb
95)	<u>Ageratum conyzoides</u>	Astraceae	Herb
95)	<u>Bidens biternata</u>	Astraceae	Herb
95)	<u>Blainvillea ocmella</u>	Astraceae	Herb
95)	<u>Blumea oblica</u>	Astraceae	Herb
96)	<u>Caesulia axillaris</u>	Astraceae	Herb
97)	<u>Centratherum anthihiliminticum</u>	Astraceae	Herb
98)	<u>Chromolaena odorata</u>	Astraceae	Herb
99)	<u>Conyza stricta</u>	Astraceae	Herb
100)	<u>Cosmos bipinnatus</u>	Astraceae	Herb
101)	<u>Cythocline lyrata</u>	Astraceae	Herb
102)	<u>Echinops echinatus</u>	Astraceae	Herb





104)	<u>Eclipta erecta</u>	Astraceae	Herb
104)	<u>Glossocordia basvalia</u>	Astraceae	Herb
105)	<u>Emilia sonchifolia</u>	Astraceae	Herb
106)	<u>Lagacea mollis</u>	Astraceae	Herb
107)	<u>Natonia grandiflora</u>	Astraceae	shrub
108)	<u>Pullicaria wightiana</u>	Astraceae	Herb.
			

*Completed by  
S. S. S.*



"Sheet, Sharir, Adhyayan"



Aundh Shikshan Mandal, Aundh

Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh

'B' Accredited

Department of Botany

CERTIFICATE

Exam no.

Date:- 23/10/2019

This is to certify that she/He *Inamdar Shubham Shikant* has satisfactorily completed the submission as per required in Botany course prescribed by Shivaji University, Kolhapur for BSc. I Botany practical examination under my supervision in the year 2018-19.

Teacher in charge

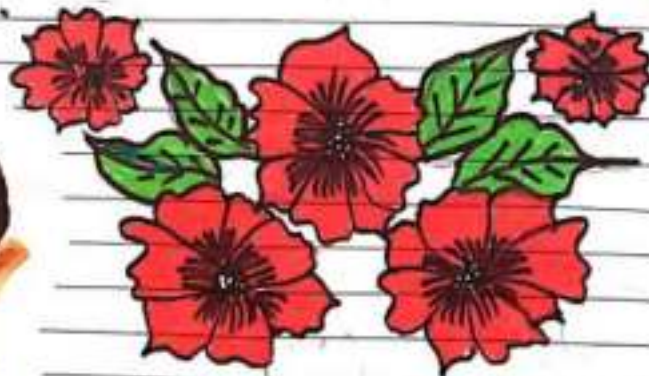
Head

Examiner

BAL  
GANESHI



# BOTANY STUDY TOUR REPORT



BAL  
GANESHI

IKON





# Introduction

Khatav, one of the eleven talukas of satara district has 136457 hectares of area. It is situated in south east region. Major portion of this taluka is occupied by Mahadev ranges of western ghats. The most prominent area Ramdangar Hills, chondkhona Hills, kartikswami Hills, Yamai Hills, Joliba Hills & Bhushangad Hills & part of vardhangad. Remaining part compriess of plains with open kille savannas having red & black soil. The hills & rivulutes of Khatav Taluka are rich in biodiversity with some very rare & endangered plant species.





Department of Botany organized field visit at korhikswami on hills of south east region. It is situated on the boundary of koregaon & khatau tahasil. It is one of the hill of Mahadev ranges. The plant diversity is rich. The forest type is open scrubs. dry deciduous & shrubby forest. The altitude from sea level is 3285 ft with N- $17^{\circ} 36' 14.970''$  latitude to E- $74^{\circ} 19' 27.819''$  longitude. The average rain fall of this area is 450 to 550 mm. In this hilly region some algae, Bryophytes, pteridophytes & some Angiospermic plants are found few of them they are rare, endemic & threatened plants.



" Sheel, Sharir, Adhyayan "



Aundh Shikshan Mandal, Aundh

Raja Shripatrao Bhagwantrao Mahavidyalaya, Aundh

'B' Accredited

Department of Botany

CERTIFICATE

Exam no.

Date:-22.03.2020

This is to certify that she / *He Dange Simran Iqbal*  
has satisfactorily completed the submission as per required in  
Botany course prescribed by Shivaji University, Kolhapur for  
BSc.I Botany practical examination under my supervision in the  
year 2019-20.

Teacher in charge

Head

Examiner



Page No.

Date

NAME : SIMRAN IQBAL DANGE

STD : B.SC (FY)

SUB : BOTANY.

FIELD VISIT REPORT 2019-20.

DHARESHWAR &

KOYANANAGAR

Teacher - Prof. Mohalkar  
Sir.



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# Field Visit

## Report :

### 2019-20





## Koyananagar and Dhareshwar

Department of Botany organized a field visit at botanically interesting places of Dhareshwar and Koyanagar on 08<sup>th</sup> February 2020. In this activity 60 students and 4 teachers are participated.

The aim and objective of this field visit is to observe the vegetation in natural condition. To observe the live plant specimen in nature and their habitats. To observe the seasonal vegetation. To observe and document the rare endogenous and endemic plant in this area.

First we visit to Dhareshwar which is located in Western Ghats. It is a small village in Patan Taluka in Solapur District of Maharashtra state, India. It comes under Divshi Kh Panchayat. It belongs to Deccan or Western Maharashtra region. It is located 45 km towards south from District





head quarters Solara. The latitude is  $17^{\circ}, 45''$ , Longitude  $73^{\circ}, 84''$ , elevation  $977.11\text{ m}$ . from sea level. Forest type dry deciduous. In this place we observe plant species.

Later on we visit to Koyanagar. The latitude is  $17^{\circ}, 4''$ , Longitude  $73^{\circ}, 76''$ , elevation  $746\text{ m}$ . from sea level. Forest type is semi evergreen to evergreen. In this place we observe different plant species. Mr. Patil sir gives nice information about Koyan herbal unit as well as bamboo kraft work shop. The town is small but famous for Koyana Dam and the Koyana Hydroelectric Project which is the largest completed hydroelectric project of India.<sup>[1]</sup> An earthquake in 1967 flattened the city. Koyana Nagar is nestled in the Western Ghats, has a tolerable climate for most of the year.





The Nehru Gardens, a landscaped garden which overlooks the Koyna Dam, is two kilometers away from the town. Botanical Gardens is five kilometers from Nehru park. It contains rare species of plants, some of which are used for their medicinal properties and in research. All the plants are native to the Western Ghats.





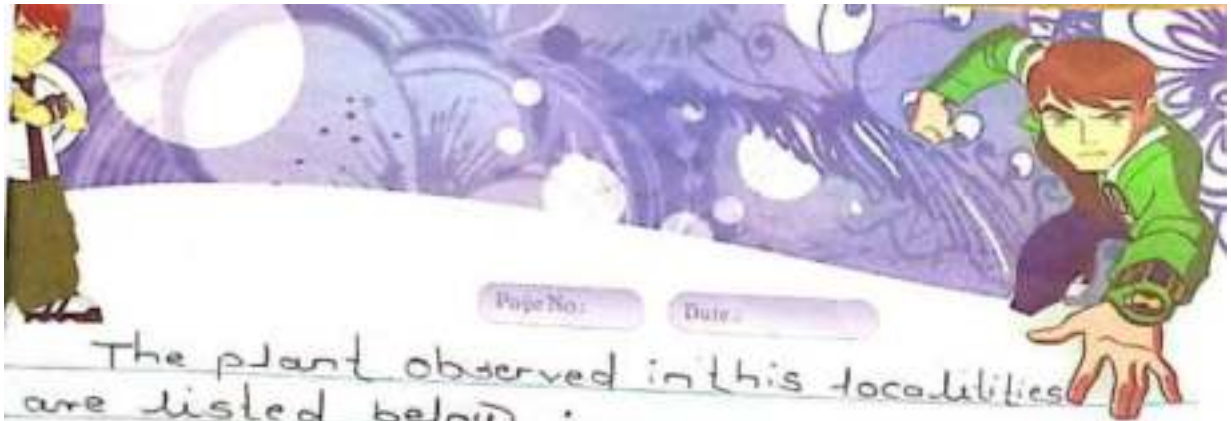


- Major Road
- District Headqu
- Town
- Roads
- ▭ National Highw

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The plant observed in this localities are listed below :

S.No	Name of plant	Family
1	Carrisa carandas	Apocynaceae
2	Celsia coromandeliana	scrophulariaceae
3	Isachne species	Poaceae
4	Eranthemum roseum	Acanthaceae
5	Lavandulla bipinnata	Lamiaceae
6	Colebrockea oppositifolia	Lamiaceae
7	Cythocline erecta	Compositae
8	Terminalia alata	Combretaceae
9	Terminalia catapa	Combretaceae
10	Terminalia arjuna	Combretaceae





11	<i>Terminalia bellarica</i>	Combretaceae
12	<i>Conscora diffusa</i>	Gentianaceae
13	<i>Bombax Malabaricum</i>	Malvaceae
14	<i>Gotolania species</i>	Fabaceae
15	<i>Indigofera tinctoria</i>	Fabaceae
16	<i>Flemengia strobilifera</i>	Fabaceae
17	<i>Barderia</i>	
18	<i>Blepharis intergrifolia</i>	Acanthaceae
19	<i>Diosoria bulbifera</i>	Dioscoriaceae
20	<i>Wodfordia floribunda</i>	Lythraceae
21	<i>Seniceo bombyance</i>	Compositae
22	<i>Phyllanthus emblica</i>	Euphorbiaceae





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23	Artocarpus species	Moraceae
24	Solanum virginianum	Solanaceae
25	Blumea species	Compositae
26	Rungia repens	Acanthaceae
27	Leucas longifolia	Lamiaceae
28	Laciosiphon glaucus	Thymelaceae
29	Sterculia urens	Sterculiaceae
30	Clerodendrum serratum	Lamiaceae
31	Phyllanthus myrtifolius	Euphorbiaceae
32	Ferrea indica	Apocynaceae
33	Dendrocalamus strictus	Poaceae
34	Vertiveria zizaniodes	Poaceae





35	<i>Costus speciosus</i>	Costaceae
36	<i>Barderia prinoitis</i>	Acanthaceae
37	<i>Cynotis sahyadrica</i>	Commelinaceae
38	<i>Eriocarpus nimmonii</i>	Malvaceae
39	<i>Bigonia species</i>	
40	<i>Asparagus racemosus</i>	Asparagaceae
41	<i>Piper longum</i>	Piperaceae
42	<i>Rubia cordifolia</i>	Rubiaceae
43	<i>Cleomadenium chinensis</i>	Lamiaceae
44	<i>Zornia gibbosa</i>	Faboaceae





## Gymnosperms

5	<i>Pinus roxburghii</i>	Pinaceae
6	<i>Gnetum Ola</i>	Gnetaceae
7	<i>Juniperus horizontalis</i>	Cupressaceae
8	<i>Araucaria heterophylla</i>	Araucariaceae

