

PUNE INSTITUTE OF COMPUTER TECHNOLOGY
ENVIRONMENTAL STUDIES(SEM-2)
FIELD VISIT REPORT

Submitted by

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AREA OF FIELD VISIT: EMPRESS BOTANICAL GARDEN



DATE OF VISIT: 23-06-2022

TIME OF VISIT: 04:00 PM

INTRODUCTION:

❖ History of the Empress Botanical Garden: -

The landowner of the Empress Botanical Garden is Sardar Vithalrao Purandhare. General Finjer formerly maintained it.

In 1838, the government took over the maintenance of the garden. In 1845, Sir Charles Napier was handed the responsibility of the Empress Botanical Garden, and it was then renamed from the Soldiers Garden to the Garden of Dr Don.

Empress Botanical Garden was named in honour of Queen Victoria, who was titled the then Empress of India.

In 1892, the government of Bombay took over the responsibility and handed the maintenance of this botanical beauty to the Agri-Horticulture Society of Western India.

Since then, they have been the caretakers of this garden.

❖ Location of the Garden: -

The Empress Botanical Garden is present in the Kavade Mala area near Ghorpadi. It is right across the Pune Race Course, near the Southern Command of India.

❖ Best time to visit the Empress Botanical Garden in Pune

Pune winters' ever soothing and pleasant weather is the best time to visit Pune. You will surely not want the hot and humid summers or the wet rains to spoil your trip.

The blooming Empress Botanical Garden looks jaw-droppingly beautiful in the winters when temperatures are around 25 degrees Celsius. You can enjoy different flowers in full bloom during this time.

❖ Exhibition in the Empress Botanical Garden

"Buds and Bloom" is a unique flower show at the Empress Botanical Garden in Pune every year.

You can enjoy a grand display of flowers and saplings, and it is a must-visit for everyone.

You can witness some of the most spectacular plants, including creepers, crawlers, and bonsais.

All the species of saplings have a placard stating the local and scientific name and a general description of the plant— where it can be planted and the weather conditions in which it can prevail.

If you are a gardening enthusiast, this exhibition will be a great investment of time and expand your knowledge.

The icing on the cake is to take one or two saplings with you and create your small garden at home.

#Trivia: In 2017, Basant Utsav was organized at The Empress Garden by Bangiya Sanskriti Samsad to showcase their culture. They even planted a few plants and trees here.

FIELD VISIT OBJECTIVE:

To do the detailed analysis of the various plant species in Empress Garden and to Study common insects, birds and basic principles of identification.



ENVIRONMENTAL DETAILS AND OBSERVATIONS:

Birds:

हरियाल
महाराष्ट्राचा राज्यपक्षी State Bird of Maharashtra



Zoological Name: *Treron phoenicoptera* Latham
Marathi Name: ' हरियाल, हिरोली, हरितांग '
English Name: Yellow - footed Green Pigeon
Yellow - legged Green Pigeon
Family: Columbidae
Origin: Native

Photos & Concept by : Dr. Sachin A. Punekar



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Empress Garden www.empressgarden.org

हरियाल हा पक्षी प्रामुख्याने कोकण, तसेच पश्चिम घाट माथ्यांवरच्या फळांवर व फळवागांमध्ये आढळतो. हा पक्षी सकाळच्या कोवळ्या उन्हात उंच झाडांवर सूर्यमनान करताना दिसतो. हा पक्षी थव्यांमध्ये रहात असून याचे प्रमुख खाद्य फळे, विया व धान्य आहे. दीज प्रसारणासाठी हा पक्षी अत्यंत उपयुक्त आहे. बुद्धकाळात हा पक्ष्याला मंगलदायक मानले जात असे. हा पक्षी दिसायला अतिशय मोहक असतो.

Yellow-footed Green-Pigeon are commonly seen on fruit trees in Konkan and crests of Western Ghats and also in fruit groves. They feed on fruits, berries, seeds and grains and helps in their dispersal. They forage in flocks. In early morning they are often seen sunning on the tops of emergent trees in dense forest areas. Considered to be the auspicious bird in Buddhist time. This bird looks very beautiful.



The **Oriental Dwarf Kingfisher** (**Ceyx erithaca**), also known as the *black-backed kingfisher* or *three-toed kingfisher*, is a pocket-sized bird in the family Alcedinidae.

A widespread resident of lowland forest, it is endemic across much of the Indian subcontinent and Southeast Asia. It is found in Bangladesh, Bhutan, Brunei, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Singapore, Sri Lanka, Thailand and Viet Nam.

This is a small, red and yellow kingfisher, averaging 13 cm in length, yellow underparts with glowing bluish-black upperparts.

Habitat

The preferred habitat is small streams in densely shaded forests. In the Konkan region of southwest India.

Breeding

It begins to breed with the onset of the southwest monsoon in June. The nest is a horizontal tunnel up to a metre in length. The clutch of four or five eggs hatches in 17 days with both the male and female incubating. The birds fledge after 20 days and a second brood may be raised if the first fails. The young are fed with geckos, skinks, crabs, snails, frogs, crickets, and dragonflies. The rufous-backed kingfisher is sometimes considered a subspecies.



The **Grey-Headed Canary-Flycatcher** (**Culicicapa ceylonensis**), sometimes known as the *grey-headed flycatcher*, is a species of small flycatcher-like bird found in tropical Asia. It has a square crest, a grey hood and yellow underparts. In the past the genus Culicicapa was considered to be an Old World flycatcher but studies have found them to belong to a new family designated as the Stenostiridae or fairy flycatchers that include the African genera Stenostira and Elminia.

Description

The grey-headed canary-flycatcher is about 12–13 cm (4.7–5.1 in) long with a squarish grey head, a canary yellow belly and yellowish-green upperparts. They forage actively like flycatchers and perches in a very upright posture. The sexes are indistinguishable in plumage. They have a very flat bill (which gave it the earlier genus name of *Platyrhynchus*) which when seen from above look like an equilateral triangle and is fringed with long rictal bristles.

Across their range, populations differ in the shades of the colours and vary slightly in dimensions and several of these have been designated as subspecies.

Habitat and Distribution:

This species breeds in upland to montane oak (*Quercus*) and other broadleaved forests and similar wooded areas in temperate to tropical southern Asia, from Pakistan, Central India, Bangladesh and Sri Lanka east to Indonesia and southern China. Many populations are resident, but some Himalayan birds are partial migrants that winter in peninsular India sometimes even occurring in arid habitats.



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The **Scarlet Minivet** (**Pericrocotus speciosus**) is a small passerine bird. This minivet is found in tropical southern Asia from Northeast India to southern China, Indonesia, and the Philippines. They are common resident breeding birds in forests and other well-wooded habitats including gardens, especially in hilly country. While the male of most subspecies are scarlet to orange with black upper parts, the females are usually yellow with greyish olive upper parts. Several former subspecies have been elevated to a species status in recent works. These include the orange minivet. All subspecies have the same habits of gleaning for insects and are often seen in mixed-species foraging flocks, usually foraging in small groups, high up in the forest canopy.

The scarlet minivet is 20–22 cm (7.9–8.7 in) long with a strong dark beak and long wings. The male has black upperparts and head, and scarlet underparts, tail edges, rump and wing patches. The shape and colour of the wing patches and the shade or orange in the male varies across populations. In the subspecies *nigroluteus* and *marchesae* from south Philippines the scarlet/orange is entirely replaced by yellow. The female is grey above, with yellow underparts (including the face), tail edges, rump and wing patches.



The **Common Kestrel** (*Falco tinnunculus*) is a bird of prey species belonging to the kestrel group of the falcon family Falconidae. It is also known as the European kestrel, Eurasian kestrel, or Old World kestrel. In Britain, where no other kestrel species commonly occurs, it is generally just called "kestrel".

This species occurs over a large range. It is widespread in Europe, Asia, and Africa, as well as occasionally reaching the east coast of North America. It has colonized a few oceanic islands, but vagrant individuals are generally rare; in the whole of Micronesia for example, the species was only recorded twice each on Guam and Saipan in the Marianas.

They are smaller compared with other birds of prey, but larger than most songbirds. Like the other *Falco* species, they have long wings as well as a distinctive long tail.

Their plumage is mainly light chestnut brown with blackish spots on the upperside and buff with narrow blackish streaks on the underside; the remiges are also blackish. Unlike most raptors, they display sexual colour dimorphism with the male having fewer black spots and streaks, as well as a blue-grey cap and tail. The tail is brown with black bars in females, and has a black tip with a narrow white rim in both sexes. All common kestrels have a prominent black malar stripe like their closest relatives.

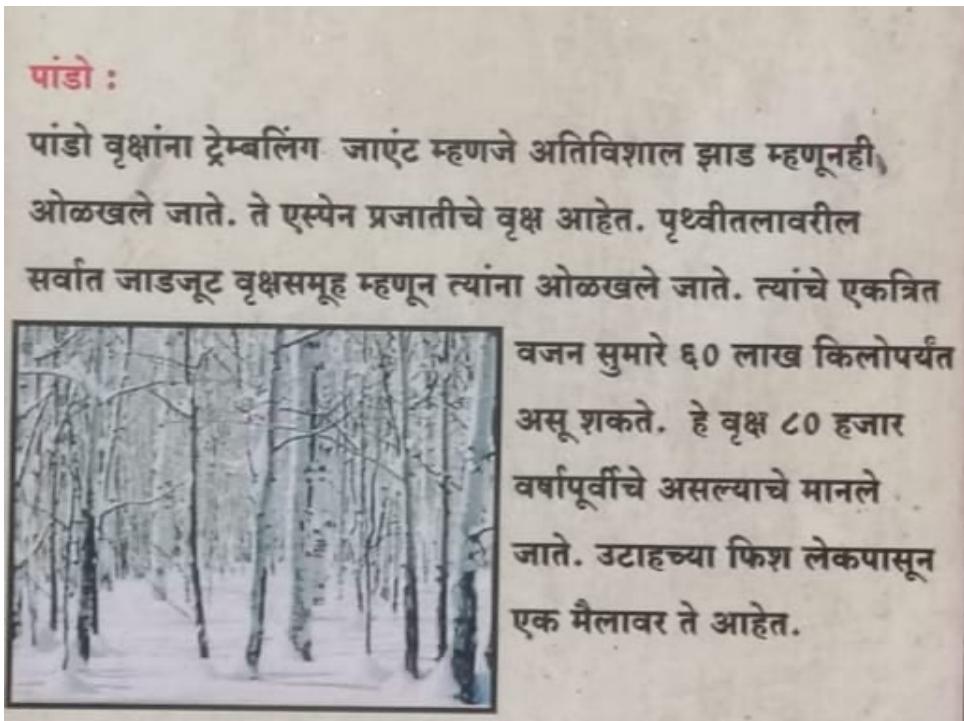
The cere, feet, and a narrow ring around the eye are bright yellow; the toenails, bill and iris are dark. Juveniles look like adult females, but the underside streaks are wider; the yellow of their bare parts is paler. Hatchlings are covered in white down feathers, changing to a buff-grey second down coat before they grow their first true plumage.



The **Indian roller** (**Coracias benghalensis**) is a bird of the family Coraciidae. It is 30–34 cm (12–13 in) long with a wingspan of 65–74 cm (26–29 in) and weighs 166–176 g (5.9–6.2 oz). The face and throat are pinkish, the head and back are brown, with blue on the rump and contrasting light and dark blue on the wings and tail. The bright blue markings on the wing are prominent in flight. The sexes are similar in appearance. Two subspecies are recognised.

The Indian roller occurs widely from West Asia to the Indian subcontinent. Often found perched on roadside trees and wires, it is common in open grassland and scrub forest habitats, and has adapted well to human-modified landscapes. It mainly feeds on insects, especially beetles. The species is best known for the aerobatic displays of males during the breeding season. Adult males and females form pair bonds and raise the young together. The female lays 3–5 eggs in a cavity or crevice, which is lined with a thin mat of straw or feathers. The roller is the state bird of three Indian states. It is listed as a species of least concern on the IUCN Red List.

Flora:



पांडो :

पांडो वृक्षांना ट्रेम्बलिंग जाएंट म्हणजे अतिविशाल झाड म्हणूनही, ओळखले जाते. ते एस्पेन प्रजातीचे वृक्ष आहेत. पृथ्वीतलावरील सर्वात जाडजूट वृक्षसमूह म्हणून त्यांना ओळखले जाते. त्यांचे एकत्रित वजन सुमारे ६० लाख किलोपर्यंत असू शकते. हे वृक्ष ८० हजार वर्षांपूर्वीचे असल्याचे मानले जाते. उटाहच्या फिश लेकपासून एक मैलावर ते आहेत.

Pando (tree)

Pando (Latin for "I spread"), also known as the **trembling giant**, is a clonal colony of an individual male quaking aspen (*Populus tremuloides*) determined to be a single living organism by identical genetic markers and assumed to have one massive underground root system. The plant is located in the Fremont River Ranger District of the Fishlake National Forest at the western edge of the Colorado Plateau in south-central Utah, United States, around 1 mile (1.6 km) southwest of Fish Lake. Pando occupies 108 acres (43.6 ha) and is estimated to weigh collectively 6,000 tonnes (6,000,000 kg), making it the heaviest known organism.[5][6] The root system of Pando is estimated to be up to several thousand years old, placing Pando among the oldest known living organisms.

द तूळ:

मेक्सिकन राज्य सॅटा
मारियामधील एका
चर्चाच्या जमिनीवर 'द
तूळ' नावाचा हा वृक्ष
आहे. त्याची उंची
११६ फूट व जाडी
११९ फूट आहे. तो

दोन हजार वर्षांपूर्वीचा
असल्याचे मानले
जाते. ओक्साकामधील एक वार्षिक उत्सव याच झाडाच्या नावावर आहे.
तो दरवर्दी ऑक्टोबरमध्ये साजरा होतो.



Empress Garden
www.empressgarden.org

Árbol del Tule

El Árbol del Tule (Spanish for **The Tree of Tule**) is a tree located in the church grounds in the town center of Santa María del Tule in the Mexican state of Oaxaca, approximately 9 km (6 mi) east of the city of Oaxaca on the road to Mitla. It is a Montezuma cypress (*Taxodium mucronatum*), or ahuehuete (meaning "old man of the water" in Nahuatl). It has the stoutest tree trunk in the world. In 2001, it was placed on a UNESCO tentative list of World Heritage Sites, but was removed from the list in 2013.

झाडा-झुडपांची दुनियाही बरीच अनोखी असते. आपल्या जगदिशचंद्र बसूनी दाखवून
दिले की झाडानाही भावना, संवेदना असतात, झाडेही झोप घेतात. आतापर्यंत विज्ञानाला झाडांच्या
एक लाखापेक्षाही अधिक प्रजाती माहिती झाल्या आहेत. त्यापैकी सात अनोख्या
झाडांविषयी माहिती....



जनरल शरमन: हा जगातील सर्वात¹
उंच वृक्ष आहे. तो २,३०० ते २,७००
वर्षांपूर्वीचा असल्याचे मानले जाते.
लाल लाकडाचा हा वृक्ष
कॅलिफोर्नियातील सिक्योर्ड्या
नॅशनल पार्कमध्ये आहे. त्याची उंची
२७५ फूट असून जाडी २५ फूट
इतकी प्रचंड आहे.

GENERAL SHERMAN TREE

The General Sherman Tree is the *world's largest tree*, measured by volume. It stands 275 feet (83 m) tall, and is over 36 feet (11 m) in diameter at the base. Sequoia trunks remain wide high up. Sixty feet above the base, the Sherman Tree is 17.5 feet (5.3 m) in diameter. The General Sherman Tree Loop 1/2 mile trail descends upon some of the most magnificent trees in the National Park and culminates at the base of the General Sherman Tree--the world's largest living thing.

Texas Palmetto



Scientific classification	
Kingdom:	Plantae
Clade:	Tracheophytes
Clade:	Angiosperms
Clade:	Monocots
Clade:	Commelinids
Order:	Arecales
Family:	Arecaceae
Genus:	<i>Sabal</i>
Species:	<i>S. mexicana</i>
Binomial name	
<i>Sabal mexicana</i>	
Mart.	



Sterculiaceae was a family of flowering plant based on the genus Sterculia. Genera formerly included in Sterculiaceae are now placed in the family Malvaceae, in the subfamilies: Byttnerioideae, Dombeyoideae, Helicteroideae and Sterculioideae.

As traditionally circumscribed the Sterculiaceae, Malvaceae, Bombacaceae, and Tiliaceae comprise the "core Malvales" of the Cronquist system and the close relationship among these families is generally recognized. Sterculiaceae may be separated from Malvaceae sensu stricto by the smooth surface of the pollen grains and the bilocular anthers.



The Impatiens Walleriana

The busy Lizzie truly brings honor to her name: The comparatively easy care decorative flower blossoms during the whole summer until the start of fall without pause and thus stays busy for the whole time. Numerous blossoms in shining colors, lying closely next to each other, decorate the bushy Impatiens Walleriana and form a colorful contrast to the juicy-green foliage.

The frost-sensitive plant originates in the east and south-east of Africa and mostly grows for one year. In these care instructions you come to know under which conditions it grows best and produces the largest amount of blossoms.

The Impatiens Walleriana came to Europe at the end of the 19th century, originating in the east and south-east of Africa. Today the blossoming of plants on balconies, terraces and gardens is not imaginable without it.

CONCLUSION:

Hereby, we conclude our report on the 150 years old Empress garden which in Pune is one of the lungs of the city as it holds a rich variety of plants and trees that help up to clean the environment, and it is one of the most important botanical garden in Pune as it has a large variety of small plants and flowers as well. We did detailed analysis and observation of the various plant species, common insects and birds in Empress Garden. We had a great overall experience in studying of nature in Empress Garden. The Garden was well maintained and clean. It was also rich with variety of birds. The Garden also provides a place of recreation for all ages, starting from infants to adults to senior citizens as well. We would like to thank our teacher Mrs. K.R. Jadhav for her valuable support, guidance and encouragement for this field visit without which this would not have been possible and we would also like to thank PICT for giving us this opportunity.