



ARBORETUM

MONTHLY NEWSLETTER

ANTHEIA

THE BOTANICAL SOCIETY OF
MIRANDA HOUSE



WHAT'S INSIDE

1. Myristica Swamp Forests
2. Forest under crisis
3. Mangrove: Nature's blessing
4. Potato genome decoded
5. Riddles

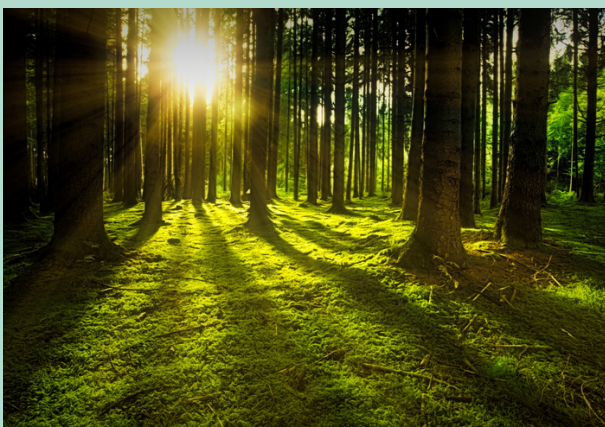


Myristica Swamp Forests

-India's most ancient swamp forest

Swamp is the area of land permanently filled with water. They can be freshwater & saltwater. Mostly dominated by trees and is named after the type of tree that grows in these forests. So, do these Myristica swamp forests named after flowering tree family myristicaceae, which Harbours endemic plant species from the same family myristicaceae- *Gymnacranthera canarica* & *Myristica fatua*. Trees of this family are wild-type nutmeg. Their bark exudates pinkish-red resinous sap. Myristica swamp forests are freshwater swamps. They are also considered 'living fossils', including the genus *Myristica*, the oldest flowering tree genus. In India, they are found in the small patches of Kerala, Uttara Kannada of Karnataka, Goa, Western Ghats, Andaman & Nicobar Islands & Meghalaya.

Plant and animal life adapted here to wet conditions as water flows perennially. Trees evolved stilt roots. There are biodiversity-rich species in these swamps. These swamps act as a natural water purifier- that absorbs nitrates. Filter out heavy metals & phosphorus with pesticides & metal is binding to the sediment floor.





Forest under Crisis

- An eyeopening reality

According to a recent report released by the UN Department of Economic and Social Affairs (UN DESA), World's natural forests and other significant ecosystems like marshes and grasslands are at high risk due to the catastrophic impacts COVID-19 pandemic and rapidly increasing global temperature and biodiversity losses.

Progress can be seen in Asia, Europe and Oceania as recent stats suggest an increase of global forest area through afforestation and restoration.

However, the overall advancements are threatened by the exacerbating state of our natural environment- forest fires, droughts, invasive species, land degradation and exploitation, pests, storms, and droughts are among the significant reasons. Forests are under tremendous pressure due to post-pandemic problems such as increasing rural poverty, unemployment, and population growth, combined with greater competition for land with other sectors.

One of the most common reasons for forest crisis is a forest fire, defined as the unwanted fire that spreads uncontrollably in a forest or woodland. Climate change, global warming, and land usage patterns have resulted in augmented wildfires globally. Residents intentionally ignite forests to clear land for farming, which often leads to loss of biodiversity, plants, and animals and reduction in forest cover.

Reference-

<https://economictimes.indiatimes.com>

<https://www.britannica.com/>

<https://blogs.worldbank.org/>

Mangrove Nature's Blessing

A Mangrove is a group of shrubs or trees that grow in halophytic conditions along the intertidal regions of the planet. They generally grow in swampy areas, often underwater in low oxygen conditions. Mangroves mainly belong to the families like Rhizophoraceae, Acanthaceae, Lythraceae, Combretaceae, and Araceae. Mangrove environment is very hostile as it is rich in salt but deficient in oxygen. Hence, pneumatophores called aerial, or breathing roots are present, facilitating the exchange of gases via numerous pores.

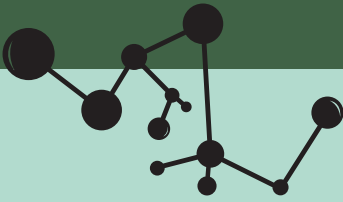
Asia has the most significant number of mangroves worldwide. South Asia comprises 6.8% of the world's mangrove cover, and India contributes 45.8%. The highest percentage of mangrove cover in India is found in West Bengal (42.45%). A UNESCO World Heritage Site, Sundarbans is the largest mangrove forest globally.

The mangrove ecosystem supports an incredible range of biodiversity, the great reservoir of blue carbon, prevents the growth of algal blooms, and helps stabilize ecological and coastal factors. India is blessed to have a great ray of mangrove forests.

"If there are no mangroves, the sea will have no meaning. It's like a tree with no roots, and mangroves are the roots of the sea!"

— Quote by Mad-Ha Ranwasii.





Potato genome decoded

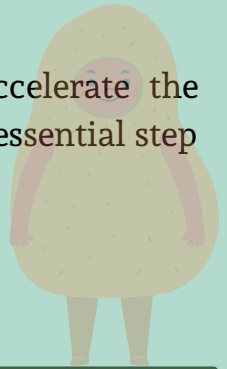
More than 20 years after the first release of the human genome, scientists at the Ludwig-Maximilians-Universität München and the Max Planck Institute for Plant Breeding Research in Cologne have for the first time decoded the highly complex genome of the potato.

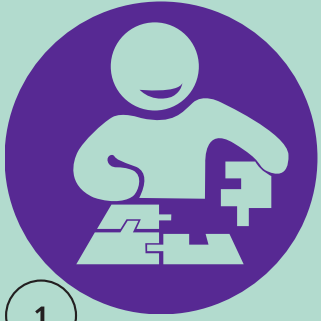
Potatoes inherit two copies of each chromosome from each parent, making them a species with four copies of each chromosome (tetraploid). It is highly challenging and time-consuming to generate new varieties that harbour the desired combination of individual properties.

Instead of trying to differentiate the four, often very similar chromosome copies, Korbinian Schneeberger and his colleague Hequan Sun and other co-workers circumvented this problem by sequencing the DNA of large numbers of individual pollen cells. In contrast to all other cells, each pollen cell contains only two random copies of each chromosome; this facilitated the reconstruction of the entire genome sequence.

This technically demanding study lays the biotechnological foundation to accelerate the breeding of more robust varieties - a goal in plant breeding for many years and an essential step for global food security.

Reference: Max Planck Institute for Plant Breeding Research





1

I speak without a mouth and hear without ears. I have nobody, but I come alive with the wind in a forest. What am I?



2

How far will a blind dog walk in the forest?

3

It's like a forest without trees, like a jail you want to visit. Though the inmates did no wrong. You may freely walk along, they 're put there so you can see them, just as long as you don't feed them.

4

You walk down the forest and more you leave behind, than you take. What am I?

5

You go to the forest and got it when you got it you could not get it so you left it there and brought it home. What is it?

6

I can keep you warm but I'm not a scarf
I'm often made of brick or stone but I'm not a wall
I sometimes have a poker but I don't have a deck of cards
I contain logs but I'm not a forest
I'm found beneath a chimney but I'm not Santa

7

I am a forest without trees, a lake without water, and crust without the soil. Who am I?

If a ninja kills in the forest and no one is around to hear what does it make?

Answers
Echo, Halfway, Zoo, Footstep, A Splinter,
Fireplace, Map, A corpse



THE TEAM

EDITORS

Shubhra Singh , Priyanka & Mrinalini Gupta

CONTENT TEAM

Shubhra Singh, Aayushi Sahay, Nancy,
Yoshita Bhardwaj, Shailza, Sapana
& Samridhi Upadhyay

PR TEAM

Preeti Gupta, Preeti Kulhari, Harsha
Priyanka, Anjali Pandey, Irya
Ayushi Shivrayan & Khushi

FEEDBACK FORM

https://docs.google.com/forms/d/e/1FAIpQLSf2RdTAS2pv6HD8RSBg.noDNg7id901tJ9i44sxdteye5sm9Hg/viewform?usp=sf_link