

Prelim Bits 24-11-2023 | UPSC Daily Current Affairs

Green Leaf Volatiles (GLVs)

For the first time, scientists were able to visualise plants sensing compounds released by other plants in danger.

- **GLV** - A group of compounds that a plant releases into the air when it is injured which may be a warning to other plants that danger is near.
- They consist of six carbon (C6) compounds including alcohols, aldehydes and esters which are released from almost every plant.
- **2 major defence mechanisms**
 - When a plant is damaged, GLVs are released as by-products. Plants can make themselves less palatable or even indigestible to the insect attackers.
 - When an insect takes a bite of a plant leaf, calcium ions flood the leaves in the cells.
 - **Future prospects** - To fight agricultural pests without using pesticides and going organic.



Other internal defence responses of plants - Jasmonic acid activates plants' defences and effectively repels insect pests.

Reference

[The Hindu| Visualising the mechanism of GLV](#)

25 years of the International Space Station (ISS)

International Space Station (ISS), a place of peaceful collaboration for science, has completed more than 140,000 Earth orbits in its journey of 25 years.

- ISS is a multi-nation construction project that is the largest single structure humans ever put into space.
- **Origin** - Mainly a creation of USA and later Russia was invited to participate.
- **Operated by** - 5 agencies
 - Canadian Space Agency (CSA)
 - The European Space Agency (ESA)
 - The Japan Aerospace Exploration Agency (JAXA)
 - The National Aeronautics and Space Administration (NASA)

- The State Space Corporation “Roscosmos”
- **Size** - Measures 109 meters (357 feet) end-to-end.
- **Location** - At Low Earth Orbit (430 kilometers)

Among the 1st “live-in” astronauts were Bill Shepherd of NASA and Roscosmos cosmonauts Yuri Gidzenko and Sergei Krikalev.

- **Components** - It consists of
 - **Zarya Control Module** - Russia based component that was launched in 1998 for supplying fuel storage, battery power, and serving as a docking zone for other vehicles
 - **Unity Node 1 module** - US based component
- It passes over our heads **16 times every 24 hours** (orbiting Earth every 90 minutes at a speed of **8 kilometers per second**).
- **Achievements** - Its discoveries have benefitted drug development, new water purification systems, methods to mitigate muscle and bone atrophy and lead to innovations in food production.
- **Future of ISS** - NASA, CSA, and the ESA have committed to operate till 2030, while Russia has said that it will withdraw after 2024 to focus on building its own space station around 2028.

*NASA plans to spend up to \$1 billion to build the **US Deorbit Vehicle (USDV)** to deorbit ISS.*

Related links - [Tiangong Space Station](#)

References

1. [Indian Express| ISS completes 25 years](#)
2. [Indian Express| Future of ISS](#)

Global DPI Repository (GDPIR) and Social Impact Fund

India has launched 2 new initiatives - Global DPI Repository and Social Impact Fund, to advance Digital Public Infrastructure in Global South.

Digital Public Infrastructure (DPI) is a set of shared digital systems to deliver and provide equitable access to public and / or private services to drive development, inclusion, innovation and respect human rights and fundamental freedoms.

- **Global DPI Repository (GDPIR)** - A virtual repository of DPI, voluntarily shared by

G20 members and beyond.

- **Developed by** - Ministry of Electronics and Information Technology (MeitY)
- **Aim** - To bridge the knowledge gap in the choices and methodologies required for the design, construction, deployment, and governance of DPIs.
- To showcase the information in a standardized format by incorporating elements such as maturity scales, source codes and governance frameworks.

*Currently, the GDPIR features **54 DPIs from 16 countries**.*

Social Impact Fund (SIF)

- It is envisioned as a government led, multistakeholder initiative to fast-track DPI implementation in the global south.
- **Aim** - To offer a platform for all stakeholders to contribute to this fund and help accelerate the achievement of the Sustainable Development Goals (SDGs) in Low- and Middle-Income Countries (LMICs) through DPIs.
- To provide upstream technical and non-technical assistance to countries in developing DPI systems.

*The **SIF India** has pledged an initial commitment of 25 million USD.*

Reference

[PIB| Global DPI Repository and Social Impact Fund](#)

Udayarpalayam Palace

Udayarpalayam Palace was once an impregnable seat of power in Tamil Nadu but now is a refuge for pigeons and bats.

- It is a 5 acre palace that resembles the Thirumalai Nayakkar Mahal of Madurai.
- **Location** - Udayarpalayam in Ariyalur district, **Tamil Nadu**.
- **Built in** - **18th century** by the then Zamindars.
- **Architecture** - **South Indian secular architecture**.
- The foundation is made of granite boulders and pillars.
- The palace includes
 - **Lakshmi Vilasam** (A court hall)
 - **Krishna Vilasam** (Hall for dance and music concerts)
 - **Marriage hall**
- **Stucco images** - The skeleton of every image (dancers and others) was made of wood, covered with cloth over which plastering was done and final touches were given with lime and sand paste.

Rulers of Udayarpalayam

- Udayarpalayam rulers lived as *poligars*.

Palaiyakkarars, or Poligar, in Andhra and Tamil Nadu refers to the holder of a small kingdom (palayam) as a feudatory to a greater sovereign.

- **Genealogy** - The names of the rulers start with the *title Kachi*, indicating that they had migrated from Kancheepuram.
- **1st ruler** - Kachi Yuvarangappa Kalakka Tola Udayar.
- **Currency** - *Udayarpalayam puthupanam* [new money].
- **Political scenario** - They submitted to the Mughals when they took Gingee and paid *Peshkash* (tribute).
- During Anglo-French struggle, *they supported British*.

Reference

[The Hindu| Udayarpalayam Palace](#)

Investor Risk Reduction Access (IRRA)

Recently launched Investor Risk Reduction Access (IRRA) platform acts as a 'safety net' for investors registered with SEBI.

- **Need** - There is rise in instances of glitches in trading members' systems making the investors with open positions at risk.
- **Launched by** - SEBI (Securities and Exchange Board of India)
- **Developed by** - It has been jointly developed by all the stock exchanges of India
 - BSE (Bombay Stock Exchange)
 - NSE (National Stock Exchange)
 - NCDEX (National Commodity and Derivatives Exchange Limited)
 - MCX (Multi Commodity Exchange of India Ltd)
 - MSE (Metropolitan Stock Exchange of India)
- **Objectives**
 - To ***reduce risks faced by investors during technical glitches*** at both the primary and disaster recovery site.
 - To provide an opportunity ***to square off/close their open positions and cancel pending orders***.
- **Working**
 - It can be invoked *by trading members or suo moto by stock exchanges*.
 - It downloads trades information from all the trading venues.
 - It *sends SMS/email to investors with IRRA access link* over an Internet-based Based Trading (IBT) web URL and an app.
 - Investors can access through a secure login system using their Unique Client Code (UCC) or investor's PAN number.

- **Reverse migration** - Based on the *trading member's request and confirmation from all exchanges*, the IRRA will be shut down and enable to resume business from the original trading system.
- *Only 1 reverse migration* will be allowed during a trading day.
- **Limitations** - It is *not meant for taking fresh positions or orders*, and is not available for algo trading, Institutional clients.

Squaring off is a trading style that, day trade investors use to make profit from the market volatility.

Reference

[Indian Express| Working of IRRA](#)

Other Important News

Guru Teg Bahadur

- [Guru Tegh Bahadur](#) Martyrdom Day is observed every year on 24 November. He is the **9th of ten gurus**.
- He was born in Amristar, Punjab in 1621. He is also called Hind *ki Chadar, or Shield of India*.
- He composed 115 songs that are included in the *Sri Guru Granth Sahib*, the central book of Sikhism.

Saint Meera Bai

- Saint Meera Bai is one of the famous Hindu mystic poetess of 16th century and a great devotee of lord Krishna.
- Meera Bai was born into a royal family in Kudki, now Pali district of **Rajasthan** in 1498 CE. Her childhood name was Yashodha.
- Bhaktmal, a poetry collection that describes the **biography of Meera Bai**, is written by **Guru Nabha Dass ji** in 1585 CE in Braja language.

INS Sumedha

- The Indian Navy completes 2nd *anti-piracy patrol* in the Gulf of Guinea in Atlantic Ocean with the Offshore Patrol Vessel (OPV) INS Sumedha recently.
- INS Sumedha is the 3rd of the indigenously developed Naval OPV of Saryu class.
- It was built by Goa Shipyard Limited and commissioned on 2014.
- It took part in the recently conducted **Operation Kaveri** for evacuation of Indian diaspora from war hit Sudan recently.

Galathea Bay/International Container Transshipment Port (ICTP)

- Union Minister for Ports, Shipping and Waterways (MoPSW) visits Galathea Bay and reviews progress of proposed International Container Transshipment Port (ICTP) recently.

Galathea Bay

- Galathea Bay is located on Great Nicobar Island in the Andaman and Nicobar Islands.
- Galathea Bay is also the name of a National Park that was established in 1992. It is part of the Great Nicobar Biosphere Reserve.

Article 311(2) (C)

- The Jammu & Kashmir government has terminated 4 government employees for being a threat to the security of the state under article 311 (2) (c) recently.
- **Article 311(2)** - It states that a civil servant cannot be dismissed, demoted, or reduced in rank unless they have been given a reasonable opportunity to show cause against the proposed action.
- **Article 311(2)(c)** - It allows the government to terminate employees without ordering an inquiry into their conduct or giving them an opportunity to explain their position if the President/Governor, is satisfied that in the interest of the security of the State, it is not expedient to hold such inquiry.

Paranjothi

- Paranjothi, popularly known as Sirruthondar was an army general of the great Pallava king Narasimavarman I (630-668 CE).
- He also led the Pallava army during the invasion of Vatapi in 642 CE.
- Periyapuram, a biography of 63 Saivaite saints, gives a detailed account of Sirruthondar as he was one of the Saivaite saints.

Location of Ecuador

- Daniel Noboa sworn in as Ecuador's President recently.
- Ecuador is a country in **South America** that's named after the equator, which splits the country in two. **Capital** - Quito.
- It's bordered by Colombia in north, Peru in east and south and in west by Pacific Ocean.
- It is home to Amazon rainforest, Andean paramos, Cloud forests, Galápagos Islands.



Chila in Peru

- A recent study says that Peru has lost more than half of its glacier surface in the last 6 decades, and 175 glaciers became extinct due to climate change between 2016 and 2020.
- The Chila mountain range lies in **the Arequipa Region in the Andes of Peru**.
- This mountain range is home to key first waters that give rise to the Amazon River, the longest and mightiest in the world, descend from the glacier.
- It has lost 99% of its glacial surface since 1962.

Koala

- Koala (*Phascolarctos cinereus*) is a tree-dwelling herbivorous marsupial of Australia.
- Koalas are folivore specialists, feeding mainly on Eucalyptus leaves, and occasional leaves of other plant species.
- **Conservation status** - IUCN - Endangered.
- **Chlamydia** is a bacterial infection affecting many koalas in South East Queensland. Australia is planting kola corridors to save them.
- **Marsupials** are a group of mammals that are also known as pouched mammals.

Nidirana Noadihing (Musical Frog)

- Scientists have discovered a new species of 'music frog', Nidirana noadihing in **Arunachal Pradesh** recently.
- The speciality of this new species of frog is that *both the male and female are vocal*.
- **Habitat** - Swamps, ponds and paddy fields, and they often construct nests to lay their eggs.
- The new species was named after the **Noa-Dihing River**, which is near where the specimens were discovered and collected.
- **Noa-Dihing** is a tributary of Brahmaputra, originates in Arunachal Pradesh and flows through Assam and joins the Brahmaputra at Dihingmukh.
- The new species confirmed for the first time that the Nidirana genus has been found in India.
- Nidirana species are known in Japan, Taiwan, China, Vietnam, Laos and Thailand.

