UPSC Daily Current Affairs| Prelimbits 24-07-2025

Lyriothemis Abrahami

Prelims - *Current events of National & International importance | General issues on Environmental ecology, Bio-diversity & climate change.*

Why in News?

Recently, a new species of dragonfly, Lyriothemis abrahami, was discovered in Kerala, which was previously misidentified as Lyriothemis flava due to superficial similarities.

- **Discovered by** - Researchers from the Travancore Nature History Society (TNHS).
- **Nomenclature** - Named after odonatologist Abraham Samuel.
- **Scientific name -** Lyriothemis abrahami.
- **Family –** Libellulidae.
- **Order –** Odonata, insect order that includes dragonflies and damselflies.
    - It increased Kerala's odonate species count to 191, including 78 endemic species.
- The species was spotted only 4 times in *Ponmudi, Kallar, Neyyar and the Peppara wildlife sanctuary.*
- **Morphology** - Exhibits strong dimorphism, with males featuring uniquely shaped hamules and female displaying jet black bodies with yellow triangular spots.

- **Habitat -** Endemic to Southern and central Western Ghats, with known populations in forest landscapes of Kerala and Karnataka.
- **Distribution -** Lowland rainforests to mid-elevation evergreen and deciduous forests

between 50 m and 1,100 m above sea level.
- **Breeding -** The new species breeds in phytotelmata, which are small pools of water in tree holes.
- **Significance -** Indicator of forest health, stressing habitat conservation's broader ecological benefits.
- Emphasizes the importance of conserving forest microhabitats like tree holes, which serve as critical breeding sites.

Reference

The Hindu| Lyriothemis Abrahami

Jodidara Traditions

Prelims - *Current Events of National and International Importance | History of India*

Why in News?

Recently, Jodidara tradition practiced in the Hatti tribes of Himachal Pradesh.

- **Jodidara –** It is a traditional form of ***polyandrous marriage*** practised among the Hatti tribe in Himachal Pradesh.
- **Polyandry —** Where a ***woman marries two or more men*** at the same time, usually brothers.
    - The term derives from Greek Polys, meaning "many," and Andros, meaning "man."
- Like any conventional wedding, the event was marked by vibrant folk music, dance, and community festivities.
- **Unique Ritual**
    - **Jajda -** The wedding is called Jajda, which begins with the bride arriving in a procession to the groom's village.
    - **Seenj -** A ritual known as Seenj is performed at the groom's home, where a priest chants mantras in the local dialect and sprinkles holy water.
- The ceremony ends with the couple being offered jaggery, with blessings from the *Kul Devta* for a sweet and harmonious life ahead.
- **Significance -** The polyandry system helped prevent the division of *ancestral land among multiple heirs.*
- Other reasons include fostering unity among brothers, preserving joint family systems, and ensuring a secure and stable environment in remote, hilly terrains.
- The tradition also helped manage scattered agricultural lands, which required collective, long-term attention.
- Under Indian law, *polyandry is not allowed*.

Hatti Tribal Community

• They reside in the Trans-Giri region of Himachal Pradesh and the Jaunsar Bawar region of Uttarakhand.
• The Hatti tribe was recently granted ***Scheduled Tribe status.***
• The Hattis is a close-knit community who got their name from their tradition of selling homegrown vegetables, crops, meat and wool etc. at small markets called '**haat**' in towns.
• They live in the *Giri and Tons River basins* near the Himachal-Uttarakhand border.
• **Governed by -** Traditional council called 'khumbli' which handles community matters.
• **Traditional Practices** - Hatti men wear distinctive white headgear on ceremonial occasions.

Reference

Hindustan Times| Jodidara, Traditional form of Polyandry among the Hatti tribe

South Asia's Immunization Milestone

***Prelims**: Current Events of National and International Importance*

Why in News?

According to new data recently released by the World Health Organization (WHO) and UNICEF for 2024, South Asia achieves record immunization coverage with India, Nepal leads progress.

- **Historic Milestone -** South Asia recorded its ***highest-ever immunization coverage*** for children in 2024, as per new WHO-UNICEF data.
- This achievement is seen as a major milestone in the region's fight against vaccine-preventable diseases.
- **India Achievements -** India reduced ***zero-dose children*** (those who have not received a single vaccine) by 43%, from 1.6 million (2023) to 0.9 million (2024).
    - Still, India accounts for *6.4% of global zero-dose children* and nearly half of South Asia's zero-dose cases.
- **Nepal Progress -** Nepal achieved a 52% reduction in zero-dose children.
- **Pakistan Updates -** Pakistan recorded its *highest-ever DTP3 coverage* (diphtheria, tetanus, pertussis) at 87% in 2024.
- **Afghanistan Setback -** Afghanistan experienced the *lowest immunization coverage* show 1% decline in the region.
- **DTP Vaccine**
    - In South Asia, **92% of infants received the third dose of DTP** in 2024 (up 2 percentage points from 2023).
    - **First-dose DTP coverage** increased from 93% to 95%, surpassing pre-COVID levels.
    - **Zero-Dose Reduction -** The region as a whole saw zero-dose children *drop by 27%* i.e. from 2.5 million (2023) to 1.8 million (2024).
- **Measles Control**

    - **First dose of measles vaccine** coverage reached 93%, and second dose 88% in 2024 (up from 90% and 87% in 2023).
    - **Measles cases fell 39%**, from over 90,000 (2023) to about 55,000 (2024).
    - Coverage still **below the 95% threshold** needed to prevent outbreaks.
- **HPV Vaccine**
    - **HPV coverage for adolescent girls** rose from 2% (2023) to 9% (2024) regionally.
    - Bangladesh vaccinated over 7.1 million girls since programmer launch in 2023.
    - **Notable increases -** Bhutan, Maldives, Sri Lanka.
    - Nepal launched national HPV vaccination (Feb 2025), vaccinating over 1.4 million girls.
    - India rolled out plans for indigenous HPV vaccine developments in later year of 2024.
- **Support systems** -Progress driven by *government investment*, policy, frontline/community workers (many women), donor/partner support, digital tools, improved data and outreach programs.
- **Remaining Gaps** - Despite progress, *2.9 million children in South Asia remain under-vaccinated* and are unprotected.
- **Future recommendations -** UNICEF and WHO urges for
    - Sustained political commitment.
    - Increased domestic immunization funding.
    - Intensive outreach for zero-dose and under-vaccinated children.
    - Reinforced disease surveillance systems.

Quick Facts
• **UNICEF,** the United Nations Children's Fund, is a UN agency focused on providing humanitarian and development aid to children worldwide. It was established in 1946. • The **World Health Organization (WHO)** is a specialized agency of the United Nations which coordinates responses to international public health issues and emergencies.

Reference

The Hindu| South Asia’s Immunization Milestone

Reusable Water Filter with Light and Vibration

Prelims *- Current events of National & International importance and General Science.*

Why in News?

Recently, Scientists from the Institute of Nano Science and Technology (INST) in Mohali, IIT-Dharwad, and IIT-Kharagpur have designed a cheap reusable water filter.

- **Need -** Dyes such as Congo Red and Methylene Blue are industrial pollutants released into rivers and groundwater causes stomach, skin, and breathing illnesses.
- **Exiting filtering methods -** These are costly and having higher foot print as they burn through chemicals and electricity.
    - **For example -** Ozone, Fenton chemistry and other methods work to clean the water.
- **Filter specification -** First 3D printed thin, sponge-like sheets of ***polylactic acid (PLA)***, **a *biodegradable plastic*** often used in compostable cups.
- PLA is naturally water-repelling, So that it was soaked in a mild sodium-hydroxide solution to make it water-loving.
- **Made up of -** Nanoparticles of *bismuth ferrite (BFO)* and dipped the prepared PLA sheets into a BFO ink.
- The treated sheets stayed strong through five reuse cycles, losing only about 3% of their cleaning power.
- **Mode of operation -** Combining *both light and vibration yielded piezo-photocatalysis*, a process that worked day or night.
- **Components –**
    - **Visible light -** Under it, BFO acted like a solar-powered catalyst that split water molecules and created highly reactive radicals that shred organic dye molecules.
    - **Ultrasound shaking -** BFO's piezoelectric nature generated an internal electric field that drove the same radical-making reactions even in the dark.
- **Working -** When light and vibration were used together, the filter removed about 99% of Congo Red and 74% of Methylene Blue in 90 minutes.
    - It also partially cleaned real wastewater collected from a textile plant.
- **Capability** –Tto understand performance the computer fed by thousands of experimental data points, including dye concentration, catalyst amount, light intensity, and ultrasound frequency.
- Modern algorithms such as random forests, XGBoost, and an artificial neural network are used and got results far beyond the experimental ones.
- **Deployment –** At near treatment plants.
- **Developments underway** - For its use in Jal Nigam and Namami Gange projects as well.
- Efforts are underway to make this product more sustainable using plant-derived products.

Reference

[The Hindu| Reusable Water Filter with Light and Vibration]