UPSC Daily Current Affairs| Prelimbits 17-06-2025

Kanchuria Tripuraensis & Kanchuria Priyasankari

Prelims: Current events of National Importance and International Importance | Conservation

Why in News?

Tripura University and scientists from Kerala recently identified two new earthworm species.

- The specimens were first collected between 2004 and 2010.
- The new team later managed to recollect the specimens, paving the way for formal classification and scientific description.

Eastern Himalayas and the Northeastern Hill regions are the 2nd-richest zones in India for earthworm diversity.

- **Genus -** Kanchuria, first described by Julka in 1988, is endemic to this region and previously comprised 8 species.
- **Kanchuria tripuraensis –** It stands out for its ***unique anatomical feature***, a single ventromedian spermatheca located in segments 7 and 8, a trait not seen in other species of the genus.
- It has been named after Tripura, where it was found thriving in *rubber and pineapple plantations*, highlighting the ecological diversity of even agriculturally modified landscapes.
- **Kanchuria priyasankari -**It belongs to the turaensis-species group and is characterised by three pairs of spermathecal pores.
- It is a tribute to Prof. Priyasankar Chaudhuri, whose long dedication to earthworm taxonomy has placed Tripura on the national and international map for soil biodiversity studies.
- Though similar to Kanchuria turaensis, it can be easily distinguished by its *smaller body size* and *distinct reproductive structures.*
- With these additions, the total number of known species in the genus now *rises to 10.*

References

1. Assam Tribune | Two new earthworm species
2. MSN | Two new earthworm species

World Crocodile Day

Prelims: Current events of National Importance and International Importance | Conservation

Why in News?

World Crocodile Day, celebrated recently, commemorated the 50th anniversary of India's Crocodile conservation project.

- World Crocodile Day is celebrated annually on ***June 17th*** to raise awareness about the conservation of crocodiles and alligators.
- It is an initiative of the Belize-based Crocodile Research Alliance.

India's Crocodile Conservation Project

- **Started in -** 1975 in Odisha's Bhitarkanika National Park.
- **Species in India -** The 3 main species of crocodiles are found in India,
  - Saltwater crocodile (Crocodylus porosus),
  - Mugger crocodile (Crocodylus palustris), and
  - Gharial (Gavialis gangeticus).
- **Role of Odisha in Conservation -** Odisha is the ***only State*** to host the wild populations of all three native species gharial, saltwater crocodile and mugger.
- Incubation and rearing centres were immediately established in Odisha for gharials at Tikarpada on the Mahanadi River and saltwater crocodiles at Dangamal in Bhitarkanika.
- Uttar Pradesh followed with centres at Kukrail (Lucknow) and Katarnia Ghat along the Girwa River.
- India holds nearly ***80% of the global wild gharial*** population.
- **Nesting sites -** National Chambal Sanctuary (spanning three States), Katarnia Ghat Wildlife Sanctuary, Gandak River, Corbett Tiger Reserve, and Son Gharial Sanctuary in Madhya Pradesh.
- The saltwater crocodile population has recovered in the wild, with Bhitarkanika in Odisha holding the largest share, followed by the Andaman and Nicobar Islands and the Sundarbans.
- The mugger crocodile, once severely depleted in numbers, has now reclaimed most of its historical range.

Reference

The Hindu | World Crocodile Day

India – Cyprus Relations

Prelims: Current events of National Importance and International Importance | International Relations

Why in News?

Prime Minister Narendra Modi landed in Cyprus recently, first visit by an Indian Prime Minister to Cyprus in over 20 years.

- **Cyprus** - Cyprus is an island in the ***Eastern Mediterranean Sea***, located close to Turkey and Syria.
- It is a member of the ***European Union (EU)*** despite being geographically in Asia.
- Cyprus supports India's candidature as a ***permanent member of the expanded UN Security Council.***
- It has also extended its full support for the
  - **India-US Civil Nuclear Agreement**, within the Nuclear Supplier Group (NSG) and
  - **International Atomic Energy Agency (IAEA),** which helps India address its increasing energy needs and benefit its economic development.
- Cyprus is a crucial part of the India-Middle East-Europe Economic Corridor (IMEC), an infrastructure project that India expects multiple benefits from.
- IMEC is supposed to boost trade and connectivity between India and Europe via the Middle East, and Cyprus, in the Mediterranean, has an important role to play.
- Cyprus is set to hold the ***Presidency of the Council of the EU*** in the first half of 2026, and as India looks to build stronger trade and security ties with Europe, Nicosia could be a crucial ally.

Reference

The Indian Express | PM Modi in Cyprus

Operation Rising Lion

Prelims: Current events of National Importance and International Importance | International Relations

Why in News?

Israel's military strikes on Iran were named Operation Rising Lion.

- **Rising Lion -** The name is taken from a Bible verse, which symbolizes *Israel's strength and determination*, comparing the nation to a lion rising for battle.
- Israel's strikes focused on nuclear facilities, missile production sites, and senior Iranian military figures.
- Chief among them was Iran's *principal uranium enrichment site at Natanz.*
- Natanz is home to thousands of centrifuges and has long been at the centre of Western and Israeli concerns about Iran's nuclear ambitions.
- Reports showed fires near the above-ground Pilot Fuel Enrichment Plant (PFEP).
- The below-ground Fuel Enrichment Plant (FEP), which is three stories deep, is considered more resistant to conventional airstrikes.
- This marks the most direct Israeli attack on Iranian nuclear infrastructure since the

Stuxnet cyberattack over a decade ago.

Iran's Nuclear Infrastructure

- Over the past five years, Iran has steadily accelerated its *uranium enrichment programme*, shortening the time it would take to produce enough fissile material for a nuclear weapon.
- This breakout time, the period needed to enrich uranium to weapons-grade levels sufficient for one nuclear device, reportedly shrunk to just a few weeks.
- Under the terms of the 2015 Joint Comprehensive Plan of Action (JCPOA), that timeframe was estimated at over a year.
- The International Atomic Energy Agency (IAEA) estimates that Iran possesses enough 60% enriched uranium, if enriched further to 90%, to manufacture nearly 4 nuclear warheads.
- Tehran maintains that its nuclear activities are for peaceful purposes.

Other Nuclear Facilities

- **Fordow** - Located in the city of Qom, south of Tehran, is its most fortified.
- **Isfahan -** Isfahan is a multi-purpose nuclear complex located on the outskirts of Isfahan in central Iran.
- The Uranium Conversion Facility (UCF) here is where yellowcake *uranium is processed into uranium hexafluoride (UF6)*, the gaseous form used in centrifuges for enrichment.
- **Khondab -** Khondab is located near the city of Arak in western Iran.
- Originally known as the Arak Heavy Water Reactor, the Khondab facility has the potential to produce plutonium, another pathway to a nuclear bomb.
- **Tehran Research Reactor -** The capital's research reactor is primarily used for academic and medical purposes.
- **Bushehr -** Located in southern Iran, on the Persian Gulf coast, Bushehr is Iran's only operational civilian nuclear power plant.
- Constructed with Russian assistance, the facility is powered by Russian-supplied fuel, which is returned to Russia after use.

Reference

Economic Times | Operation Rising Lion

One Liners 17-06-2025

History, Art and Culture

Servants of India Society (SIS)

Gokhale Institute of Politics and Economics (GIPE) has formally demanded that the Servants of India Society (SIS), its parent body, be placed under a neutral administrator.

• **Servants of India Society (SIS)** – Was founded by Gopal Krishna Gokhale, along with G.K. Devadhar, A.V. Patwardhan, and N.A. Dravid, in Pune, India, on *June 12, 1905*.

• **Objectives** – To train individuals who were willing to devote their lives to the *country's cause in a religious spirit, for political education and agitation*, and to promote the national interest of the Indian people through constitutional means.

• **Young missionaries** – The members of the Society were considered as young missionaries of Indian nationalism.

• The SIS played a critical role in the Indian Independence movement, and its legacy continues to influence Indian politics and society today.

Geography

Sharda River

Four teenagers recently drowned after being swept away while bathing in Sharda river near Devraghat in Sitapur district, Uttar Pradesh.

• **Sarda River** – River of northern India and western Nepal.

• It *rises as the Kali River in far northern Uttarakhand state* in the Great Himalayas on the eastern slopes of the Nanda Devi massif.

• The river then flows generally south-southwest, where it constitutes the border between Uttarakhand state and Nepal.

• **Major tributaries** – Are the Dhauliganga, Goriganga and Sarju.

Polity & Governance

National Company Law Tribunal (NCLT)

The NCLT has recently initiated insolvency proceedings against Gensol Engineering and its subsidiary Gensol EV Lease, appointing interim resolution professionals.

• **National Company Law Tribunal (NCLT)** – Was constituted by the union government under the section 408 of the Companies Act, 2013.

• **Benches of NCLT** – In the first phase the Ministry of Corporate Affairs has set up *eleven Benches*, *one Principal Bench at New Delhi* and ten other Benches.

• These Benches are *headed by the President Chief Justice (Retd.)* Ramalingam Sudhakar and comprises of *sixteen Judicial Members* and *9 Technical Members at different locations*.

Rajasthan's Cash Plus model

The recently released report card on Rajasthan's Cash Plus model indicates a 49% rise in early breastfeeding (now reaching 90% of newborns).

Cash Plus Model

• **Convergence Approach** – It *combines financial aid (cash transfers) with counselling*, home visits, and group sessions focused on nutrition and health.

• **Augments National Scheme** – It *enhances the national Pradhan Mantri Matru Vandana Yojana (PMMVY)* by including second-time mothers.

• **Pilot and Scale-up** – Launched in late 2020 in five districts, it expanded statewide in 2022 with an allocated budget of 210 crore rupees annually, targeting 3.5 lakh second-time pregnant women.

Key Achievements and Impact:

• **Improved Health Indicators** – A three-year study showed significant improvements:
  - 49% rise in early breastfeeding (now 90%).
  - 49% improvement in dietary diversity for pregnant women.
  - 54% more women using cash for nutrition.
  - 44% increased receptiveness to home-based counselling.

• **Behavioral Change** – The model *promotes healthy dietary practices, encourages institutional deliveries*, and strengthens community support.

• **Beneficiary Impact** – Over *3.3 million women have directly benefited*, with 80% reporting improved affordability and access to nutritious food due to increased awareness and counselling.

International Relations and Issues

Kazakhstan's first nuclear power plants

Russia's state nuclear corporation, Rosatom, will lead an international consortium to build Kazakhstan's first nuclear power plant.

• **Location** – The two-reactor plant will be built in the village of Ulken, approximately 400 km northwest of Almaty.

• **Technology** – The plant will utilize advanced Russian VVER-1200 Generation 3+ reactors.

***Kazakhstan** is one of the world's biggest uranium producers but currently relies mostly on coal-powered plants for its electricity, supplemented by some hydroelectric plants and the growing renewable energy sector.*

• **Capacity Goal** – Kazakhstan aims to have 2.4 gigawatts of nuclear capacity by 2035.

• **Financing** – Work has begun on attracting state export financing from the Russian Federation for the project.

• **Energy Diversification** – This move is significant as Kazakhstan, a major uranium producer, currently relies predominantly on coal for its electricity.

Agriculture

KUSUM-C scheme

KUSUM-C scheme inaugurated by Siddaramaiah, Chief Ministe of Karnataka.

• **PM- KUSUM-C** – Is a scheme of the *Ministry of New and Renewable Energy (MNRE)*, aimed at *solarizing existing grid connected agriculture pumps*.

• Under this component, farmers with grid-connected pumps can double their pump capacity in KW by installing solar PV.

• **KUSUM-C in Karnataka** – 389 electricity supply substations in our State are being solarised.

• Solar units with a capacity of 2,396 megawatts (MW) will power 1,555 agricultural feeders with solar electricity.

• As a result, 6,32,794 agricultural pump sets will receive solar power.

• This will not only provide quality electricity to farmers during the daytime but also reduce power wastage."

Environment

Flue Gas Desulphurisation Units

A committee of experts, chaired by Principal Scientific Advisor (PSA) has recently recommended that India do away with a decade-long policy of mandating Flue Gas Desulphurisation (FGD) units in all coal-fired thermal power plants (TPPs).

• **Flue gas** – Is *emitted as a by-product of combustion of fossil fuels*.

• It mainly contains pollutants such as carbon dioxide (CO2), sulphur dioxide (SO2), nitrogen oxides, particulate matter, etc.

• **Purpose** – FGD units are crucial systems installed in power plants, primarily coal-fired thermal power plants (TPPs), to specifically remove sulfur dioxide (SO2) from flue gas, a byproduct of fossil fuel combustion.

• **Mechanism** – They neutralize acidic SO2 using a basic compound. Common types include:

- **Dry Sorbent Injection** – Powdered sorbent (e.g., limestone) reacts with SO2 and is then removed.
- **Wet Limestone Treatment** – SO2 passes through a limestone slurry, forming stable gypsum with industrial applications; this is the most common and highly efficient method.
- **Seawater Treatment** – Used in coastal plants, where seawater absorbs and is subsequently treated to remove SO2.

• **Why SO2 is Harmful** – *SO2 is a major air pollutant causing global warming*, respiratory problems in humans, and significantly contributing to the formation of harmful secondary particulate matter (PM2.5).

• **Status in India:**

- Mandated by the Environment Ministry in 2015 for all 537 coal-fired TPPs, with deadlines repeatedly pushed.
- As of April 2025, only 39 TPPs had installed FGD units.
- Recent policy shifts, including a proposed rollback of the mandate, raise concerns despite prior investments like the National Clean Air Programme (NCAP).

Security

Rudrastra

The Solar Defence and Aerospace Limited (SDAL) has recently completed a test of its Hybrid VTOL UAV, Rudrastra, at the Pokharan Firing Range.

• **Vertical Take-off and Landing Unmanned Aerial Vehicles (VTOL UAV)** – Can take off and land vertically with no need for runways, which makes them effective and versatile for special manoeuvres like surveillance, mapping and delivery, especially in tough terrains.
• **Rudrastra** – *Indigenous hybrid VTOL UAV developed by the Solar Defence and Aerospace Limited (SDAL)*.
• Rudrastra had reliable performance, maintaining a stable real-time video link while operating over a mission radius of more than 50 km.
• The UAV recorded a *total range exceeding 170 km*, including loitering time over the target area.
• It achieved an *estimated endurance of 1.5 hours*.
• The performance met key operational requirements for battlefield deployment.

Science

Genomic Insights into Long COVID

A recent Genome-Wide Association Study (GWAS) published in Nature Genetics identified a genetic link to Long COVID, specifically near the FOXP4 gene.

• **FOXP4 Gene Link** – The study found a strong association between Long COVID and a variant (rs9367106) near the FOXP4 gene on chromosome 6.
• Individuals with the 'C' version of this variant were significantly more likely to develop Long COVID.
• **Lung and Immune Connection** – The FOXP4 gene is *highly active in lung tissue*, particularly in type 2 alveolar cells crucial for lung function, tissue repair, and immune response.
• This suggests a direct link between lung health and persistent post-COVID symptoms.
• **Independent of Initial Severity** – The *gene's influence was observed even in non-hospitalised patients*, indicating its role is not solely tied to the initial infection's severity.
• **Diverse Study** – The GWAS included data from 33 groups across 19 countries, emphasizing the importance of diverse genetic data for reliable and globally relevant findings.

Implications for India:

• **High Burden, Limited Data** – India faces a substantial Long COVID burden, yet its representation in global genetic studies, including this one, is often limited.
• This creates a "genomic gap" in understanding disease prevalence and genetic influences within Indian populations.
• **Leveraging Genome-India** – Projects like the GenomeIndia Project, which has already cataloged genetic variations from diverse Indian populations, are critical.
• This foundational data can support future India-specific GWAS on Long COVID, enabling tailored clinical and diagnostic approaches.
• **Public Health Strategy** – Understanding genetic predispositions can inform targeted public health interventions, improve diagnostic capabilities, and facilitate the development of personalized treatments for Long COVID in India.

Miscellaneous

Karnataka's Maternal Mortality Ratio (MMR)

Maternal Mortality Ratio (MMR) in Karnataka has further declined by five points from 63 per lakh live births in 2019-21 to 58 in 2020-22 but it continues to be the highest among the five southern States.

MMR Trends and Current Status:

• **Steady Decline** – *Karnataka's MMR has consistently decreased*, reaching 58 per lakh live births in 2020-22, down from 63 in 2019-21 and 108 in 2014-16.

• This signifies sustained improvement in maternal health indicators.

• **Positive Outlook** – Despite tragic isolated incidents like the Ballari deaths, the State Health Department views this as a "positive trend," reflecting better access to antenatal care, institutional deliveries, and emergency obstetric services.

Regional Comparison and National Standing:

• **Southern Disparity** – At 58, *Karnataka's MMR is currently the highest among the five southern states*.

• This contrasts sharply with Kerala's impressive 18, highlighting regional variations in health outcomes and effective public health models.

• **National Position** – Karnataka stands eighth nationally in terms of MMR.

Achievement of Sustainable Development Goal (SDG):

• **Ahead of Schedule** – *Karnataka is one of eight Indian states to have achieved the United Nations' SDG target of reducing MMR to 70 per lakh live births by 2030, well in advance*.

• **Significance** – Achieving this SDG target is a critical indicator of improved public health and the state's commitment to saving women's lives during pregnancy and childbirth.