



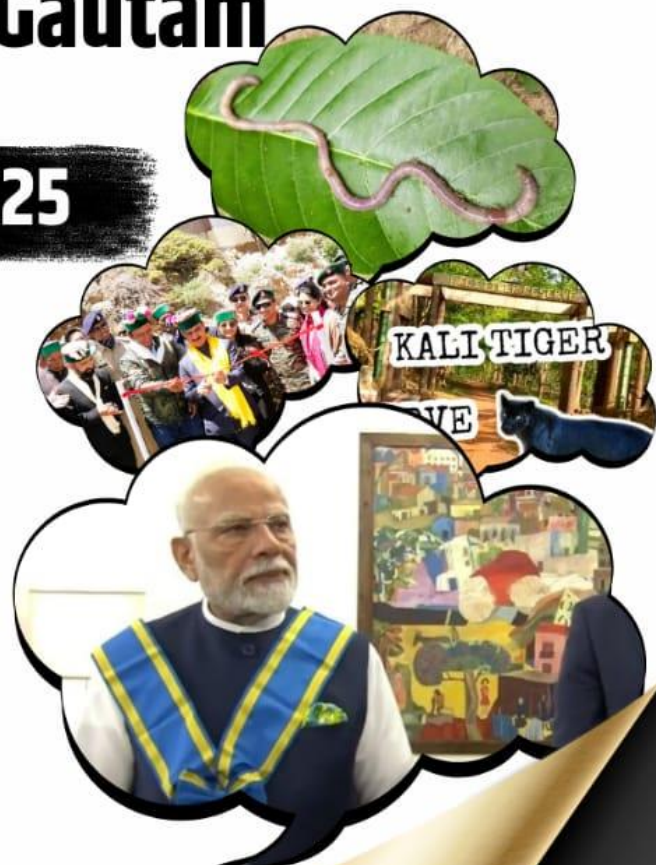
Daily Current Affairs



To The Point by Dhananjay Gautam

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1 Two New Earthworm Species Unearthed in Tripura

Context: In a remarkable boost to India's biodiversity records, scientists have **discovered two new species of earthworms** in the state of **Tripura**, underscoring the ecological wealth of the **Eastern Himalaya–Northeastern Hill** region. These species — *Kanchuria tripuraensis* and *Kanchuria priyasankari* — are the latest additions to the **genus Kanchuria**, which is **endemic to Northeast India**. With these discoveries, the **total species count** within this genus has now reached **10**, and the number of **megadrile earthworm species documented in Tripura** climbs to **38**.



A Glimpse into the Species:

Kanchuria tripuraensis:

- Named after the state of **Tripura**, this species was found thriving in **rubber and pineapple plantations**, highlighting the rich **soil biodiversity** that persists even in **agriculturally transformed landscapes**. What sets this species apart is its **unique anatomical feature** — **single ventromedian spermathecae** located in **segments 7 and 8** — a characteristic previously unrecorded in its genus.

Kanchuria priyasankari:

- A heartfelt tribute to **Prof. Priyasankar Chaudhuri**, a pioneer in **earthworm taxonomy** whose four decades of research have brought national and international attention to Tripura's subterranean biodiversity. This species belongs to the **turaensis species group** and is noted for its **comparatively smaller body size** and a **distinctive spermathecal structure** that differentiates it from its close relative, *Kanchuria turaensis*.

Ecological and Scientific Significance:

- Tripura's emerging status as a **biodiversity hotspot for soil invertebrates** is now further strengthened. The discovery of these two species reinforces the importance of **microfauna in ecosystem health** and the **role of earthworms as ecological engineers**, improving **soil aeration, nutrient recycling, and plant productivity**.

Such findings are particularly important at a time when **concerns are rising** about the **impact of tourism and wildlife safaris** — such as those in the **Kali Tiger Reserve** — on sensitive ecosystems. Conservationists argue that greater emphasis should be placed on **soil biodiversity conservation**, which is often overlooked in mainstream environmental efforts.

India's Position in Global Earthworm Diversity:

India is home to **over 500 described species** of earthworms, many of which remain understudied. The **Northeast region**, especially the **Eastern Himalayan zone**, ranks as the **second-richest in earthworm diversity in India**, after the **Western Ghats**. These discoveries further highlight the need for **comprehensive soil biodiversity assessments**, particularly in lesser-explored regions like **Tripura**.



To the Point

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Final Thoughts: The identification of *Kanchuria tripuraensis* and *Kanchuria priyasankari* not only adds new names to taxonomy but also sends a powerful message about the **hidden diversity beneath our feet**. These discoveries highlight the urgent need to protect **below-ground biodiversity**, which supports life above the ground — from plants and animals to humans themselves.



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Kali Tiger Reserve: A Biodiversity Gem Under Tourism Pressure

Context: Recent efforts to promote **wildlife safaris** in **Kali Tiger Reserve** have sparked concern among **conservationists**, who fear that unchecked tourism could disturb its delicate ecosystem. While eco-tourism can be a tool for awareness and conservation funding, experts stress the need for **strict regulations** to avoid harming the sanctuary's rich biodiversity.



About Kali Tiger Reserve: A Jewel of Karnataka's Western Ghats

Previously known as the **Dandeli-Anshi Tiger Reserve**, the **Kali Tiger Reserve** lies in the heart of **Uttara Kannada district** in **Karnataka**. Spanning an area of approximately **834.16 sq. km**, this lush expanse is part of the **ecologically sensitive Western Ghats**, one of the **eight "hottest hotspots"** of biodiversity in the world.

Two Sanctuaries, One Wild Heart:

The reserve encompasses two contiguous protected areas:

- **Dandeli Wildlife Sanctuary**
- **Anshi National Park**

Together, they form a **single protected forest tract**, supporting an extraordinary range of flora and fauna.

Geography and Water Source:

Flowing through the reserve is the **Kali River**, a vital water lifeline for **Uttara Kannada**. It lends its name to the reserve and nourishes the **dense forest ecosystems** throughout the park.

To the north, Kali Tiger Reserve borders the **Bhimgad Wildlife Sanctuary**, which links to **Radhanagari** and **Koyna wildlife sanctuaries** in **Maharashtra**, forming a crucial **wildlife corridor**.

Forest Types and Rich Flora:

The reserve features a stunning blend of:

- **Moist deciduous forests**
- **Semi-evergreen zones**
- **Evergreen pockets**, especially in the deep valleys and westernmost parts

The vegetation includes:

- Majestic trees like **teak**, **Malabar tamarind**, and **silver oak**
- Rich undergrowth of **bamboo**, **lantana**, and other native shrubs

Fascinating Fauna: A Wildlife Enthusiast's Dream

Kali Tiger Reserve is home to an astonishing variety of wildlife, including:

- **Flagship species:** **Tiger**, **Leopard**, and the elusive **Black Panther**
- **Large mammals:** **Asian Elephant**, **Indian Bison (Gaur)**, **Sloth Bear**

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- **Herbivores:** Sambar, Spotted Deer, Wild Boar
- **Primates:** Hanuman Langur, Bonnet Macaque
- **Predators:** Wild Dogs (Dholes)

The reserve is also a **birdwatcher's paradise**, hosting all **four species of hornbills** found in India, including one of the **largest populations of the Great Indian Hornbill** in the Western Ghats.

Did You Know?

- **Black Panthers**, though the same species as leopards, have a genetic mutation causing **melanism**, giving them their iconic dark coat.
- The **Kali River**, beyond supporting wildlife, is essential for **hydroelectric projects, irrigation, and drinking water**, making its conservation even more critical.
- The reserve is a significant part of the **UNESCO World Heritage-listed Western Ghats**, contributing to its global ecological value.

A Call for Balanced Conservation:

While tourism can foster awareness, the **fragile ecosystems** of places like **Kali Tiger Reserve** require **well-regulated ecotourism** that prioritizes **wildlife welfare** over commercial interests. With its dense forests, rare species, and vital ecological functions, **Kali** stands as a testament to India's **natural heritage**—one that must be protected for generations to come.

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3 India Set to Test Its Most Advanced Hypersonic Weapon: The ET-LDHCM

Context: India is preparing to test a next-generation **hypersonic cruise missile**, the **Extended Trajectory-Long Duration Hypersonic Cruise Missile (ET-LDHCM)**, developed entirely by the **Defence Research and Development Organisation (DRDO)**. This advanced system marks a **significant milestone** in India's pursuit of **cutting-edge strategic capabilities** and could redefine the nation's role in global defense technology.



What is the ET-LDHCM?

The **ET-LDHCM** is an **indigenously developed hypersonic cruise missile** capable of **long-duration flight at extreme speeds**. Developed under a classified initiative called '**Project Vishnu**', the missile represents one of the **most ambitious defense projects** undertaken by India to date.

- **Launch Platforms:** It is designed for **multi-platform deployment**—it can be launched from **land, sea, or air**, enhancing India's **operational flexibility**.
- **Global Standing:** Once fully operational, India will join a select group of nations—including the **United States, Russia, and China**—that have developed **deployable hypersonic weapon systems**.

Key Features and Capabilities:

- **Blazing Speed:** The missile is capable of reaching speeds up to **Mach 8** (approximately **11,000 km/h**), allowing it to outrun most **air defense systems**.
- **Striking Power:** It can carry **warheads weighing between 1,000 to 2,000 kg**, suitable for both **conventional and nuclear missions**.
- **Impressive Range:** The ET-LDHCM has an estimated **strike range of 1,500 km**, enabling **deep-penetration precision strikes**.
- **Advanced Maneuverability:** Unlike traditional ballistic missiles, it travels at **low altitudes** and features **mid-flight course correction**, making it **extremely difficult to detect and intercept**.
- **Propulsion Breakthrough:** Powered by an **air-breathing scramjet engine**, the missile uses **atmospheric oxygen** for combustion, eliminating the need to carry oxidizers and enabling longer, faster flight.
- **Thermal Resistance:** Constructed with **high-grade, heat- and oxidation-resistant materials**, it can withstand temperatures exceeding **2,000°C**, which is essential for sustained hypersonic flight.

Why This Matters:

- **Deterrence Capability:** With the ET-LDHCM, India significantly enhances its **second-strike and rapid-response capabilities**, reinforcing its **nuclear deterrent posture**.
- **Strategic Edge:** The missile's **speed, stealth, and precision** can decisively shift the balance in future **high-intensity conflicts**, particularly in contested regions like the **Indian Ocean** or **border zones**.
- **Tech Milestone:** Mastering **scramjet propulsion** and hypersonic glide technologies positions India among the **technological elite** in modern warfare.

**Did You Know?**

- **Hypersonic weapons** are defined as those that travel at speeds above **Mach 5**—five times the speed of sound.
- Unlike ballistic missiles, hypersonic cruise missiles like the ET-LDHCM can **navigate around terrain** and adjust course mid-flight, making them **less predictable** and more **survivable**.
- The **scramjet engine**, short for *Supersonic Combustion Ramjet*, operates only at very high speeds and represents a **significant advancement over traditional jet engines**.

Looking Ahead:

As India readies to test the **ET-LDHCM**, this development not only reflects the nation's growing **technological prowess** but also underscores its intent to build a **robust, future-ready defense infrastructure**. In an era of **next-gen warfare**, hypersonic missiles like the ET-LDHCM are set to become **game-changers** in both deterrence and combat strategy.



Context: In a moment of diplomatic pride, the **Prime Minister of India** was recently awarded the **Grand Cross of the Order of Makarios III**, the **highest civilian honour** of the **Republic of Cyprus**. This prestigious recognition highlights the strengthening of ties between **India and Cyprus**, and acknowledges the Prime Minister's **global leadership and service to international cooperation**.



About the Order of Makarios III: Cyprus' Highest Honour

Named after **Archbishop Makarios III**, the **first President of Cyprus**, this distinguished award celebrates **exceptional service** that contributes to **Cyprus or the international community**.

- **Established** in **1991**, the order honours individuals whose work reflects **exemplary leadership**, humanitarian values, or contributions to **global peace and cooperation**.
- The **Grand Cross** is among the **topmost grades** within the Order, just below the **Grand Collar**, and is conferred by the **President of Cyprus**.
- It represents Cyprus's **highest level of gratitude** to global leaders who promote **diplomatic goodwill and international development**.

Significance of the Recognition:

Receiving the **Grand Cross of the Order of Makarios III** places the Indian Prime Minister in the esteemed company of world leaders who have been celebrated for their **visionary leadership, diplomatic outreach, and contribution to global progress**.

This recognition:

- Reflects **India's growing influence** on the world stage.
- Signals **Cyprus's appreciation** for India's **strategic partnership** and commitment to **multilateral cooperation**.
- Further strengthens the **historic and cultural ties** between the two nations.

Cyprus: A Nation at the Crossroads of Continents

Located at the **northeastern corner of the Mediterranean Sea**, **Cyprus** is a **Eurasian island nation** renowned for its **rich history, strategic importance, and cultural diversity**.

- **Capital:** Nicosia
- **Major Cities:** Limassol, Larnaca, Famagusta, and Paphos
- **Highest Peak:** Mount Olympus (1,952 m) in the Troodos Mountains
- **Third-largest island** in the Mediterranean, after Sicily and Sardinia

Cyprus is a **member of the European Union**, and despite its small size, it plays a **crucial role in regional diplomacy**, especially in the **Eastern Mediterranean**.



Did You Know?

- **Archbishop Makarios III** led Cyprus to independence in 1960 and became its **first elected president**, shaping its modern national identity.
- Cyprus is often described as the "**cradle of civilizations**" due to its **9,000-year-old history** and archaeological significance.
- The country has **two official languages: Greek and Turkish**, reflecting its **multicultural fabric**.

Honours Beyond Borders:

The conferment of the **Grand Cross of the Order of Makarios III** is more than a personal accolade—it's a testament to India's **growing global stature** and a celebration of **international friendship** built on shared values of **peace, democracy, and mutual respect**.



5 Shipki La Pass Reopens for Domestic Tourists: A Gateway to Heritage, Trade, and Strategic Importance

Context: Shipki La Pass, located at an elevation of 3,930 meters in the Kinnaur district of Himachal Pradesh, has now been opened to Indian tourists. This significant step aims to **revitalize border economies**, strengthen **strategic connectivity**, and promote **cultural tourism** in the region.



This high-altitude **motorable mountain pass** lies on the **India-China border** and is one of the **highest vehicle-accessible passes in India**. It serves as a **boundary post** on the **Line of Actual Control (LAC)** and holds immense **strategic and historical value**.

From Ancient Trade Route to Strategic Frontier:

The **Sutlej River**, known as **Langqen Zangbo** in Tibet, **enters India through Shipki La**, making it an important hydrological and geopolitical location. Historically, this pass was a part of the ancient **Indo-Tibetan trade route** that flourished for centuries.

In earlier times, **Shipki La** was called **Pema La**, or the "Shared Gate." The name was changed to **Shipki La** after the **1962 Sino-Indian War** by the **Indo-Tibetan Border Police (ITBP)**. It remained a crucial link between **India and Tibet** until trade activities were halted after the war, and later during the **Doklam standoff** and the **COVID-19 pandemic**.

The Lifeline of Ancient Himalayan Trade:

For centuries, Shipki La facilitated a **vibrant exchange of goods** between the Indian subcontinent and the Tibetan Plateau. **Imports** from Tibet included:

- Wool
- Livestock
- Yak-based products
- Sacred religious items
- Precious minerals

In return, India exported:

- Grains and spices
- Tobacco
- Wood and timber
- Iron tools and handicrafts

This trade wasn't just economic—it also fostered **cultural exchange**, spiritual ties, and **regional unity**.

Mountain Passes: Nature's Strategic Corridors:

Mountain passes like Shipki La are **natural low points** in rugged mountain terrains that **ease movement** across otherwise formidable regions. They are typically formed through **erosion**, **glaciation**, or **tectonic shifts**, serving as critical **connectors between valleys and civilizations**.

Historically, these routes have been lifelines for:

- Trade caravans



- Pilgrims
- Migratory communities
- Military campaigns

Prominent Indian passes include **Nathu La (Sikkim)**, **Rohtang Pass (Himachal Pradesh)**, **Zoji La (Ladakh)**, and **Jelep La (Sikkim)**—each with its own **strategic, economic, and cultural relevance**.

Why Shipki La Matters Today:

The reopening of Shipki La marks more than just a tourism initiative—it represents:

- A **reclaiming of India's cultural and strategic heritage**
- **Boosting local livelihoods** through tourism and infrastructure
- A renewed **focus on national security and border development**
- Potential for **reviving trans-Himalayan trade**, subject to geopolitical conditions

Did You Know?

- The region around Shipki La is home to **ancient Buddhist monasteries**, reflecting its spiritual link with Tibet.
- The nearby **village of Namgia** is the last Indian settlement before the LAC.

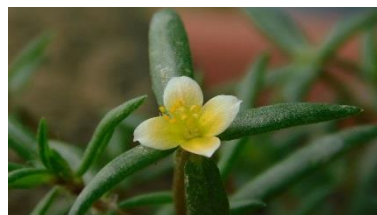
The pass lies within the **cold desert zone of the Trans-Himalayas**, where flora and fauna adapt to extreme conditions.

By opening Shipki La to Indian citizens, the government not only promotes **strategic tourism** but also rekindles the stories, spirit, and legacy of **India's ancient mountain corridors**.

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6 Discovery of *Portulaca bharat*: A Unique Flowering Plant from the Aravallis

Context: A remarkable new species of flowering plant, named *Portulaca bharat*, has been recently discovered in the rocky and semi-arid terrain of the Aravalli Hills near Jaipur, Rajasthan. This discovery adds a significant entry to the growing list of Indian endemic flora, underlining the rich but underexplored biodiversity of the Aravallis.



Key Highlights of *Portulaca bharat*:

- **Endemic to India:** This plant has so far been found **only in a single locality**, making it a **narrow endemic species**.
- **Unique Morphological Features:** *Portulaca bharat* displays **distinct physical traits** not observed in other known species of the genus.
- **Habitat Sensitivity:** Its specific **ecological requirements** make it **vulnerable to habitat degradation and climate change**.
- **Conservation Status:** As no additional populations are yet discovered, it has been **provisionally classified as "Data Deficient"** under the **IUCN Red List** guidelines.

About the Genus *Portulaca*:

- The genus *Portulaca* includes around **153 known species** across the globe.
- These are mostly **succulent plants**, adapted to survive in **extreme conditions** with **high drought resistance**.
- Known for their **water-storing tissues**, they flourish in **tropical and subtropical regions**.
- In **India**, there are currently **11 recognized species**, including **four endemic ones**, primarily inhabiting **dry and semi-arid zones**.

Why This Discovery Matters:

- *Portulaca bharat* not only enriches our **botanical heritage** but also emphasizes the importance of **microhabitats** in supporting **rare and endemic flora**.
- The discovery showcases the potential for more **undocumented species** in the Aravallis—one of the **oldest mountain ranges in the world**, often overlooked in biodiversity studies.
- It also highlights the urgency for **conservation efforts** in fragile ecosystems, especially in the face of **rapid urban expansion and climate variability**.

Did You Know?

- The name "*Portulaca*" is derived from the Latin word *portula*, meaning "little gate", referring to the lid-like structure that opens to release seeds.
- Many *Portulaca* species, such as *Portulaca oleracea* (common purslane), are edible and have **medicinal properties**.
- *Portulaca* flowers are also popular in **ornamental gardening**, thanks to their vibrant colors and drought tolerance.

A Call for Further Exploration:

The discovery of *Portulaca bharat* is a **reminder of the hidden treasures** in India's **ecological landscapes**. Continued **field research, botanical surveys, and conservation-focused studies** are essential to uncover and protect the full spectrum of India's **plant biodiversity**.

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