

SANSKRITI IAS DAILY CURRENT AFFAIRS

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Blood Falls

WION

Scientists find descendants of ancient sea creatures trapped under Antarctica's Blood Falls

Blood Falls, the strangest occurrence in Antarctica, has revealed something peculiar about itself. Scientists have for years thought that...



Why in News

- Recent research found that the **saline brine** beneath Antarctica's **Blood Falls** hosts **marine-specific microorganisms**, indicating that the subglacial brine system has a **marine origin**.

Geographical Features

- Blood Falls** is a bright red waterfall located at the edge of **Taylor Glacier, Antarctica**.
- It originates from an **underground reservoir** trapped beneath the glacier.
- The phenomenon appears as though **blood is flowing from glacial mountains**.

Recent Scientific Findings

- Scientists discovered **marine-specific microorganisms** within the subglacial brine.
- The findings indicate that the brine originated from **ancient seawater** trapped beneath the glacier.
- The exact period when the seawater became isolated beneath the glacier remains uncertain.

Scientific Explanation

- The underground water contains **high concentrations of iron and salt**.
- Cracks and fractures** within the glacier allow the iron-rich brine to reach the surface.
- The iron reacts with **atmospheric oxygen** to form **iron oxide (rust)**, producing the red colour.

- The extremely **high salinity** lowers the freezing point, preventing the water from freezing.

HYDERACENE

Why in News

- The **University of Hyderabad (UoH)** received an **Indian**

Patent for **HYDERACENE**, an indigenous dual-function material for rocket propellants and advanced defence applications.

THE New Indian Express

University of Hyderabad patents HYDERACENE for rockets and missiles

The researchers said the patented material is the outcome of nearly four years of research, although the team has been working on burn-rate...



Technological Features

- **HYDERACENE** is a novel **polymer-based material** for **solid rocket propellants**.
- Its patented chemical name is **Ferrocene Polyethylene Glycidyl Grafted Hydroxyl-Terminated Polybutadiene**.
- It was synthesised using **Ring-Opening Polymerisation**.
- The invention was developed by researchers of the **School of Chemistry, University of Hyderabad**.

Defence Relevance

- **HYDERACENE** is an indigenous alternative to the imported **BUTACENE**.
- **BUTACENE** is largely imported from **European countries**.
- The innovation supports **Atmanirbhar Bharat** in aerospace and defence technologies.
- It is intended for **high-performance rocket propulsion systems**.

Strategic Significance

- Conventional propellants require separate **binder** and **catalyst** components.
- **HYDERACENE** performs as both a **binder-cum-catalyst**.
- It improves **combustion efficiency** and **long-term propellant stability**.

- It prevents catalyst separation during storage.
- It enhances controlled burning in **solid rocket motors**.

Hexavalent Vaccine

TH The Hindu

Hexavalent vaccine could improve India's immunisation programme: Study

A study suggests the hexavalent vaccine could enhance India's immunisation efficiency by reducing injections and easing healthcare burdens.



Why in News

- A **Union Health Ministry** study recommended introducing the **Hexavalent Vaccine** into India's **Universal Immunisation Programme (UIP)** to improve childhood immunisation efficiency.

Vaccine Profile

- The **Hexavalent Vaccine** is a **six-in-one combination vaccine** for infants.
- It combines **six antigens** into a single injection.
- It protects against **Diphtheria, Tetanus, Pertussis, Hepatitis B, Polio, and Haemophilus influenzae type b (Hib)** infections.

Governance Dimensions

- It reduces the number of injections administered to infants.
- It lowers **cold-chain storage** requirements.
- It decreases the consumption of syringes and vaccination supplies.
- It reduces the workload of **Auxiliary Nurse Midwives (ANMs)**.
- It eases the responsibilities of vaccine managers and cold-chain handlers.

Public Health Benefits

- It shortens immunisation visits for parents and caregivers.
- It improves programme efficiency under **UIP**.
- It supports better vaccine acceptance through fewer injections.

Indian Pharmacopoeia Commission (IPC)

BW BW Healthcare World

WHO SEARN Recognises IPC As Regional Centre Of Excellence

The Indian Pharmacopoeia Commission (IPC) has been recognised by the World Health Organization South-East Asia Regulatory Network (WHO...



Why in News

- The **Indian Pharmacopoeia Commission (IPC)** has been recognised as the **WHO-SEARN Regional Centre of Excellence in Pharmacovigilance and Technical Centre in Quality**.

Institutional Profile

- IPC** is an autonomous institution under the **Ministry of Health and Family Welfare**.
- It is responsible for prescribing **drug quality standards** in India.
- Headquarters: Ghaziabad, Uttar Pradesh.**



Functions

- It publishes the **Indian Pharmacopoeia (IP)** and **National Formulary of India (NFI)**.
- It prescribes standards for the **identity, purity, and strength** of medicines.
- It provides **Indian Pharmacopoeia Reference Substances (IPRS)** for quality testing.

WHO-SEARN

- WHO South-East Asia Regulatory Network (SEARN)** was established in **2016** by **WHO-SEARO**.
- It strengthens regulatory systems through **quality assurance, pharmacovigilance, clinical trials, medical devices**, and regulatory cooperation.

Lalit Kala Akademi



Pib.gov.in

<https://www.pib.gov.in> > PressReleasePage

LALIT KALA AKADEMI CELEBRATES ITS 72nd ...

2 days ago — Lalit Kala Akademi, the National Academy of Art under the Ministry of Culture, Government of India, celebrated its 72nd Foundation Day today ... [Read more](#)

Why in News

- Lalit Kala Akademi celebrated its 72nd Foundation Day at Rabindra Bhavan, New Delhi.

Institutional Profile

- It was inaugurated on 5 August 1954 by Maulana Abul Kalam Azad.
- It became a statutory authority in 1957 under the Societies Registration Act, 1860.
- It functions under the Ministry of Culture.
- Headquarters: New Delhi.

Important Facts

- It functions through the General Council, Executive Board, and other committees.
- Its regional centres are located at Chennai, Lucknow, Kolkata, Bhubaneswar, and Garhi.
- The National Exhibition of Art is its flagship annual event.

Functions

- It promotes visual arts through exhibitions, workshops, scholarships, publications, and research.
- It preserves collections of modern, contemporary, folk, and tribal art.
- It promotes Indian visual arts through Cultural Agreements and Cultural Exchange Programmes.

Nagarjuna Sagar Dam

TH The Hindu

'Varuna Yagam' to be performed at Nagarjunasagar on August 10

A 'Varuna Yagam' for abundant rainfall and reservoir replenishment will be held at Nagarjunasagar on August 10.



Why in News

- Nagarjuna Sagar Dam, one of India's major multipurpose river valley projects, recently completed 59 years of operation.

Location & Features

- It is built across the Krishna River between Telangana and Andhra Pradesh.
- It is the largest and highest masonry dam in the world.
- The dam derives its name from Nagarjunakonda, associated with the Buddhist scholar Acharya Nagarjuna.
- It is 150 m high, 1.6 km long, and has 26 gates.

Significance

- It has a storage capacity of about 11,472 million cubic metres and irrigates around 9.81 lakh acres.
- It supports irrigation, hydroelectric power generation, and contributes electricity to the national grid.
- The reservoir forms the third-largest man-made lake in the world.

Governance

- Construction began in 1956 and was completed in 1967.
- Under the Andhra Pradesh Reorganisation Act, 2014, the dam is controlled and supervised by Telangana.
- It remains a crucial irrigation source for both Telangana and Andhra Pradesh.

Other Important News of the day

Places in
News

Lesotho

Why in News

- India and **Lesotho** reviewed bilateral relations during the **6th India–Lesotho Joint Bilateral Commission for Cooperation (JBCC)** meeting held in **New Delhi**.

Geographical Profile

- Lesotho** is an **enclaved country** completely surrounded by **South Africa**.
- Its capital is **Maseru**.
- It is the **only independent country** entirely situated above **1,400 metres** elevation.
- The country lies on the **Southern African Plateau** with elevations up to **3,480 metres**.



Physical Features

- Major mountain systems include the **Drakensberg Range** and **Maloti Range**.
- Thabana Ntlenyana** is the country's highest peak.
- The **Orange River** originates in the **Lesotho Highlands** as the **Singu River**.
- The country's climate is **temperate** despite its location in Southern Africa.
- Both the **Indian Ocean** and **Atlantic Ocean** influence its climatic conditions.

Environment

Hippocampus amandavinctae

TH The Hindu

New seahorse species identified by Kerala researchers

Marine researchers claimed to have solved a 150-year-old taxonomic confusion regarding the identity of the thorny seahorse, *Hippocampus*...



Why in News

- Scientists identified *Hippocampus amandavinctae* as a new seahorse species after distinguishing it from *Hippocampus histrix*.

Taxonomic Profile

- *Hippocampus amandavinctae* is a newly identified seahorse species.
- It was recorded off the southwest coast of Kerala.
- The discovery increases Kerala's known seahorse diversity to five species.
- Seahorses belong to the genus *Hippocampus* and are closely related to pipefishes.

Habitat & Distribution

- Seahorses occur in temperate and tropical waters worldwide.
- They inhabit coral reefs, mangroves, seagrass beds, and estuaries.
- They cling to vegetation and corals using their prehensile tails.
- At least 50 seahorse species are recognised globally.

Unique Biological Features

- Seahorses possess a horse-like head, independently moving eyes, and a brood pouch.
- Their bodies are covered by rings of bony plates instead of scales.

	• They swim vertically using the dorsal fin and steer with pectoral fins. • A swim bladder regulates their vertical movement in water. • They are carnivorous, feeding mainly on small crustaceans and invertebrates. • They exhibit excellent camouflage by changing body colour.
Awards in News	Jeevan Raksha Padak  News On AIR <u>Union Minister Nitin Gadkari confers Sarvottam Jeevan Raksha Padak on 12 rat miners for Silkyara Tunnel rescue</u> Union Road Transport and Highways Minister Nitin Gadkari conferred the Sarvottam Jeevan Raksha Padak to 12 rat miners for their exceptional...  Why in News • The Sarvottam Jeevan Raksha Padak was conferred on 12 rat miners for their exceptional bravery during the Silkyara Tunnel Rescue Operation. Award Profile • Jeevan Raksha Padak honours individuals for life-saving acts during accidents, natural disasters, animal attacks, and mine rescue operations. • It comprises three categories—Sarvottam Jeevan Raksha Padak, Uttam Jeevan Raksha Padak, and Jeevan Raksha Padak. Eligibility & Selection • The award is open to all citizens, including personnel of the Armed Forces, Police, Fire Services, CAPFs, and CPOs for acts beyond normal duty.

	- Nominations are invited annually from States/UTs and Union Ministries. - Final approval is accorded by the Prime Minister and the President of India. Award Features - Awardees receive a Medal, Certificate, and one-time cash award of ₹2 lakh, ₹1.5 lakh, or ₹1 lakh depending on the category. - The award does not carry additional benefits such as railway or airfare concessions.
Science and Technology	Pigeonpea ThePrint ICAR has made the world's first complete map of pigeonpea genome. Big in pulse research This is not the first time ICAR is studying the pigeonpea genome. The National Institute for Plant Biotechnology began studying pigeonpea in...  Why in News ICAR developed India's first fully annotated Telomere-to-Telomere (T2T) reference genome for Pigeonpea (Cajanus cajan L. Millsp.) variety 'Asha'. Agricultural Profile Pigeonpea is popularly known as Arhar or Tur. - Its scientific name is Cajanus cajan L. Millsp. - It is a legume and one of India's major protein-rich pulse crops. - It is primarily cultivated in the semi-arid tropical regions of India. Cultivation Requirements - It requires 600–650 mm annual rainfall with moist early growth and dry flowering conditions.

- It grows best at **26–30°C** during the rainy season and **17–22°C** after the rainy season.
- **Sandy loam** and **loam soils** are most suitable for cultivation.
- Low solar radiation during pod development reduces pod formation.
- The crop is widely grown under **intercropping systems**.

Importance & Diseases

- It has a **low glycaemic index** and is rich in **thiamine, riboflavin, niacin, folate, Vitamin A, calcium, zinc, iron and magnesium**.
- Major diseases include **Wilt, Sterility Mosaic Disease, Phytophthora blight, Alternaria blight, and Powdery mildew**.
- Major producing states include **Uttar Pradesh, Madhya Pradesh, West Bengal, Bihar and Jharkhand**.
- **India** is the world's largest producer of pigeonpea.
- Pigeonpea belongs to the **Fabaceae** family.

Uttar Pradesh in News

Uttar Pradesh Plans AVGC–XR Park in Jewar

 Moneycontrol.com

After airport and Film City, YEIDA plans animation and gaming park near Jewar

The Yamuna Expressway Industrial Development Authority (YEIDA) has initiated plans to develop an AVGC–XR (Animation, Visual Effects, Gaming,...



Why in News

- The **Uttar Pradesh Government** plans to establish an **Animation, Visual Effects, Gaming, Comics and Extended Reality (AVGC–XR) Park** in **Jewar** to promote the digital creative industry and employment.

Infrastructure & Development

- The park will be developed by the Yamuna Expressway Industrial Development Authority (YEIDA) near the Noida International Airport and the proposed International Film City.
- It will include animation & VFX studios, game development centres, motion capture, virtual production units, and AI, VR/AR laboratories.

Economic Significance

- The project is expected to attract domestic and global technology firms, investors, and AVGC-XR companies.
- It will generate high-skilled employment and strengthen Uttar Pradesh's digital creative economy.

Innovation & Strategic Importance

- The park will feature incubation centres and co-working spaces to promote startups and innovation.
- AVGC-XR technologies will support sectors such as entertainment, education, healthcare, defence, tourism, and industrial training.
- The project is part of YEIDA's vision to develop the Yamuna Expressway region as a major industrial and digital corridor.