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History, Art and Culture

7th Century Inscription Found in Davangere

Archaeologists recently discovered a 7th-century AD inscription at Madapura Lake in Nyamati taluk, Davangere district.

• **Old Kannada Script -** The five-foot-long inscription features 17 lines written in the ancient Old Kannada script.

• **Reign of Vikramaditya I -** The inscription is attributed to the rule of Vikramaditya I of the Badami Chalukya dynasty (654-681 AD).

• **Vikramaditya I's Rule -** Vikramaditya I, son of Pulakesin II, restored stability after a period of turmoil and successfully defended against Pallava invasions, reclaiming Vatapi.

• **Administrative and Social Insights -** The inscription offers crucial details about the administration and social organization prevalent during that era.

• **Tax Waiver and Land Donation -** It records a tax waiver for villagers by officer Singhavenna and a six-acre land donation for lake construction, highlighting welfare and early landholding.

ASI to Expand Underwater Archaeology Wing

Recently, Archaeological Survey of India (ASI) have decided to expand its Underwater Archaeology Wing (UAW) following its revival, focusing on exploring submerged cultural sites, including those in Maharashtra.

• **Premier Archaeological Agency** - The ASI is India's primary government agency responsible for the research, protection, preservation, and conservation of the nation's cultural heritage.

• **Historical Foundation** - Founded in 1861 by Alexander Cunningham under Lord Canning, the ASI was revived as a separate department in 1871, with Cunningham as its first Director-General, and is headquartered in New Delhi.

• **Aims and Core Functions** - The ASI aims to protect and conserve ancient monuments, conduct excavations (including underwater), maintain over 3,600 monuments, and publish research findings.

• **Underwater Exploration Focus** - Through its UAW, the ASI explores submerged heritage along coastlines and inland water bodies, now with renewed emphasis and expansion plans.

• **Collaborative Research Efforts** - The ASI collaborates with state departments, the Indian Navy, IITs, and international organizations to advance archaeological research, including underwater investigations.

Polity & Governance.

NH-6 Greenfield Corridor Approved

Recently, Centre has cleared the Greenfield NH-6 corridor, a vital infrastructure project linking Meghalaya and Assam.

• **Strategic Northeast Connectivity** - The Shillong–Silchar 4-lane access-controlled corridor aims to significantly enhance connectivity in the Northeast region.

• **Hilly Terrain** - Spanning 166.80 km, the corridor will navigate mostly hilly terrain in both states.

• **Connectivity** - It will connect Mawlyngkhung near Shillong in Meghalaya to Panchgram near Silchar in Assam.

• **Objective** - It aims to significantly boost connectivity in the Northeast, reduce travel time between Guwahati and Silchar, and improve logistics and economic development in the region. The travel time is expected to reduce from 8.5 hours to just 5 hours.

• **Features** - The highway will be a high-speed corridor with 19 major bridges, 153 minor bridges, 326 culverts, 22 underpasses, 26 overpasses, and 34 viaducts.

NHRC Addresses Kerala Jail Conditions

18. National Human Rights Commission (NHRC) has taken suo motu cognizance of reports highlighting poor infrastructure and staff shortages in Kerala jails, impeding inmates' access to education.

• **NHRC** - The NHRC is an independent statutory body in India established to safeguard and promote human rights, encompassing the rights to life, liberty, equality, and dignity of individuals.

• **Establishment and Legal Basis** - The NHRC was established on October 12, 1993, under the Protection of Human Rights Act, 1993, which was later amended in 2019.

• **Status and Headquarters -** It is a statutory, autonomous, and non-constitutional body with its headquarters located in New Delhi, India.

• **Composition of the Commission -** The NHRC is composed of a retired Chief Justice of India as its Chairperson, along with several members including judges, experts in human rights, and ex-officio heads of various National Commissions.

• **Mandate and Focus** - The NHRC's mandate includes addressing human rights violations and ensuring the protection and promotion of fundamental rights, as evidenced by its recent action concerning the conditions in Kerala jails.

Environment

European Red Admiral Sighted in India

European Red Admiral butterfly (Vanessa atalanta) has been documented for the first time in India, near Dharamshala in the Dhauladhar range.

• **Himachal's Butterfly Diversity Expands -** This sighting increases the recorded butterfly species in Himachal Pradesh to 440, highlighting the region's ecological significance.

• **Migratory Species -** The European Red Admiral is known for its long migratory journeys across Europe and North America.

• **Historical Absence in India -** This marks the first confirmed sighting in India, with the last South Asian record in Balochistan in 1929 and a 2022 rediscovery in Pakistan.

• **Identification Key Differences -** The European species has a narrower, deeper red band and a distinct spot on the upper forewing, differentiating it from the similar Indian Red Admiral.

• **Potential Range Expansion -** The sighting suggests a possible eastward expansion of the butterfly's Eurasian range, potentially aided by local climate and the presence of its larval food plant, stinging nettle.

Security

SAREX-22 Held in Chennai

Recently, Indian Coast Guard (ICG) conducted its 10th National Maritime Search and Rescue Exercise, SAREX-22, in Chennai. The drill involved various national organizations and 24 observers from 16 friendly foreign nations.

• **ICG Chief's Assessment -** ICG Chief VS Pathania reviewed the exercise, which aimed to test preparedness for maritime emergencies.

• **Emergency Rescue Demo -** An ICG Dornier aircraft demonstrated crucial techniques for rescuing passengers from distressed ships and aircraft, showcasing their operational capabilities.

• **Focus on Passenger Safety -** The biennial exercise centered on "Capacity Building Towards Marine Passenger Safety," underscoring the commitment to aid during major emergencies within and beyond India's ISRR.

• **SOPs and MRO Verification -** SAREX-22, spanning two days (August 27-28), aimed to validate Standard Operating Procedures (SOPs) and best practices for executing mass rescue operations (MRO).

Science

Shiv Shakti Point: Primitive Mantle Site

Recently, Scientists from Physical Research Laboratory (PRL) have identified the Shiv Shakti point on the Moon as significant for studying its primitive mantle. This is the landing site of India’s Chandrayaan-3 mission.

• **Chandrayaan-3 Landing Site -** Located in the Moon’s southern high-latitude highlands, the Shiv Shakti point marks India's first successful lunar landing site.

• **Potential for Early Moon Study -** This location is now recognized as a potential source of primordial lunar mantle materials, crucial for understanding the Moon's origins and evolution.

• **APXS Role in Analysis -** The Pragyan rover's Alpha Particle X-ray Spectrometer (APXS) was instrumental in this research, enabling in-situ analysis of lunar samples.

• **Volatile Element Concentrations -** Analysis at Shiv Shakti point revealed higher sulfur levels compared to previous missions, alongside lower concentrations of sodium and potassium.

• **Implications for Lunar History -** These elemental findings offer valuable insights into the Moon's early geological history and the composition of its primitive mantle.

Neuralink's Breakthrough FDA Designation

Neuralink, Elon Musk's neurotech firm, recently received FDA Breakthrough Device Designation for its brain-chip aimed at restoring communication for those with severe speech impairments.

• **FDA's Breakthrough Devices Program -** This FDA initiative accelerates the development and approval of medical devices offering more effective treatment for life-threatening conditions, ensuring quicker patient access.

• **Blindsight Chip for Vision Restoration -** Neuralink is also developing the Blindsight chip, an experimental device bypassing the eyes to directly stimulate the visual cortex, potentially restoring sight in completely blind individuals.

• **Technology: Ultra-Fine Electrodes -** Neuralink's devices use 1,024 ultra-fine electrodes to detect neural activity and transmit signals to a computer, which AI then decodes into intended movements.

• **Profound Impact on Speech Impairment -** This technology holds significant potential to improve the quality of life for individuals with conditions like ALS, restoring their ability to communicate and fostering emotional connections.

• **Future "Telepathy" and Beyond -** Neuralink envisions future applications enabling paralyzed individuals to control digital devices with their thoughts, a project dubbed "Telepathy," promising greater autonomy.

Economics

Goldsikka's Revolutionary AI Gold ATM

Recently, Hyderabad-based Goldsikka has introduced a pioneering AI-powered Gold-Melting ATM, set to redefine gold transactions across India. This automated machine offers a comprehensive suite of gold-related services.

• **Automated Multi-Service Gold Transactions -** The innovative ATM allows users to seamlessly buy, sell, exchange, lease, digitize, and monetize gold, all without human intervention, ensuring efficiency and convenience.

• **Futuristic AR Jewellery Experience -** Integrating Augmented Reality, the ATM provides a unique feature enabling users to virtually try on jewellery before making a purchase, offering a modern and engaging experience.

• **Advanced Features and Functionality -** The ATM facilitates gold buying and deposit, on-site melting and purity testing, instant real-time valuation, and direct bank transfers within 30 minutes upon user confirmation.

• **Enhanced AI-Powered Security -** Equipped with robust AI-based security measures, the ATM employs Aadhaar verification, ID proof checks, user photo capture, and automatic flagging of suspicious activities with police alerts.

• **Goldsikka's Vision and Objective -** Goldsikka aims to enhance transaction convenience, minimize human interaction, provide secure and fast automated gold services, and boost financial inclusion by enabling gold asset monetization and digitization.

Geography

Heavy Rainfall and Storms Hit North India

strong Western Disturbance caused significant rainfall and storms across North and South India, leading to floods, hail, and airport disruptions in Delhi.

• **Climate Change Impact on WDs** - Recent studies indicate that climate change is altering the frequency, intensity, and seasonal patterns of Western Disturbances, leading to unpredictable weather in India.

• **What are Western Disturbances?** - Western Disturbances are eastward-moving extra-tropical cyclones originating over the Mediterranean, Caspian, and Black Seas, bringing winter precipitation to northern India.

• **Formation of WDs** - WDs form through the interaction of polar and tropical air masses and travel along the subtropical westerly jet stream, often associated with low-pressure areas.

• **Impact on India's Weather** - WDs provide crucial winter rainfall for Rabi crops, moderate summer heat, but also trigger extreme weather events like hailstorms and flash floods, particularly in the Himalayas.

• **Disruptions and Monsoon Influence** - WDs can cause aviation and transport disruptions in cities like Delhi and can also alter pre-monsoon and monsoon rainfall patterns, sometimes intensifying precipitation.

SHANKAR IAS PARLIAMENT
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