



18 May, 2024

Stone Age or Wood Age

Context: Recent research suggests that the Stone Age, traditionally characterised by the use of stone tools by humans and our ancestors, could be more accurately labeled as the 'Wood Age'.

➤ Recent Discovery of Wooden Artefacts in Schöningen, Germany

- A recently published study examined wooden artefacts dating back 300,000-400,000 years excavated from a coal mine in Schöningen, Germany.
- These artefacts were not merely "sharpened sticks" but technologically advanced tools requiring skill, precision, and time to construct.
- The study, published in the journal Proceedings of the National Academy of Sciences, identified 187 wooden artefacts showcasing a variety of wood-working techniques such as splitting, scraping, and abrasion.

➤ Periodisation of Human Prehistory

- The term "history" began with the advent of writing, while everything before that is considered "prehistory" and studied primarily through archaeological evidence.
- Danish archaeologist Christian Jürgensen Thomsen introduced the periodisation of human prehistory into Stone Age, Bronze Age, and Iron Age based on technological advancement.
- The Stone Age, which comprises 99% of human history, is divided into Palaeolithic, Mesolithic, and Neolithic periods.

➤ Reasons for Preservation Bias in Prehistoric Studies

- Archaeological evidence forms the basis of Stone Age classification, but preservation bias distorts our understanding of antiquity.
- - Despite evidence of stone tools, evidence of other materials such as wood is limited due to deterioration over time.
- The absence of wooden remains from the Palaeolithic period does not necessarily indicate that wood was not used.

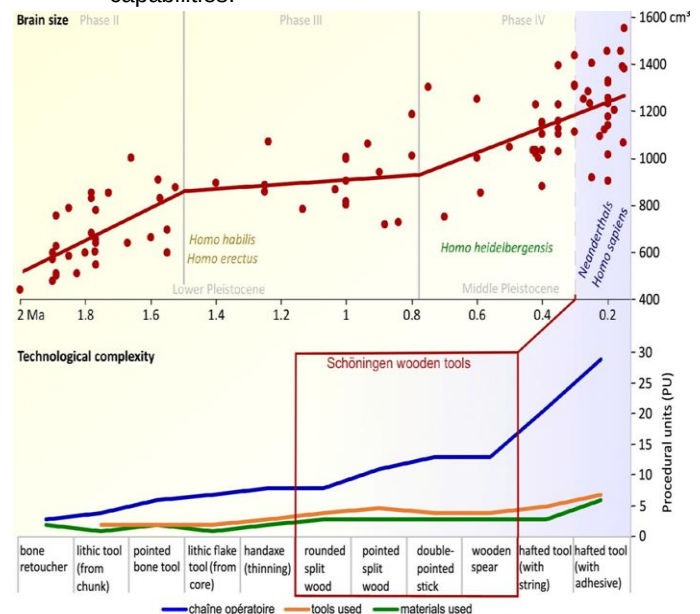
➤ Importance of Schöningen Discoveries

- Schöningen's damp and oxygen-less soil conditions led to the exceptional preservation of prehistoric wooden artefacts.
- The site's well-preserved wooden tools, including hunting weapons and domestic tools, provide insights into pre-modern human capabilities.
- The discovery of the world's oldest preserved hunting weapons challenges previous assumptions about early human behaviour and culture.

➤ Technological Complexity of Wooden Artefacts

- Advanced imaging techniques, such as 3-D microscopy and micro-CT scanners, revealed signs of wear and cut marks on wooden artefacts.

- Wooden spears showed evidence of splitting wood and resharpener after breakage, indicating repair and recycling into new tools.
- The findings from Schöningen highlight the importance of wood as a raw material and pre-modern humans' sophisticated woodworking capabilities.



Synchrotron

Context: China's High Energy Photon Source (HEPS), Asia's first fourth-generation synchrotron light source, will start operating by the year's end.

➤ Introduction to Synchrotron:

- Synchrotron is a cyclic particle accelerator derived from the cyclotron.
- It operates by guiding a particle beam along a closed-loop path with a magnetic field that increases with time to synchronize with the particles' increasing kinetic energy.
- Synchrotron accelerators facilitate large-scale facilities due to the separation of bending, beam focusing, and acceleration components.

➤ Types of Synchrotron Machines:

- Storage Ring: Maintains constant kinetic energy of particles.
- Synchrotron Light Source: Generates electromagnetic radiation in a storage ring for experimental stations.
- Cyclic Collider: Includes intersecting storage rings for particle collisions.

➤ Principle of Operation:

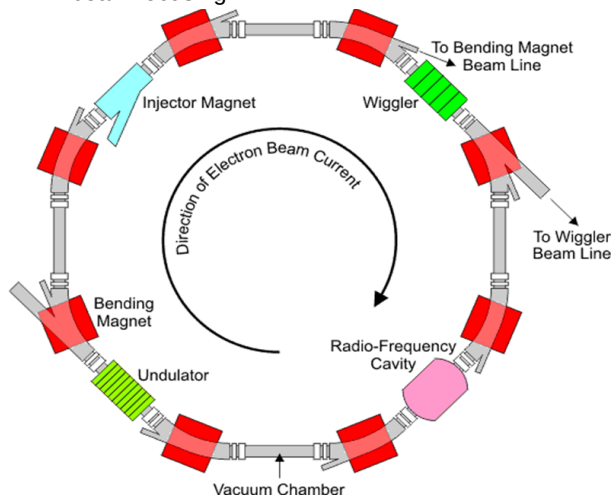
- Adaptation of magnetic field strength over time allows for particle acceleration while maintaining a constant circulation path.

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- Strong focusing principle separates the accelerator into components with specialized functions along the particle path.
- Components include radio frequency cavities for direct acceleration, dipole magnets for particle deflection, and quadrupole/sextupole magnets for beam focusing.



➤ Application in Large-Scale Facilities:

- Synchrotrons enable the construction and operation of modern large-scale accelerator facilities like colliders and synchrotron light sources.
- Straight sections along the closed path accommodate radio frequency cavities, particle detectors, and photon generation devices.

➤ Injection Procedure:

- Synchrotrons require pre-accelerated particle beams for injection.
- Pre-acceleration can be achieved through linacs, microtrons, or other synchrotrons.
- Dipole magnet field strength is adjusted for injection and subsequent acceleration cycles.

➤ Synchrotrons in Large-Scale Facilities:

- Examples include the Bevatron and Cosmotron, early large synchrotrons.
- The Tevatron and Large Hadron Collider (LHC) are notable modern synchrotrons used for high-energy particle collisions.

➤ Applications of Synchrotron Radiation:

- Synchrotron radiation finds applications in various fields including life sciences, drug discovery, medical imaging, and semiconductor material analysis.

- Facilities like the European Synchrotron Radiation Facility (ESRF) and Advanced Photon Source (APS) contribute to cutting-edge research globally.

Rules for political parties to use state-funded media during polls

Context: Opposition leaders Sitaram Yechury and G Devarajan were asked to amend their speeches aired on Doordarshan and All India Radio ahead of the ongoing Lok Sabha elections.

➤ Allocation of Time on State Media:

- Since the 1998 Lok Sabha elections, recognised political parties have been granted access to state-owned television and radio during polls.
- The Election Commission of India (ECI) decides the amount of time allotted to each recognised national and state party before the election campaign begins.
- National parties collectively receive a minimum of 10 hours of telecasting time on Doordarshan's national channel and 15 hours on its regional channels. They also get 10 hours of broadcasting time on the national hook-up of AIR and 15 hours on regional AIR stations.
- State parties collectively receive a minimum of 30 hours of telecasting time on the appropriate regional Doordarshan channel and AIR radio station.

➤ Guidelines on Speeches' Contents:

- Parties and their speakers are required to submit transcripts of their speeches three to four days before recording, which must be approved by the concerned authorities in the respective AIR and Doordarshan stations.
- The ECI's guidelines prohibit various forms of content, including criticism of other countries, attacks on religions or communities, obscene or defamatory language, incitement of violence, contempt of court, aspersions against the integrity of the President and judiciary, remarks affecting the unity, sovereignty, and integrity of the nation, and criticism by name of any individual.

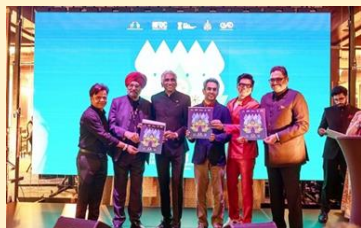
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NEWS IN BETWEEN THE LINES

India International Film Festival



Recently, the Information and Broadcasting Secretary Sanjay Jaju unveiled the official poster of 55th India International Film Festival, IFFI at the 77th Cannes Film Festival in France.

About India International Film Festival:

- The International Film Festival of India (IFFI) is a **yearly event** that showcases **cinematic excellence** and **promotes cultural exchange**.
- It has been held **annually in Goa since 2004** and is jointly **organized by the Government of Goa and the Ministry of Information and Broadcasting**.
- The festival was established in **1952** by the Government of India's Films Division with the support of India's first Prime Minister.
- It is one of Asia's most important film festivals and is accredited by the **International Federation of Film Producers Associations (FIAPF)**.
- It is one of only 14 festivals worldwide to receive this accreditation, along with Cannes, Venice and Berlin.
- The festival's **first edition was held in Mumbai in 1952** and has since been held in **Delhi, Madras, Trivandrum and Calcutta**.
- The **55th IFFI will be held in Goa from November 20–28, 2024**.

Courtallam Falls



Recently, water surged through the Old Courtallam falls amidst a sudden downpour, leading to flash floods in Tamil Nadu.

About Courtallam Falls:

- Courtallam is located at the **Western Ghats** in the Tenkasi district of Tamil Nadu.
- The falls are also **known as the "Spa of South India"** due to the believed health benefits of bathing in their waters.
- The famous waterfalls on rocks and tiny droplets are sprinkled in the air.
- The falls have a height of about **60 meters** (approximately 200 feet).
- The water falls of Courtallam have medicinal value as they run through forest and herbs before their decent.
- The falls are fed by the **Chittar River**, which is a **tributary of the Tamiraparani River**.

Deda Method



Recently, a Muria tribe, originally from Chhattisgarh and now residing in the dense forests of the Godavari Valley, has been observed practicing the 'deda' method of farming.

About Deda Method:

- The Deda Method is a **traditional, eco-friendly method of preserving seeds** used by the **Muria tribes of Chhattisgarh**, also known as **Gutti koyas**.
- The **method involves preserving seeds in leaves** and packing them almost airtight to make them look like boulders from a distance.
- The packaged seeds are then **woven with Siali leaves**, also known as "**addakulu**", to make a deda, which **has three layers**.
- In the first layer, **wood ash is spread inside the Siali leaves**.
- Later, the ash is **covered with lemon leaves** to form a casing, and, lastly, the seeds are preserved inside the **casing and sealed**.
- The deda **method guarantees protection of seed from pests and worms**.
- In this method, the **stored seeds can be used for cultivation for up to five years**.

Personality in News Sukhdev Thapar



Recently, Sukhdev Thapar was remembered on his birth anniversary.

Sukhdev Thapar (15 May 1907 – 23 March 1931)

Sukhdev Thapar, an Indian freedom fighter who fought against the British government for the freedom of India was born in Ludhiana, Punjab, British India.

Contributions:

- He became an **active participant in the Indian freedom struggle** during his college years.
- He was a **member of the Hindustan Socialist Republican Association (HSRA)**, a revolutionary organization **led by Bhagat Singh and Chandrashekhar Azad**.
- He was involved in **acts of sabotage against the British government**, including the Lahore Conspiracy Case.
- Along with other revolutionaries, **he started Naujawan Bharat Sabha in 1926**.
- The day is celebrated as **Shaheed Diwas or Martyrs' Day** in India, honouring the memory of Sukhdev Thapar, along with **Bhagat Singh and Shivaram Rajguru**, who were all executed on **23 March 1931** for their roles in the Lahore Conspiracy Case.

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Place in News

Mongolia

Recently, the 12th Joint Working Group meeting between the Defence Ministries of India and Mongolia concluded today in Ulaanbaatar, Mongolia.

Mongolia (Capital: Ulaanbaatar)

Location: Mongolia is a **landlocked country** in East Asia.

Political Boundaries: Mongolia shares its borders with **Russia** (North) and **China** (East, West and South).

Physical Features:

- The highest point in Mongolia is **Khoten Peak** (also known as Khuiten Peak or Nayramdal Peak), which is part of the Tavan Bogd massif in the **Altai Mountains**.
- The **Gobi Desert** is one of the largest deserts in the world and extends across southern Mongolia and northern China.
- The major rivers in Mongolia are the **Selenge** (the largest river in Mongolia), **Orkhon**, **Tuul** and **Kherlen**.

Membership: Mongolia is a member of several international organizations, including the **United Nations (UN)**, **World Trade Organization (WTO)**, **International Monetary Fund (IMF)**, **World Bank**, **Asian Development Bank (ADB)** and the **Shanghai Cooperation Organisation (SCO)** as an observer state.



POINTS TO PONDER

- Which governmental resolution led to the creation of the National Pharmaceutical Pricing Authority (NPPA) which has recently cut down prices of various medicines related to asthma, diabetes, blood pressure, etc. – **A government of India resolution in 1997**
- Which constitutional amendment accorded Constitutional Status to the National Commission for Backward Classes (NCBC) by inserting Article 338B? – **102nd Constitution Amendment Act**
- Which constitutional amendment removed the right to property as a fundamental right and made it a constitutional right under Article 300A? – **44th Constitutional Amendment (1978)**
- How many member states are part of the South Asian Association for Regional Cooperation (SAARC) which was established in 1985, through SAARC Charter in Dhaka? – **8 (India, Bhutan, Bangladesh, Afghanistan, Nepal, Pakistan, Sri Lanka and Maldives)**
- What is the name of the upcoming NASA mission scheduled to be launched from New Zealand on May 22?
– **PREFIRE (Polar Radiant Energy in the Far-InfraRed Experiment)**

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