

Prelim Bits 11-09-2021 | UPSC Daily Current Affairs

Porunai/Thamirabarani River Civilisation

Tamil Nadu Chief Minister announced that the Porunai/Thamirabarani civilisation dates back to 3,200 years (1155 BC).

- This age was determined using carbon dating analysis of rice with soil found in a burial urn at Sivakalai, Thoothukudi district, Tamil Nadu.
- Tamil Nadu Chief Minister said archaeological excavations would be carried out in other States and countries in search of Tamil roots.
- Tamil Nadu Archaeology Department would conduct research at Quseir al-Qadim and Pernica Anekke (Egypt) as well as in Khor Rori (Oman), to establish the **Tamils' trade relations** with these countries.
- Already, potsherds bearing Tamil scripts have been found in these countries.
- Studies would also be conducted in Southeast Asian countries, such as Indonesia, Thailand, Malaysia and Vietnam, where **King Rajendra Chola** had established supremacy.

Thamirabarani River

The literary community has hailed the Tamil Nadu government for calling the Thamirabarani River by its historical name 'Porunai.'

- About Thamirabarani Thamirabarani River is the only major perennial river in Tamil Nadu.
- It is the state's shortest river that originates from the Agastyarkoodam peak of Pothigai hills of the Western Ghats, Tamil Nadu.
- It empties into the sea at the Gulf of Mannar after passing through Tirunelveli and Thoothukudi districts.
- **Naming** Thamirabarani River was historically called Porunai, Than Porunai, Porunal and Poruntham in Tamil literature from the Sangam era to Nayakar era (6th century BCE to 17th century CE).

Amaravathi River flowing in Chera region has been called Aan Porunai and Than Aan Porunai.

• Both Than Porunai and Aan Porunai find a place in Tholkappiam, an ancient treatise on Tamil grammar.

Other Names of Thamirabarani

Than Porunai Porunai 'Than Poruntham' in a song about 'a very cold river' Mentioned in the Tamil Literature

Purananuru Kamba Ramayanam

Periya Puranam

- The word 'Than Porunai' evolved into 'Tamira Porunai' before becoming 'Thamirabarani'.
- Porunai is a non-Sanskritised word and the right pure Tamil word, which should replace the word 'Thamirabarani'.

Data from Chandrayaan-2

ISRO released the information gathered by the scientific payloads on board the Orbiter of Chandrayaan-2, India's 2nd mission to the Moon.

The Chandrayaan-2 had an orbiter, lander and rover.

Lander and rover malfunctioned in the final moments and crash-landed, getting destroyed in the process.

But, the Orbiter part of the mission has been functioning normally. Through different methods, the 8 instruments of the Orbiter carried out broad tasks.

- Water The presence of water on the Moon had already been confirmed by Chandrayaan-1 (2008).
- Previously, water was known to be present mainly in the polar regions of the Moon.
- Chandrayaan-2 has found signatures of water at all latitudes, although its abundance varies from place to place.
- Imaging Infra-Red Spectrometer (IIRS) on board Chandrayaan-2 has distinguished between hydroxyl and water molecules, and found unique signatures of both.
- Water ice Dual Frequency Synthetic Aperture Radar, a microwave imaging instrument, studied the subsurface features of the Moon.
- It has detected signatures of the sub-surface water-ice and potential water ice at the poles.
- **Minor Elements** By measuring the Moon's X-ray spectrum, Large Area Soft X-Ray Spectrometer (CLASS) has detected the minor elements for the first time through remote sensing.
- CLASS has detected sodium, chromium and manganese on the Moon.
- **Studying the Sun** Solar X-ray Monitor (XSM) payload studied the Moon through the radiation coming in from the Sun.
- XSM has also collected information about micro solar flares outside the active region for the first time.
- **CHACE-2** Mass spectrometer CHandra's Atmospheric Compositional Explorer 2 (CHACE 2) conducted first-ever in-situ study of the composition of the lunar neutral exosphere from a polar orbital platform.
- It detected and studied the variability of the Argon-40 at the middle and higher latitudes of the Moon, depicting the radiogenic activities in the mid and higher latitudes of the Lunar interior.

Other Lunar Missions

LUPEX

- Lunar Polar Exploration (LUPEX) is a joint mission of ISRO and Japan Aerospace Exploration Agency (JAXA).
- This robotic mission aims to send a lander and rover to the South Pole of the moon in 2023/2024.
- Its aim is to obtain knowledge of lunar water resources and to explore the suitability of the

lunar polar region for setting up a lunar base.

• It plans to demonstrate new surface exploration technologies related to vehicular transport and lunar night survival for sustainable lunar exploration in the Polar Regions - South pole of the Moon in this case.

Artemis Missions

- Artemis stands for Acceleration, Reconnection, Turbulence, and Electrodynamics of the Moon's Interaction with the Sun.
- NASA's Artemis missions plan to enable human landing on the Moon beginning 2024 and target sustainable lunar exploration by 2028.
- It plans to send the first colour man and first woman to the lunar surface.
- Its objective is to measure what happens when the Sun's radiation hits our rocky moon, where there is no magnetic field to protect it.
- 3 parts of the program
 - 1. Artemis I (2021) involves an uncrewed flight to test the Space Launch System (SLS) and Orion spacecraft,
 - 2. Artemis II (2023) 1st crewed flight test,
 - 3. Artemis III (2024) will land astronauts on the Moon's South Pole.

Devas-Antrix Agreement

National Company Law Appellate Tribunal (NCLAT) has ordered that every advantage accrued to Devas Multimedis Private under the Devas-Antrix 2005 agreement was through fraud.

- In 2005, Antrix had signed an agreement to lease 2 communication satellites to Devas for 12 years for Rs 167 crore.
- Devas was to provide audio-video services to mobile platforms in India using the space or S-band on ISRO's GSAT 6 and 6A satellites.
- In 2011, the agreement was cancelled by the then government after allegations of the deal being a quid pro quo "sweetheart deal" were raised.

Antrix Corporation Limited

- ANTRIX Corporation Limited (ACL), Bengaluru is a wholly owned Government of India Company under the Department of Space.
- It was incorporated as a private limited company owned by the Government of India in 1992.
- It is the commercial arm and the marketing arm of the ISRO, and its entire shareholding is with the Government of India.

Source: PIB, The Hindu, The Indian Express, New Indian Express

