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## 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

#### Mentioned in the Tamil Literature

Purananuru

Porunai

'Than Poruntham' in a song about 'a very cold river'

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) - 1<sup>st</sup> 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**



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