Fossilized Leaves Discovered in Assam

Prelims: Current events of National Importance

Why in news?

Recently, 24-million-year-old fossilized leaves were found in Assam's Makum Coalfield, which revealed insights into ancient plant life and ecosystems.

- **Discovery of fossils** – The study was led by scientists from the **Birbal Sahni Institute of Palaeosciences (BSIP)**, Lucknow which is an autonomous body under the **Department of Science and Technology**.

  The team used herbarium comparisons, cluster analysis, and CLAMP (Climate Leaf Analysis Multivariate Program) to reconstruct the past environment.

- **Plant species identified –** Fossils were identified as the **oldest known record of the Nothopegia genus**, which no longer exists in Northeast India today.
- **Modern comparison –** They are closely related to modern Nothopegia species found in the **Western Ghats**, located thousands of kilometres away.
- **Dating period –** The fossils date back to the **late Oligocene epoch (24–23 million years ago)**, a period of significant climatic and geological change.
- **Ancient climatic conditions –** Ancient Northeast India had a warm and humid climate, suitable for tropical species like Nothopegia — similar to today's Western Ghats.
- **Geological impact –** The **rise of the Himalayas** due to tectonic movements drastically changed Northeast India's climate, making it **inhospitable** for tropical plants which led to the disappearance of species.
- **Species migration –** Nothopegia disappeared from Assam but survived in the Western Ghats, a climatically stable region that became its refuge.
- **Ecological significance –** This shows how **climate and geological forces** can force species to **migrate or vanish**, affecting biodiversity over long periods.
- It also depicts that current climate change is much faster and human-driven, unlike slow ancient shifts.
- It also emphasizes the need to protect biodiversity hotspots like the Western Ghats, which act as climate refuges for ancient and rare species.

Reference

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