

Stromatolites

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Stromatolites Latest News

Recently, a large stromatolites — dating back to 600 million years unearthed in the pine-clad ridges of Chambaghat in Solan district of Himachal Pradesh.

About Stromatolites

- Stromatolites are **organo-sedimentary structures** formed from the entrapment of calcium carbonate precipitates by **algae and cyanobacteria**.
- They are **biosedimentary structures** produced in **shallow marine seas**.
- These structures are usually characterized by thin, **alternating light and dark layers** that may be flat, hummocky, or dome-shaped.
- Stromatolites were **common in Precambrian time** (i.e., more than 542 million years ago).
- Most stromatolites are marine, but some forms from Proterozoic strata more than 2 ½ billion years old are interpreted as inhabiting **intertidal areas and freshwater ponds and lakes**.
- Living stromatolites are found in only a few salty lagoons or bays on Earth.

- The stromatolites at Chambaghat lie within the Krol Group of sedimentary rocks, comprising limestone, shale, and sandstone, formed in a shallow marine environment of what was once the **Tethys Sea**.
- This region was **once part of Gondwana**, the southern supercontinent that included India, South America, Africa, and others.
- The Indian plate's northward drift and collision with Eurasia lifted marine sediments, including stromatolites, thousands of meters skyward.

Significance of Stromatolites

- These ancient structures offer a window into a time when Earth's atmosphere was dominated by greenhouse gases, and oxygen was nonexistent.
- Their presence in the Himalayas, far from any current coastline, reveals a story of tectonic shifts, lost oceans, and the microbial origins of life.

Stromatolites in India

- **Chitrakoot, Uttar Pradesh:** Known for columnar stromatolites in **Vindhyan limestones**.
- **Morni Hills, Haryana:** Features well-preserved stromatolite beds in dolomite formations.
- **Mussoorie and Nainital, Uttarakhand:** Sites in the **Krol Belt** showcase Precambrian marine sedimentation.
- **Jaisalmer Fossil Park, Rajasthan:** A protected area highlighting a range of **Mesozoic fossils**, including marine life.
- **Dharwar Supergroup, Karnataka:** **Neoarchean stromatolites** in the Chitradurga schist belt, over 2.6 billion years old.
- **Bhima Basin, Karnataka:** Precambrian stromatolites preserved in shallow marine limestones.

Stromatolites FAQs

Q1: Did stromatolites create oxygen?

Ans: In Western Australia, 3.5bn-year-old stromatolites built up the oxygen content of the Earth's atmosphere to about 20%

Q2: What is the significance of stromatolites in Earth's history?

Ans: Stromatolites, the bio sedimentary products of microbe-sediment interactions, have the potential to provide significant information on the interaction of the biosphere, atmosphere, hydrosphere, and litho-sphere

Q3: What is the oldest fossil found in India?

Ans: Dickinsonia

Source: IE

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