

Dickinsonia: Earliest Known Living Animal

Why in News

Recently, researchers have discovered three fossils of the earliest known living animal, the **550-million-year-old 'Dickinsonia'** on the roof of the **Bhimbetka Rock Shelters.**

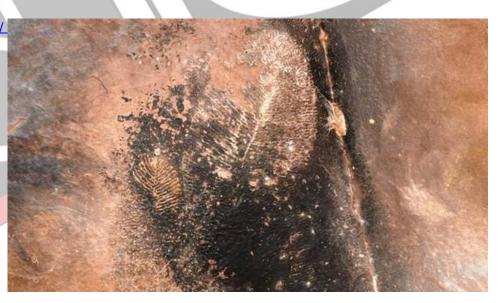
• The fossils were found in the **roof** of the **Auditorium Cave** at Bhimbetka Rock Shelters.

Note:

- It was believed that sponges were the oldest living organism however there is currently no evidence that sponge-like animals conquered the oceans before 540 million years ago, when the first unambiguous fossils of sponges and most other groups of animals start to appear in the geological record.
- The earliest evidence for animals on Earth is now the 558 million-years-old Dickinsonia and other Ediacaran animals.

Key Points

About Dickinsonia: //



Discovery:

- In September 2018, an international team of researchers claimed to have discovered the world's oldest fossil of Dickinsonia, which first appeared around 571 million to 541 million years ago.
- Current fossil evidence dates back around 100 million years from Dickinsonia.
- Period and Area:

- It is an **extinct genus of basal animal** that lived during the late Ediacaran period in what is now Australia, Russia and Ukraine.
 - **Basal animals** are animals which have **radial symmetry** in their body plans. They have very **simple bodies** and tend to be **diploblastic** (derived from only two embryonic cell layers).

Appearance:

- Thought to represent the earliest flowering of **complex multicellular life on our planet**, these creatures arose in a world devoid of predators, and **had no need for hard protective carapaces or skeletons**.
 - Their **soft, squishy bodies** resembled tubes, fronds or even thin, quilted pillows, they bore scant similarity to the anatomy of animals today.

Classification:

- Its affinities are presently unknown, its mode of growth is consistent with a stemgroup bilaterian affinity, though some have suggested that it belongs to the fungi or even an "extinct kingdom".
- The discovery of cholesterol molecules in fossils of Dickinsonia lends support to the idea that Dickinsonia was an animal.

Significance:

- It is further proof of the similar paleoenvironments and confirms assembly of Gondwanaland by the 550 Ma (mega annum).
 - A paleoenvironment is simply an environment that has been preserved in the rock record at some time in the past.
 - Mega-annum, usually abbreviated as Ma, is a unit of time equal to one million years.
 - It is commonly used in scientific disciplines such as geology, paleontology, and celestial mechanics to signify very long time periods in the past.
- This finding could help scientists better understand the interaction of geology and biology that triggered the evolution of complex life on Earth.

Bhimbetka Caves:

History and Period Span:

- The Bhimbetka rock shelters are an archaeological site in central India that spans the prehistoric Paleolithic and Mesolithic periods, as well as the historic period.
- It exhibits the earliest traces of human life in India and evidence of Stone
 Age starting at the site in Acheulian times.
- It is a <u>UNESCO World Heritage Site</u> that consists of seven hills and over 750 rock shelters distributed over 10 km.

Discovery:

The Bhimbetka rock shelters were found by V S Wakankar in1957.

Location:

- It is located in Raisen District between Hoshangabad and Bhopal in Madhya Pradesh.
 - It is about **40 kilometres south-east of Bhopal** in the foothills of the Vindhya Mountains.

Paintings:

• Some of the Bhimbetka rock shelters feature **prehistoric cave paintings** and the earliest are about 10,000 years old (c. 8,000 BCE), corresponding to the Indian

Mesolithic.

- Most of these are done in **red and white** on the cave walls.
- A multitude of themes were covered in this form of rock art and it depicted scenes like **singing**, **dancing**, **hunting** and other common activities of the people staying there.
 - The oldest of the cave paintings in Bhimbetka is believed to be about 12,000 years ago.

Source:TH

