Scientists identify first ‘quantum entangled’ animal in history

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In news– Recently, scientists have identified the first ”quantum entangled” animal in history.

Key findings-

- Recently scientists from Nanyang Technological University in Singapore and colleagues have created an exotic quantum state called entanglement using a superconducting qubit and a microscopic animal, called a tardigrade.
- Along the way, the team have created the most extreme form of suspended animation ever recorded.
- Tardigrades are well known to be capable of surviving extreme conditions by entering a state known as cryptobiosis.
- This is induced when the animal is frozen or desiccated and the creature enters a state of low metabolic activity called a tun.
- When the temperature rises and water becomes available again, the tardigrade revives, usually in just a few minutes.
- To perform their entanglement experiment, the team cooled their tardigrade to below 10 millikelvin, almost to absolute zero, while reducing the pressure to a millionth of that in the atmosphere.
- This is to-date the most extreme exposure to low temperatures and pressures that a tardigrade has been recorded to survive.
- The researchers have claimed that the investigation is perhaps the closest realization combining biological

matter and quantum matter available with present-day technology.

Tardigrade-

- Tardigrades are **invertebrates belonging to the phylum Tardigrada.**
- They are related to arthropods (e.g., crustaceans and insects) and nematodes (i.e., roundworms).
- **Also known as water bears, tardigrades are known for their appearance** and their ability to survive in extreme environments.
- Tardigrades **can survive extreme conditions** by going into a “tun” state, in which their body dries out and their metabolism drops to as little as 0.01 percent of its normal rate.
- When conditions return to normal, the tardigrade revives itself.
- A tardigrade can stay in a tun state for decades.
- Tardigrades can be found in moist habitats, such as damp moss or underwater sediment