NASA sending baby squids and water bears to ISS

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In news- NASA will send 128 glow-in-the-dark baby squids and 5,000 tardigrades (also called water bears) to the International Space Station for research purposes.

About the mission-

- The **water animals,** which will be launched aboard **SpaceX's 22nd cargo resupply mission to the ISS.**
- The tardigrades and bobtail squid will be involved in experiments aboard the floating laboratory and will be arriving in a **semi-frozen state** before they are thawed out, revived and grown in a special bioculture system.
- Researchers have sequenced the genome of the **tardigrade Hypsibius exemplaris** and developed methods for measuring how different environmental conditions affect tardigrade gene expression.
- One of these **studies involves** looking at how the tardigrades that can adapt to extreme conditions on Earth, including high pressure, temperature and radiation– would behave in a spaceflight environment.
- Researchers will be able to **study their hardiness close up**, and possibly identify the genes that allow them to become so resilient.
- By learning how they can survive in low gravity conditions, it would be possible to design better techniques to keep astronauts healthy on **long-duration space missions.**
- Scientists also want to look at how **microgravity conditions affect the relationship between the bobtail squid (**which are 3 mm long**) and beneficial microbes**, as part of a study called **Understanding of Microgravity on Animal-Microbe Interactions (UMAMI).**

- The research will allow scientists to have a better understanding of how beneficial microbes interact with animals when there is a lack of gravity.

Meanwhile, Nasa will also undertake a study on kidney stones after some crew members exhibited increased susceptibility to kidney stones during flight. The **Kidney Cells-02 investigation** uses a 3D kidney cell model to study the effects of microgravity on the formation of microcrystals that can lead to kidney stones.