



Conservation of Cephalopods

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Why in News?

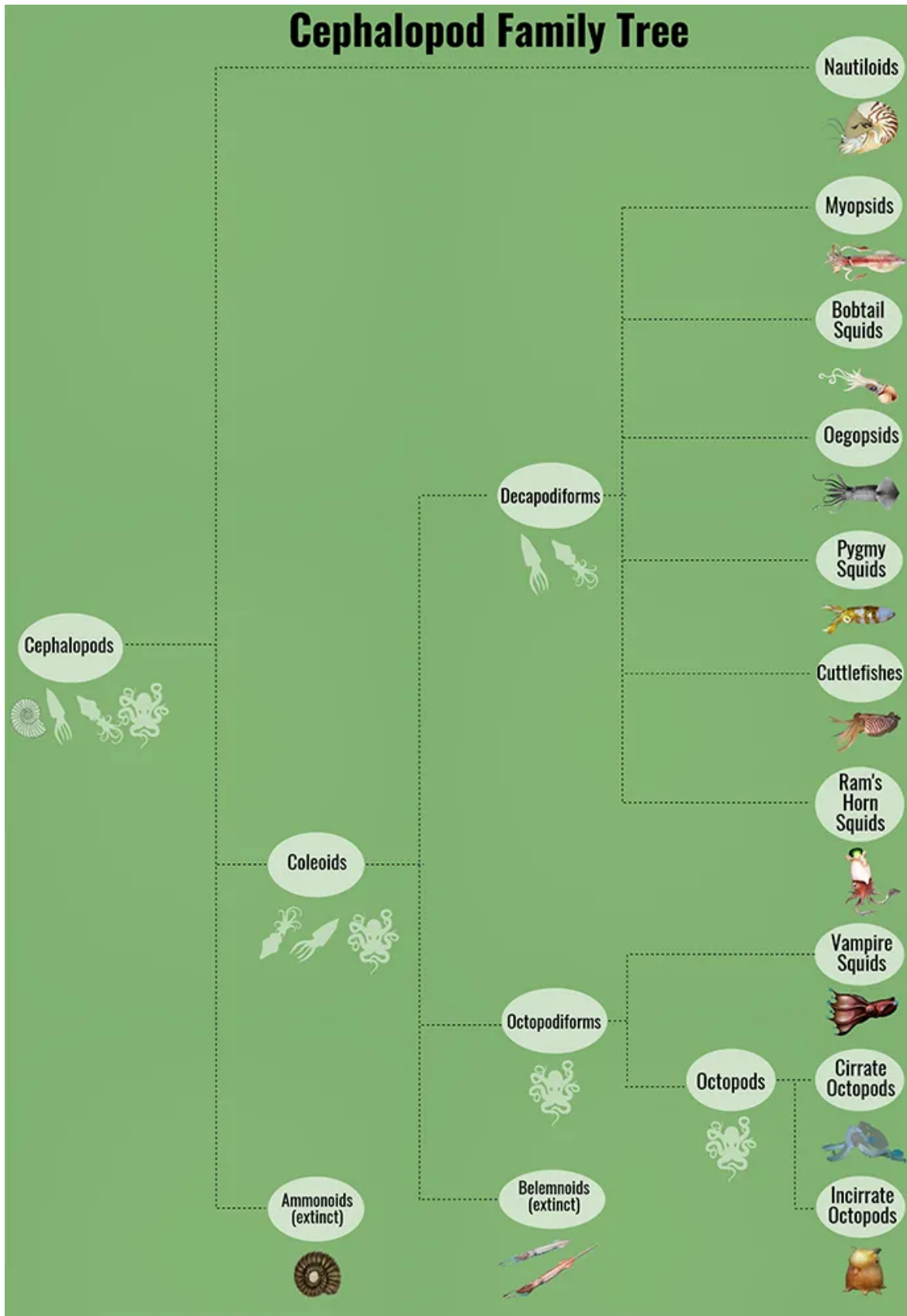
Recently, **California and Washington** have approved **bans on octopus farming**. **Hawaii** is considering similar action against raising **octopus, a member of Cephalopods**, demand for food.

What are Cephalopods?

- **About:** Cephalopods are a class of **ocean-dwelling intelligent invertebrates** that includes **cuttlefish, squid and octopus**.
 - Cephalopods are a broad class of **molluscs**. Mollusca are **soft-bodied invertebrates**, often enclosed **partly or fully** in a **calcium carbonate shell**.
 - Early cephalopods had **protective shells**, but many lost them, and evolved traits like **high intelligence, flexible arms, and camouflage**.
- **Diversity:** Cephalopods are a diverse class with **three superorders**:
 - **Octopodiforms** (**octopuses** and related species)
 - **Decapodiforms** (**squid, cuttlefish**, and related species)
 - **Nautiloids** (**nautilus** and related species)
- **Anatomy:** The term **cephalopod** means "**head foot**," referring to the connection between their head and arms.
 - Cephalopods have **two eyes and at least eight arms**. E.g., octopuses are eight-armed while **squids are ten-armed**.
 - **Nautilus** are the only cephalopods with an **external shell**.
- **Eyes and Vision:** Most cephalopods are likely **colorblind** and exhibit **visual camouflage**.
 - They can **open and close tiny sacs** just below their skin that contain coloured **pigments and reflectors**, revealing specific colours.
- **Movement:** Cephalopods mainly use **jet propulsion**, expelling water from their mantle cavity to propel themselves.
 - Octopuses **walk with their arms**, while squid and cuttlefish use **fins** for movement.
- **Circulatory System:** Cephalopods have **three hearts**: two pump deoxygenated blood, and one pumps oxygenated blood.
 - Their **blood is blue** due to **copper-based hemocyanin**, which is less efficient than iron-based **hemoglobin** but highly effective in **cold, low-oxygen environments**.
- **Brain:** Over half of the **neurons** in common octopus (*Octopus vulgaris*) are not in the brain at all, but distributed in "**mini-brains**," or **ganglia, in the arms**.
 - Most neurons in the **central brain focus on vision**, leaving less than a quarter for learning and memory.

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Cephalopod Family Tree



UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. With reference to the evolution of living organisms, which one of the following sequences is correct?(2009)

- (a) Octopus - Dolphin - Shark
- (b) Pangolin - Tortoise - Hawk
- (c) Salamander - Python - Kangaroo
- (d) Frog - Crab - Prawn

Ans: (c)

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