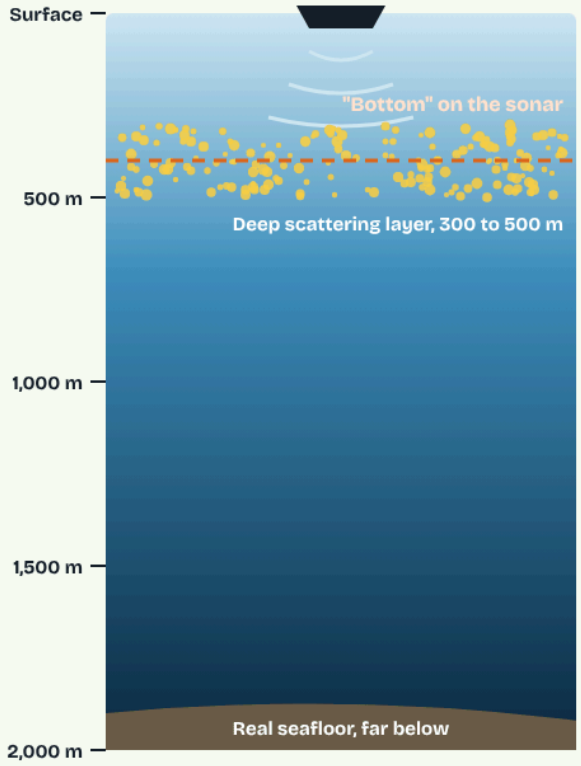
That is why

# Why does the ocean have a phantom bottom?

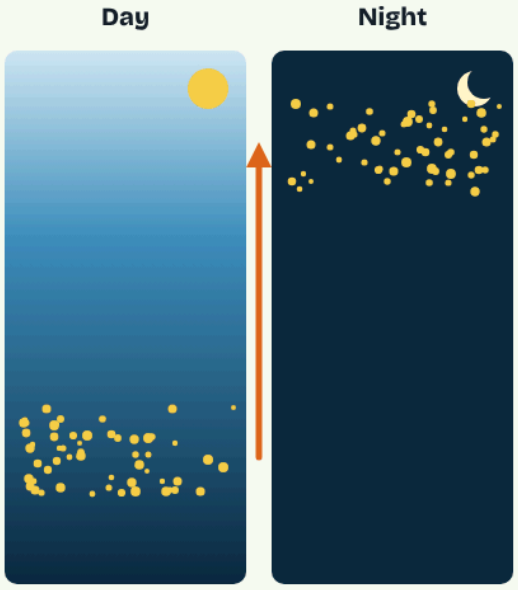
A layer of small animals with gas-filled swim bladders echoes sonar so strongly it looks like a seafloor.

## A What the sonar saw




USS Jasper, 1942: sonar showed a "bottom" a few hundred metres down, in water far deeper than that.

## B It moves every day




By day the animals hide in the dark, 300 to 500 m down. At night many rise to feed near the surface, and sink again before dawn: a daily migration.

## C Why it echoes like rock

**1 Sound passes jelly**

Squid, jellyfish and fish flesh are mostly water, so sonar goes almost straight through them.

**2 Sound bounces off gas**

Many small fish, like lanternfish, carry a gas-filled swim bladder. Gas in water reflects sound.

**3 Billions together**

Spread across the ocean, all those tiny echoes merge into one "floor" on the screen.

**Not a floor: billions of tiny gas bubbles inside fish.**

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