Ashur university collage

Dept. of Biology

First-year

General geology

Lec. 6

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ORIGIN OF THE OCEAN

The origin of the ocean can be traced back to the very beginning of Earth's formation, around 4.5 billion years ago. When the planet was first formed, it was a hot, molten mass with no water on its surface. However, as the planet cooled, water vapor was released from the interior and began to accumulate in the atmosphere.

Over time, the water vapor in the atmosphere condensed and fell back to the surface as rain. This process continued for millions of years, creating vast oceans on the surface of the planet. Additionally, comets and asteroids carrying water also collided with the Earth, further contributing to the formation of the oceans.

The exact details of how the ocean formed are still being studied by scientists, but it is generally believed that it was a combination of these factors that ultimately led to the creation of Earth's vast oceans.

METHODS OF STUDYING THE SEA FLOOR

There are several methods that scientists use to study the sea floor. Some of the most common methods include:

1- Sonar: Sonar, or sound navigation and ranging, is a technique that uses sound waves to map the sea floor. A sonar device emits sound waves that bounce off the sea floor and return to the device, allowing scientists to create detailed maps of the ocean floor topography.

2- Seismic Reflection: Seismic reflection is a technique that uses sound waves to study the structure and composition of the sea floor. This method involves sending seismic waves into the ocean floor and measuring the echoes that bounce back. By analyzing these echoes, scientists can determine the structure and composition of the layers beneath the sea floor.

3- Gravity mapping: Gravity mapping involves measuring the gravitational field of the ocean floor to study its topography and structure. This method can help scientists identify underwater mountains, trenches, and other features that are hidden beneath the surface of the water.

4- Sampling: Sampling involves collecting physical samples of the sea floor using tools like dredges, grabs, and corers. These samples can be analyzed in the lab to study the composition, texture, and structure of the sea floor.

5- Remotely operated vehicles (ROVs): ROVs are underwater robots that are used to explore and study the sea floor. Equipped with cameras, sensors, and other instruments, ROVs can collect data and samples from the sea floor, as well as explore underwater environments that are difficult or impossible for humans to access.