History of Earth formation and 25 milestones (Part I)

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Earth is the only planet in the universe known to have life. Formed nearly 4.6 billion years ago and up to 1 billion years ago, life began to appear on the surface of the Earth. Since then, many things have changed on this planet, below are the most important milestones in the history of our planet's development.

1. The Earth used to be purple and 8 secrets of little surprise
2. What will happen if the wind stops blowing on Earth?
3. You will be startled when watching the video describing the process of Earth's hotness in the past 100 years

1. The Earth was formed - 4.5 billion years ago

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About 4.5 billion years ago, rocks scattered around the Sun were still very young, colliding with each other and having enough mass to attract the surrounding gas under the influence of the gravitational force. into the Earth. The moon, the only satellite of the Earth, was born shortly after.

Scientists believe that an asteroid that collided strongly with the Earth caused debris to spill around and gradually converge into the Moon. The results of Moonstone analysis also show that this hypothesis is correct, the chemical composition of the Moon and Earth are similar.

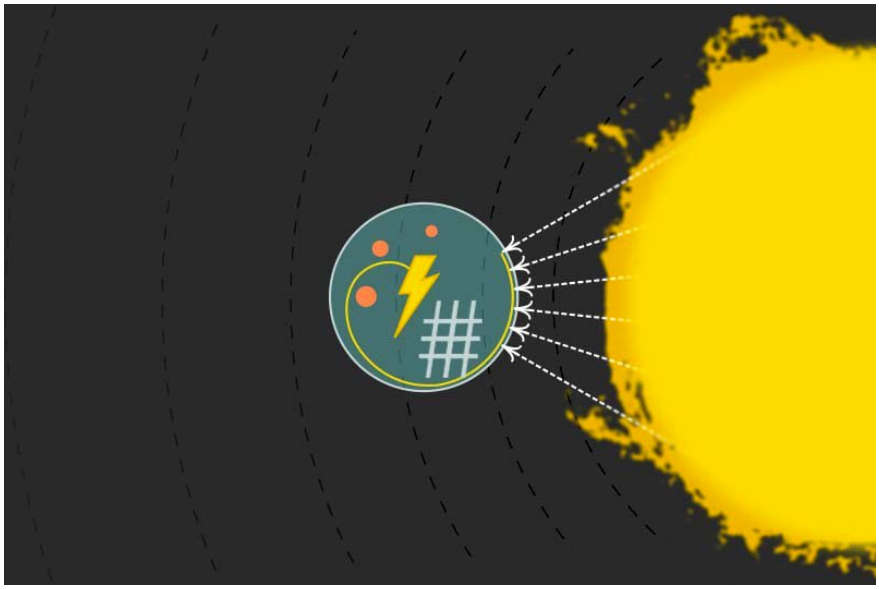
2. The first sprouts - 3.5 billion years ago

Until now, researchers have yet to determine what the first cell looks like, when it was born. But the oldest fossil record ever discovered dates back to about 3.5 billion years. This proves that the first sprouts may have appeared before. Scientists believe that the first germ could have started from warm, alkaline alkaline vessels at the bottom of the oceans, either on the sea or on land.

The first form of reproduction on Earth is asexual reproduction (cell duplication).

3. Photosynthesis - 3.4 billion years ago

About 3.4 billion years ago, thanks to the rays of the sun, the first microorganisms began to evolve. From simple molecules, they take advantage of energy from photons to synthesize them into the road. That process is called photosynthesis.

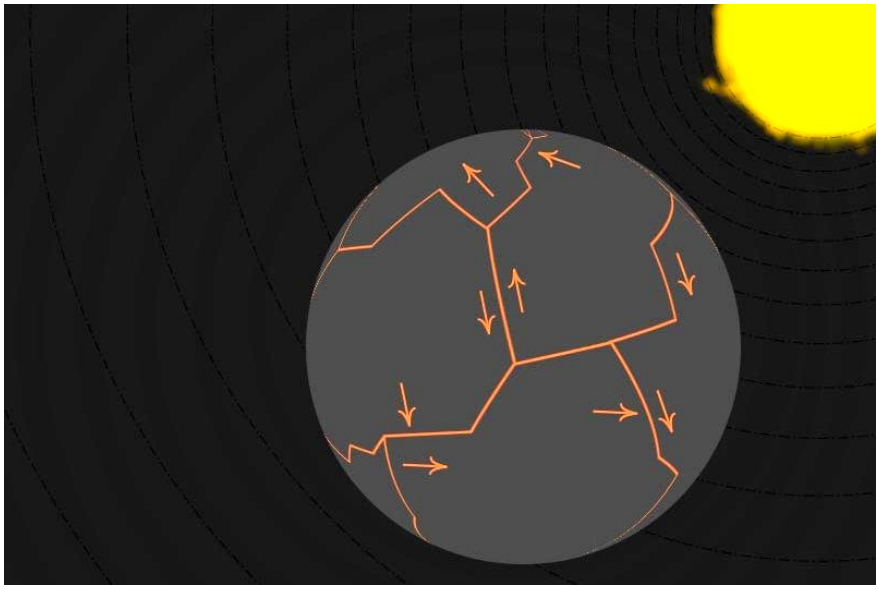


The first bacteria are present on Earth synthesizing sugars from the solar energy, but do not form oxygen.

But unlike today's plants, the first microbes did not "release" oxygen, so the Earth's atmosphere was still very dangerous for humans and other animals.

4. The drift of the continents - 3 billion years ago

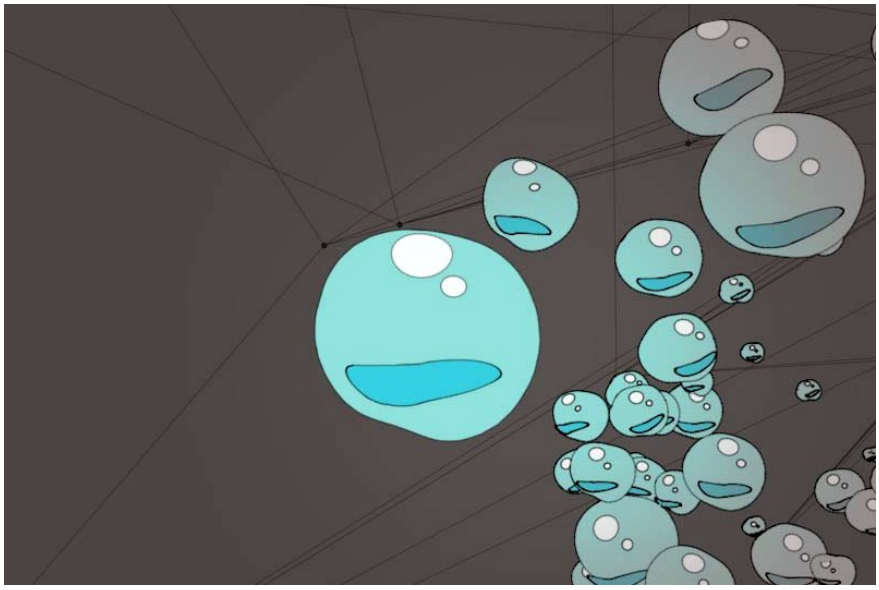
The Earth's crust is very hard but is actually made up of "icebergs" on molten magma layers. When the "icebergs" collide with each other, a part of this block will be "sunk under" the other. This process is called plate tectonics or the drift of the continents. The first continent on Earth, called Ur, was created from the above process.



The surface of the Earth is assembled from pieces.

5. The "pollution" of the first atmosphere due to oxygen - 2.4 billion years ago

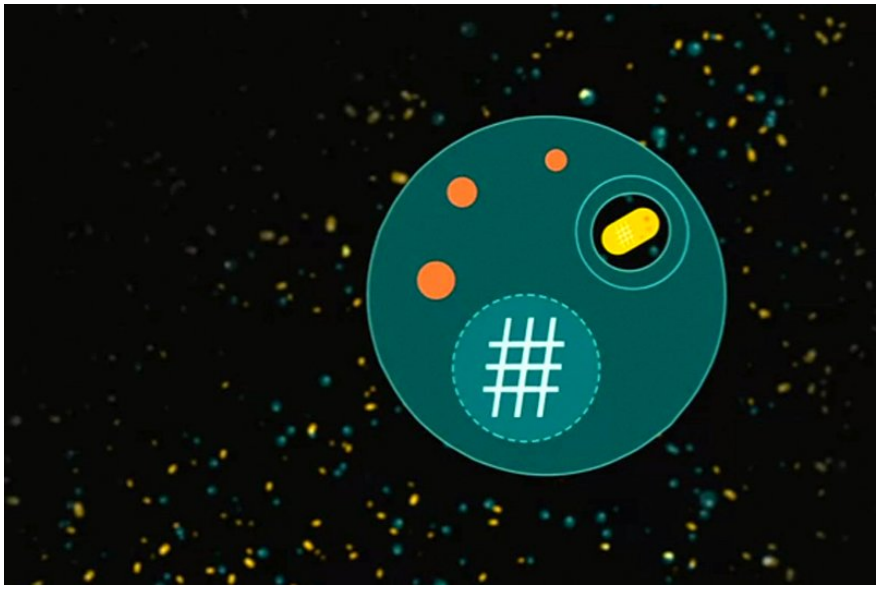
More than 1 billion years ago the first photosynthesis reaction took place but it did not produce oxygen. Causing the atmosphere on Earth at that time was very low in oxygen. But somehow, some bacteria have learned how to synthesize sugars from carbon dioxide, water, sunlight and oxygen.



When greenhouse gases (with CO2) are "drained" by the bacteria from the atmosphere, the first "pollution" process in Earth's history took place making everything cold.

6. Complex cells or symbiosis - 2 to 1 billion years ago

At this time, life is still very simple, although it has been on Earth for a long time but they are similar in structure to modern bacteria today. But evolution has taken the world to a new level. Organisms called eukaryotes have a more complex structure, inside them are specialized organs, the nucleus has its own membrane separate from the rest of the cell.



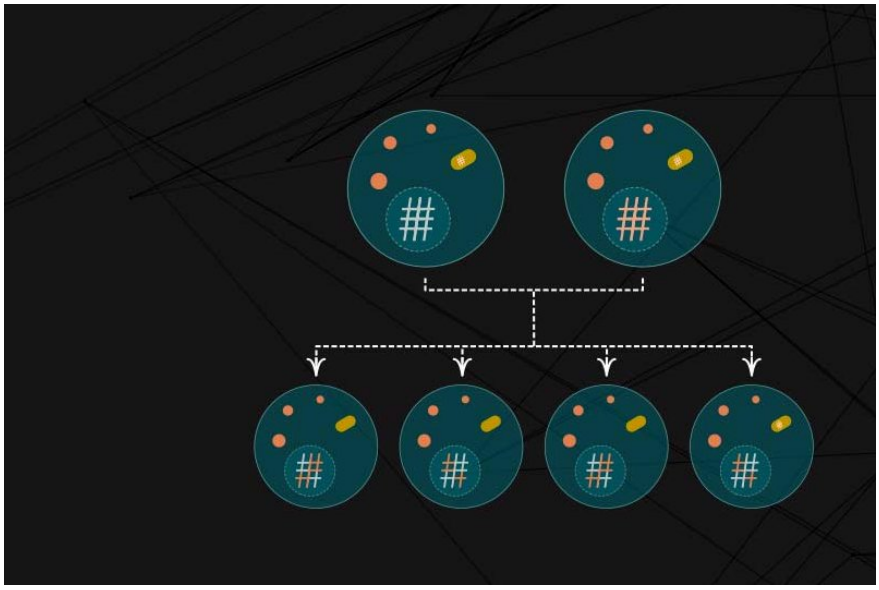
Mitochondria are essentially bacteria capable of ATP synthesis that have been "swallowed" by other microorganisms.
Eukaryotes also find themselves "associates" that are shaped similarly to beans called mitochondria that convert energy from organic substances into ATP.

Researchers believe that mitochondria are initially isolated bacteria in the outside world rather than within the cells. But thanks to symbiosis or cell absorption, these bacteria cooperate with eukaryotes and generate energy for them.

Every animal and plant we see today has eukaryote cells.

7. The first sex appearance - 1.2 billion years ago

The first organisms that maintained and developed the same deer through asexual reproduction, the cells kept growing and then automatically divided into two.

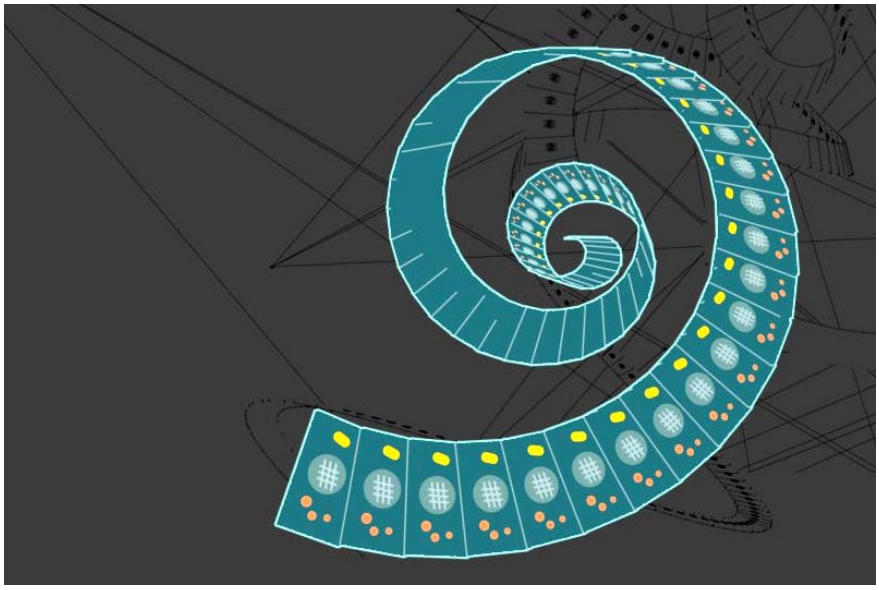


Prologue of gender emergence for future breeding.

The 1.2 billion-year-old fossil record of red algae showed that they began to have sex-specific cells as spores. This proves that the appearance of gender was born before that time.

8. Multicellular organisms appeared - 1 billion years ago

There are fossils dating back to 2.1 billion years, showing that many known bacteria live in the form of community to be larger in size, but when necessary they can still exist in the form of single cells.

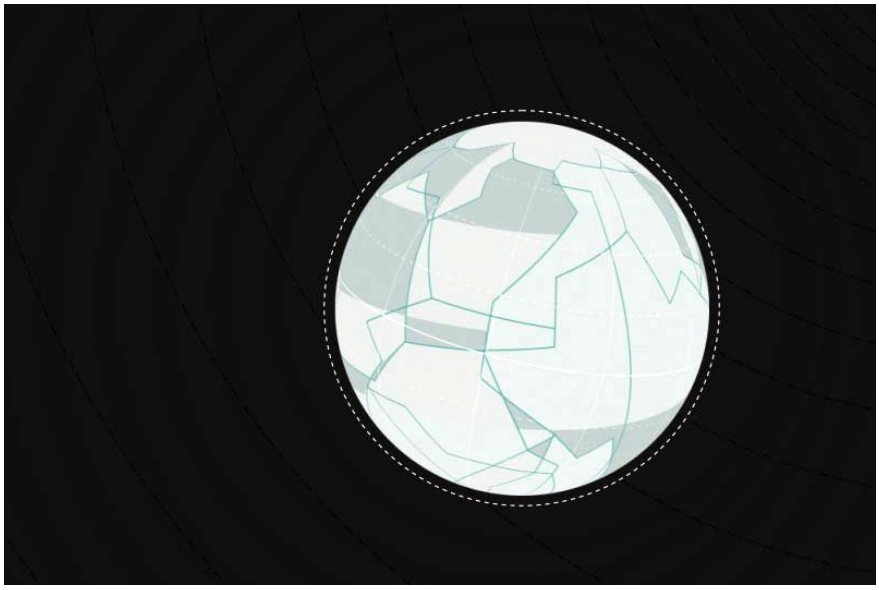


The "gathering" bacterial populations living together may be the beginning of multicellular organisms.
Researchers believe that, about 1 billion years ago, the first multicellular organisms - with inseparable single cells - appeared. In it, there are different groups of creatures that have evolved towards multicellularity

independently. Plants are thought to have chosen multicellular forms before animals.

9. The earth was frozen - 850 - 635 million years ago

After being first "contaminated" with oxygen from microbes a few billion years ago, the Earth was once again petrified. Until now, researchers still do not know what the cause of this freeze is, but it lasted for 200 million years. The ice covered the Earth from 2 poles to the equator.



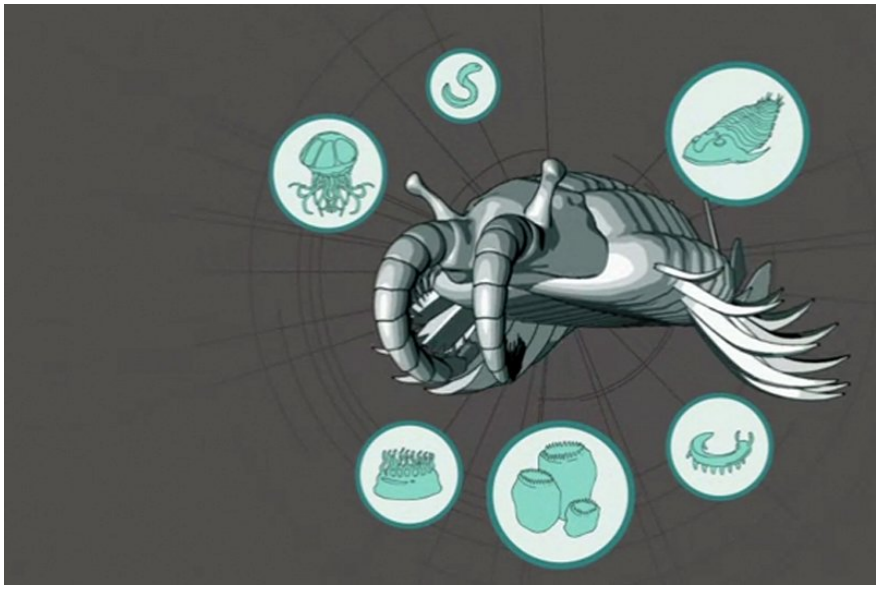
Earth once had "cold ice" for millions of years.

This second glacial period is thought to have influenced the birth of the first complex constituent animals. These are tubular or curly leaves such as ferns, opening a new period called the Ediacara period.

10. The Cambrian explosion - 535 million years ago

After the animals evolved and adapted to the new environment, the Earth occurred two outbreaks in the number of species.

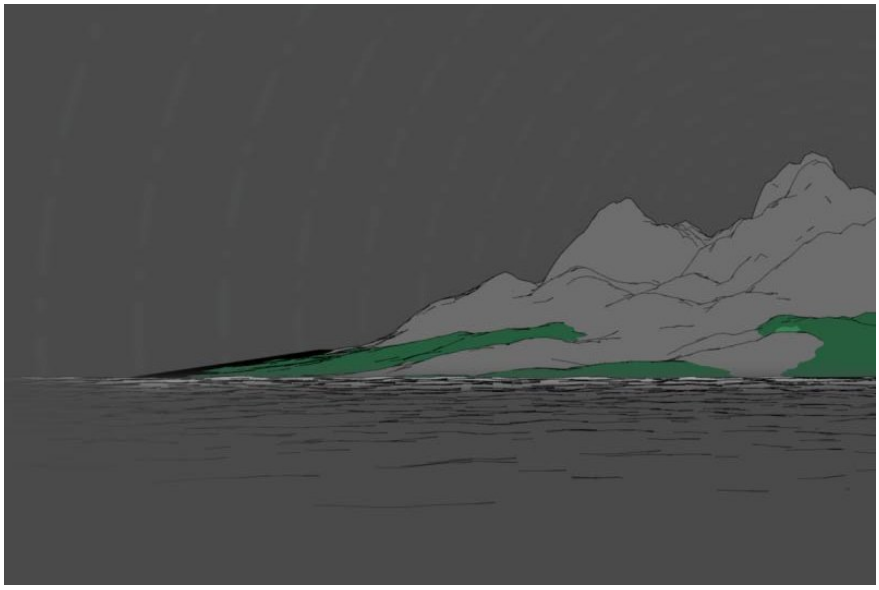
During the Cambria boom period, an average of 10 million new animals were found every 10 million years. During this period, most animals have hard shells that make fossil formation easier than before. According to scientists, it is likely that there have been "bursts" of other species in the past, but because they do not have a hard shell structure, they cannot record existence.



45 million years later, another explosion in the number of species in each group of animals occurred, and was called the Ordovician Cenozoic Event.

11. Plants invaded the land - 465 million years ago

For billions of years, water has always been the cradle of life on Earth. Until 500 million years ago, there were only a few animals seeking to land, but not to live, but to find a place to lay eggs to stay away from enemies under the water.



Green algae are the first "inhabitants" on the ground.

In contrast, new plants are the first "permanent" residents on land. Relatives of green algae are the first plants to invade the land but then they quickly evolved and branched out into many different species.

12. Andean-Saharan ice age - 460 - 430 million years ago

The biological diversity of the world extends during the Ordovician period but when this century ends, the Earth is in front of an extinction wave with the number of species being reduced to as many as the number of species that have been born.

At the end of the Ordovician period, the temperature on Earth dropped rapidly, the two-pole magnetic tape covered most of the surface area. The result is an ice age called Andean-Saharan. The name is placed in two places that reveal traces of the upper period, the top of the Andes peak and the Sahara desert.

The Andean-Saharan Ice Age marks the first and second largest mass extinction in all extinctions ever recorded in Earth's development history. An estimated 85% of marine species have been wiped out. After that, because the competition species were wiped out, the fish species grew at a dizzying speed.