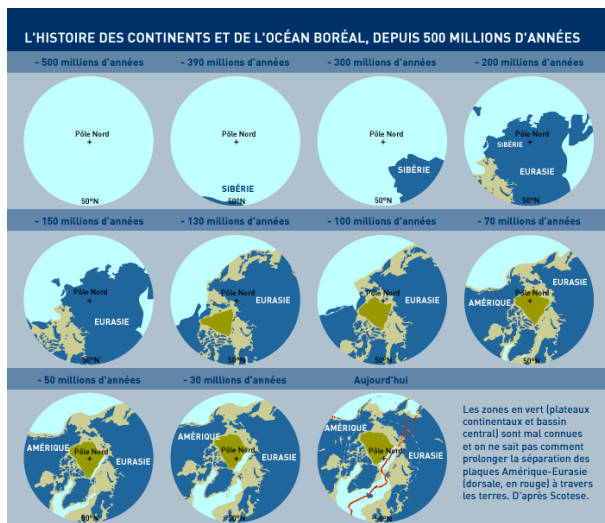


## GENESIS OF THE ARCTIC OCEAN

### A JIGSAW PUZZLE OF TECTONIC PLATES

The Earth's crust is made up of about 15 thick and rigid plates that are constantly moving around. Very slowly, these "tectonic" plates (whose fault lines are mostly ridges on the sea bed) grind along against each other, move apart or collide together making one slide under or over the next. This geological ballet triggers earthquakes and volcanic eruptions.



### ARCTIC OCEAN: A SEA BED OPENING UNDER THE ICE

A map of the sea bed shows that the mid-Atlantic Ridge separating the American and Eurasian plates extends right up into the Arctic Ocean. But very little is known about the history of the Earth's crust in that region because conditions in the Arctic make geological and geophysical studies very hard to carry out.



### THE STORY STILL CONTINUES...

Some 500 million years ago, a huge ocean covered the whole of the northern half of the Earth, meaning that Spitsbergen and Greenland were where the Equator is. Between 150 and 200 million years later, both land masses had moved as far north as the Tropic, and by 100 million years ago Spitsbergen was nearly up to the Arctic Circle. The pieces of the Arctic puzzle were slowly being put in place.

### THE BIRTH OF THE ARCTIC OCEAN

About 50 million years ago, the Atlantic Basin continued to open up towards the North, pushing Spitsbergen across alongside Greenland. In this way, the Arctic Basin split apart and the Arctic Ocean was born. By 20 million years ago, all the land masses were in practically the same positions as today. But the movement continues, slowly moving America and Northern Europe further apart.