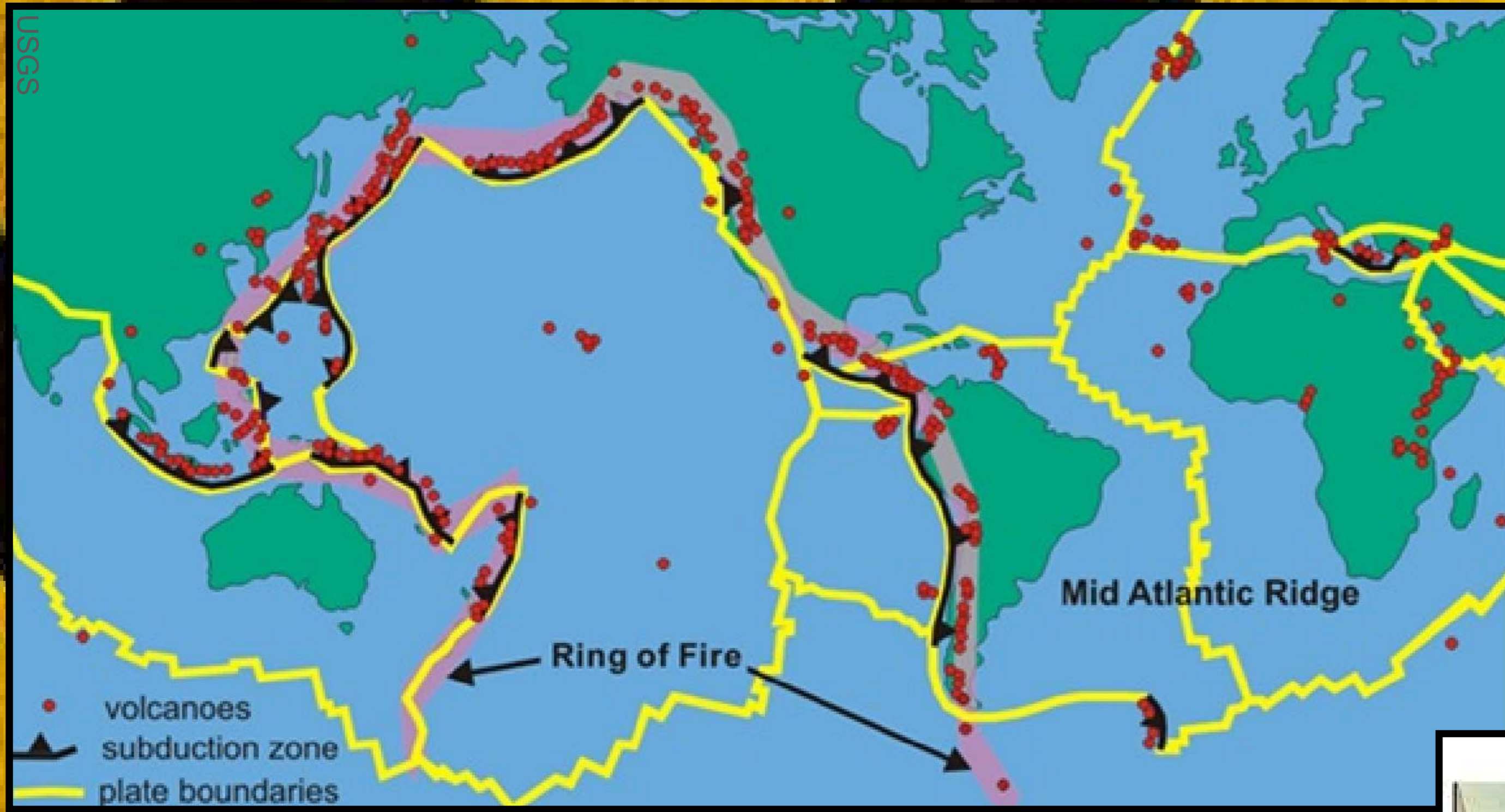
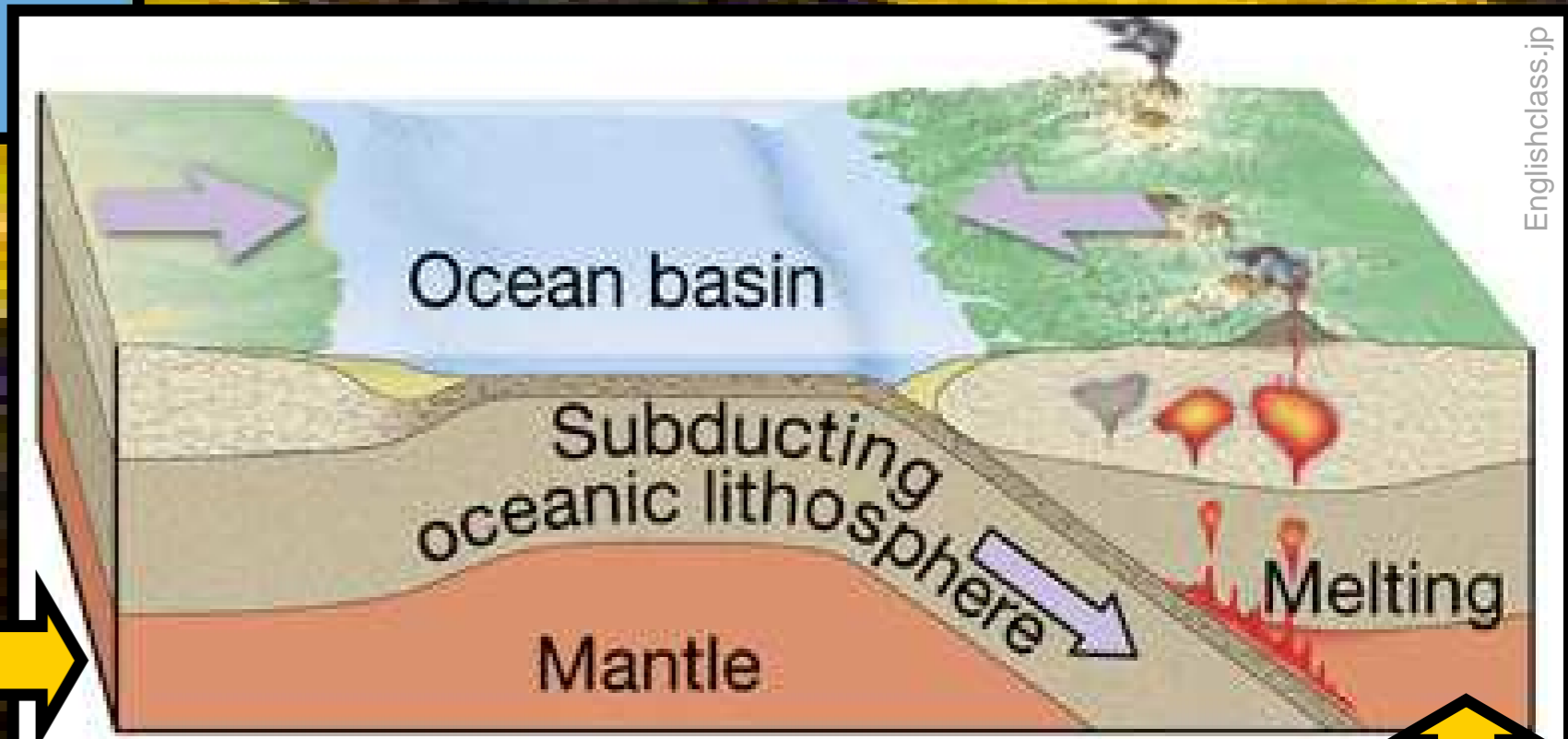


Subduction Zone Volcanoes



Earth's crust is made up of tectonic plates – and sometimes, two plates move toward each other. If one colliding plate is thin oceanic crust, it slides underneath the other, down into the mantle. This is called **subduction**.

As the oceanic plate descends into the mantle, it heats up. All the water it contains rises upwards, mixing with the mantle rock and making it melt. This magma is full of dissolved gas – like a fizzy drink – so it forces its way upwards and explodes violently onto the surface.

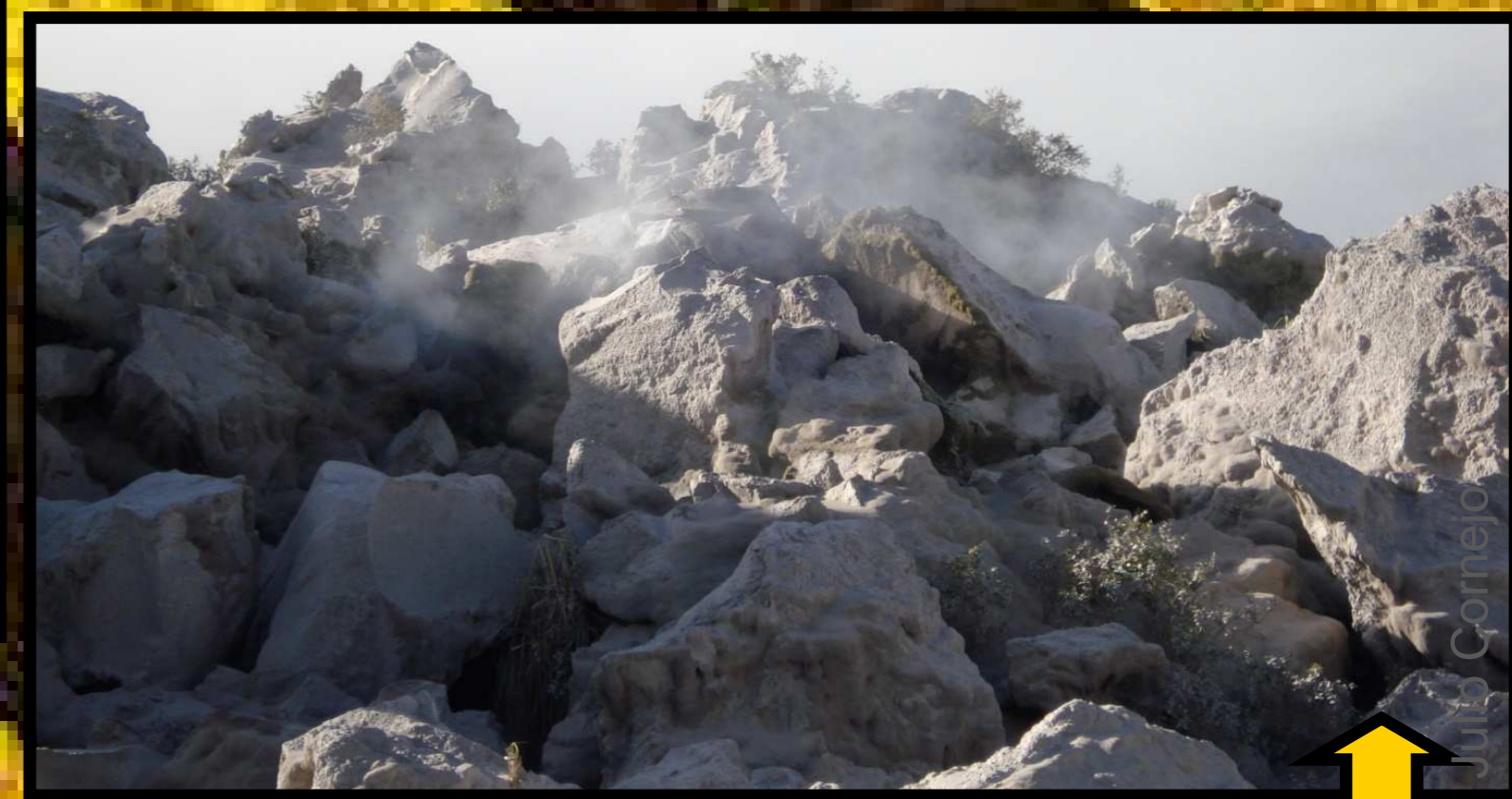
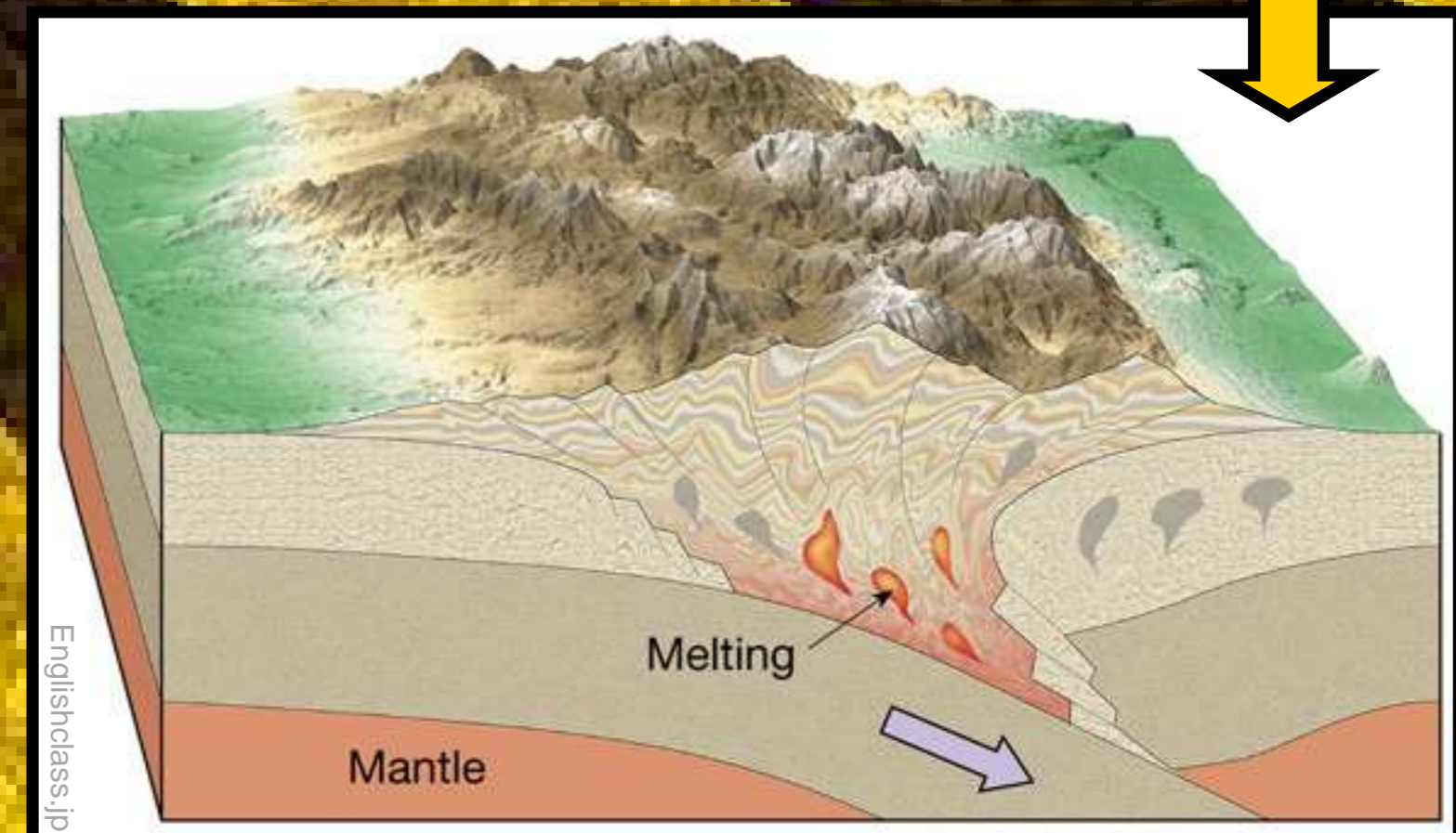


When subduction starts, the overriding crust can be quite thin (like in Central America). But millions of years of eruptions thicken the crust, creating a huge mountain range (like the Andes).



Subduction zone volcanoes often erupt explosively, sending huge columns of hot gas, ash, pumice, and rock into the air. These **Plinian columns** can be over 30 km high.

Subduction zone lava rises so slowly through the thick overriding crust that it changes its chemistry. It becomes **evolved** lava.



Evolved lava is very thick and sticky, and it doesn't flow easily. Sometimes, flows have liquid centres but crusts so thick you can safely walk on them (left); or they can be made of many solid blocks (above).

