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The most fascinating dynamics of our planet earth is the study about its volatile features that has led to some of the most famous volcanoes that cover the entire area of the earth. The field of volcanology is an exciting and upright career involving the study of the past eruptions, analyzing the geological aspects of the events related to previous eruptions to be able to predict future events. Recently I watched a show on my Dish TV, where I saw a spectacular vision of spewing lava out of a famous volcano that had occurred long back. The geologist in the show was dissecting the events and predicting the chances of an eruption in the near future. I got to know some of the interesting facts about this natural disaster even though most of us would have studied in school academics, but who cared to ponder over the topics then.

Earth is composed of many layers from the surface to the core. The upper layers of the earth are divided into eight tectonic plates across the entire earth. These plates float upon the highly viscous lower layer of the earth's crust - asthenosphere which causes continuous movements in the tectonic plates and results in isostatic adjustments. Due to the temperature and pressure conditions in the asthenosphere region, rock and other materials becomes ductile.

The ductile rock or the molten magma is forced up through the fissure because of the overwhelming gas pressure accumulated in asthenosphere and gush out of the vent or a hole formed whenever tectonic plates get converged or diverged. For instance, a when two tectonic plates diverge or pull apart and collide or converge with each other, they leave a crack on the earth's crust where molten rock, gases and debris erupt. The existence of volcanic activity can be seen near the boundaries of these plates and also depends on several other environmental and geological factors. Volcanic activity can prevail anywhere in the world, like on the land, under water and even below the snow.

The structure of the volcano is an accumulation of molten magma, gases, ash and dust, and is seen in the form of a dome, conical hill or mountain, or just a crack in the earth's crust where lava erupts. Often dark smoke, ash, pumices and rock dust are spewed out of the volcanoes. Craters are seen on the summit of the volcanoes connecting with reservoirs of molten rock below the surface of the Earth and this expelled magma is called lava when it reaches the surface of the earth. Lava that flows out of the crevices can be thick and slow-moving or thin and fast-moving and is so high in temperature it can immediately burn anything that comes in contact with it. As lava reaches the surface, it begins to cool and becomes crystallized minerals. The chemical composition of lava consists of elements like silicon, oxygen, aluminum, iron, magnesium, calcium, sodium, potassium, phosphorus, and titanium concentrations.

Volcanoes are classified into three categories based on their status - extinct, dormant and active. An extinct volcano will never erupt again and millions of years have elapsed since the last eruption. A dormant volcano has not erupted in 2000 years and is currently inactive and may erupt again in the future. An active volcano has erupted recently and is still showing signs that may lead to an eruption. Apart from these, there are different types of volcanoes depending on their distinct landforms and the style of eruptions. The shield volcanoes, lava domes, stratovolcanoes, supervolcanoes and submarine volcanoes.

Over time, a number of volcanoes have erupted thought history erasing civilizations and are still posing great danger to people and wildlife. But they also have significantly contributed to science and mankind, as they are a good source of minerals and form a fertile land. Some of the volcanic areas are destinations of exotic scenic beauty.

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