

Volcanism

Volcano: A vent or an opening through which magma come out

Volcanism: It is a process of coming out of molten material

Volcanist: It is a wider term includes all those processes which includes the formation of lava and coming out.

Gases: Process called degassing. Gasses like CO₂, N₂, CH₄, H₂O vapour.

Solid Materials- Process called pyroclastic material. Dust particles, pea nut like rocks called scoria, Lappli, Big rocks, Pumice and Volcanic Bombs and Volcanic ash.

Due to Vocanic dust, it block sunlight due to this temperature decreases. This phenomena is called mini ice age.

Tephra is collection of Lapli and dust

Pumice- Solid rock+ buble comes in rock when it solidify.

There is no difference between magma and lava. Magma inside the earth containing more water vapour and lava outside volcanos

2 types of Lava

Acidic (60 % +Silica)- Viscosity means less fluidity

Basic (30 % of Silica)

Acidic lava form volcanic cones because of less fluidity

Basic lava- Plateaus are formed. It spreads in the form of sheets, It cools faster than acidic lava. The process of emission/release of gases is known as degasing. Gases like CO₂, N₂, CH₄ known as degasing. Gasses like CO₂, N₂, CH₄, H₂O vapour.

Soild material that comes out- It is collectively called as Pyroclastic material, which means fragmented because of heat. It includes volcanic dust which is fine textured, scoria (it is a pea nut size pebble), Lapli (Its about 252 mm) other materials include pumice. It is volcanic rock formed due to solidification of molten material in air. Air bubbles are locked which make it porus.

Volcanic Bomb- Bigger Pumice are the Volcanic Bombs.

Liquid Material- That comes out is called as lava, 2 types

1) Acidic (60 % + Silica)

2) Basic (30 % of Silica)

Acidic will be more explosive than basic lava because mostly it block mouth of the volcano. It cannot freely move

Distribution of Volcanism

1) Pacific Ring of Fire- This, zone lies between American plates i.e north and south American and pacific plates along the eastern margin of pacific volcanic peaks includes cascade ranges and coastal range in north America. Volcanic arcs in andies including cotopaxy, chimborozo (first time degasing was composed), Ojas-del-slado (highest Volcanic peak of World) along the western margin volcanic arcs like Kural island, Japanese Volcanic arces, Phillipeans, Sumatra and Bali.

2) Mid Atlantic Ridge- It extends from Iceland in the north to the southern end of atlantic ocean. It is roughly in the shape of English alphabet 'S'.

Many plateau are located on the ridge e.g. Ice-landic plateau and the plateau in Swedan.

3. Mid Continental Belt- It lies between Eurasian plate and African plate of western region where as between Indo-Australian plate along eastern region. Along eastern margin where Indian plates is colliding with Eurasian plate, no volcanism is witnessed because convergence of continental or oceanic margin has consumed, presently it has C-C convergence.

Along the margins of African and Eurasian plates volcanic plates like strombli, etna, siciloi are found

Mechanism of Volcanism

Volcanism is the outcome of tectonic activity i.e. is propelled by heat inside the earth surface/asthenosphere and lubricated by the semi molten nature of the layer.

Movement can be take place in 2 ways

1) Convergence

2) Divergence

Intra Plate Volcanism

Vocanism can occur within the plate. These are called as hot sopt, hot spring etc

Hot Spot- These are regions on the surface of earth from where continuous magmatic flow occurs. The fissure zone is deep and connects to magma chamber from where basaltic flow occurs at frequent intervals. Such phenomena are seen in Swedan, southern Indian ocean like reunion hot spot, kerguden hot spot both are in southern Indian-ocean.

The saltic flow accumulates in the form of thin sheets resulting in the formation of plateaus these are called as Traps. A Swedish term for steps or stairs.

Hot Spring- The heat of internal rocks rise towards the surface resulting in the heating of ground water.

Volcanoes on Humans

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- 1) It add minerals
- 2) The orgin of atmosphere by the process of degasing
- 3) It can bring climatic changes
- 4) it reveals the internal composition of earth
- 5) It release extra energy of earth

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- 1) Mud flow
- 2) Causes of Earthquakes

Types of Volcano

- 1) Hawaiian type of Volcano- It's a quite lava eruption, is not explosive and lava flows in the form of thin sheets. It is darker in appearance
- 2) Stombolin- It has higher viscosity than Hawaiian
- 3) Vesuvian- It has more viscosity than strombolin. Lava is acidic and lighter in nature
- 4) Pilian- It is kind of explosive lava, has high acidic concentration. Gases forms a dense cloud about a volcano. Cloud is called a Neo-Ardente
5. Plenean- It is a most explosive volcano. It has silica content of about 90%. Mostly gases are emitted during this eruption.