

GEOLOGY

Notes by-

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MODES OF OCCURANCE OF INGEIOUS ROCK

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When lava/magma spreads out on the surfaces in the form of sheet, their structural character is similar to sedimentary rock. on the basis of the relationship of the intrusion with the bedding of country rock two types of intrusions are recognised -

1) Concordant :- Intrusion always keeps along bedding plane & does not cut across them.

2) Discordant :- When intrusion cuts across bedding plane.

Discordant intrusion is more common in nature :- Important.

Types of discordant intrusion :- 1) Batholiths / Major intrusion
2) Dykes / Minor intrusion

a) Discordant Intrusion

1) Batholiths / Bathyliths / Major intrusion :- These are the major intrusions that takes place when a huge body of magma is intruded as plutonic rock. They are the largest bodies of igneous rocks known & occur in the central part of mountains like the Himalaya & Alps made up of folded & rocks.

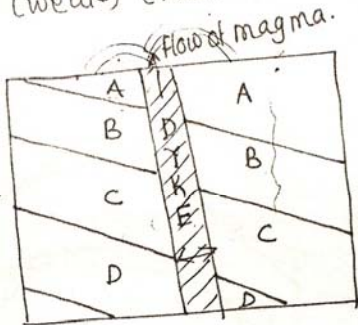
2) Dykes : Minor intrusion :-

Dykes are wall like masses of igneous rock cutting across bedding planes & are formed by injection of magma along tensional (weak) crack. As they occupy tensional cracks, they are usually vertical or steeply inclined.

[Thk. of dykes varies from few cm to 100 m.]

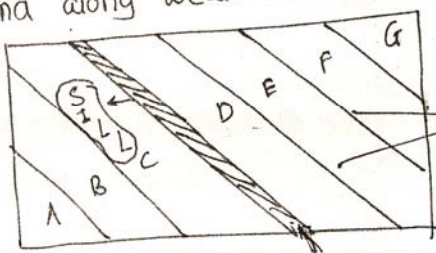
Dyke swarm :- Large numbers of dyke occurs in an area, they are known as "dyke swarm".

They cuts bedding plane
∴ Discordant



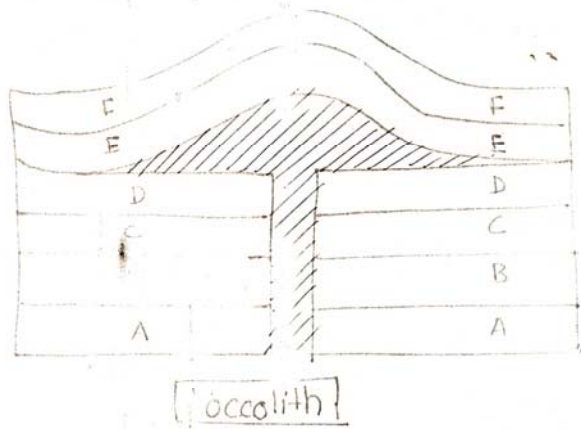
b) Concordant Intrusion :-

1) Sills :- Sills are common concordant intrusion. They are parallel tubular sheet to bedding planes & have small thickness compared to their lateral extent. Sills are formed by the injection of fluid magma along weak bedding planes

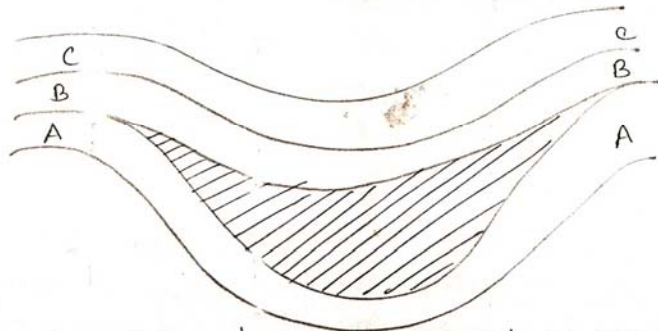


Bedding planes.
Magma.

② Loccolith:- If magma is viscous, instead of flowing along bedding plane to form a sill it tends to pile up uparching & above lying beds. Thus instead of sill with parallel walls is produced a concordant intrusion with a domeshaped roof & a flat bottom. Such a intrusion is called as loccolith.



③ Lopolith:- Basin shaped concordant intrusion



④ Phacoliths:- lens shaped concordant intrusion of igneous rock.

