

RELATIVE AGES OF ROCKS

Principles

Principle of original horizontality

Sedimentary strata are horizontal, or nearly so, when deposited. Strata that are not horizontal have been deformed by movements of the earth's crust.

Principle of superposition

In any section of undisturbed sedimentary strata the oldest stratum is at the base and the youngest is at the top. The order of deposition is from the bottom upward.

Principle of cross-cutting relationships

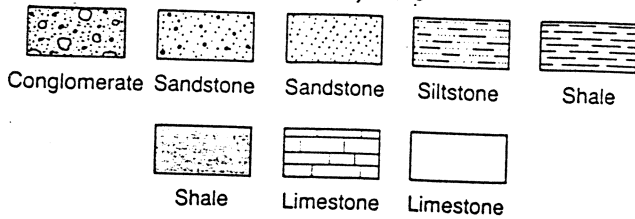
A rock body (or feature) that cuts across another rock body (or feature) is the younger of the two.

Principle of inclusion

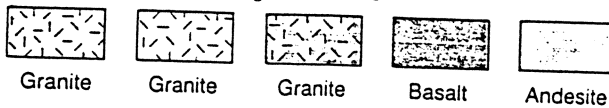
A rock body that contains inclusions (unmelted fragments, boulders, etc.) of pre-existing rock is younger than the rocks from which the inclusions were derived.

KEY TO SYMBOLS

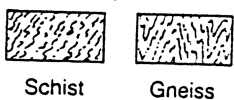
Sedimentary rocks



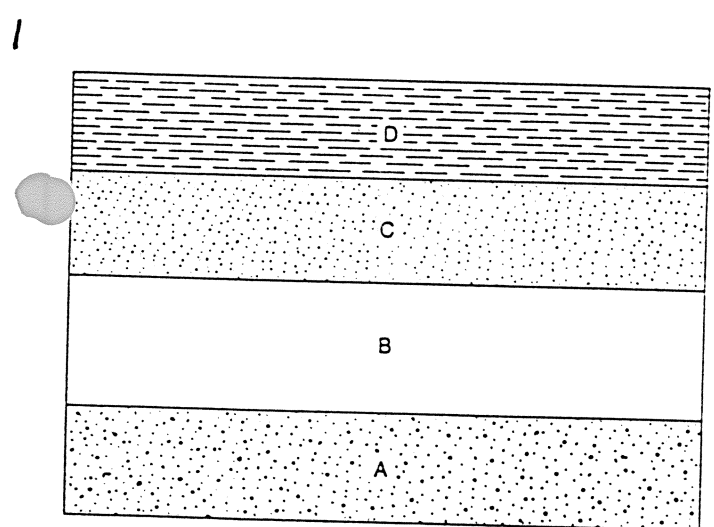
Igneous rocks



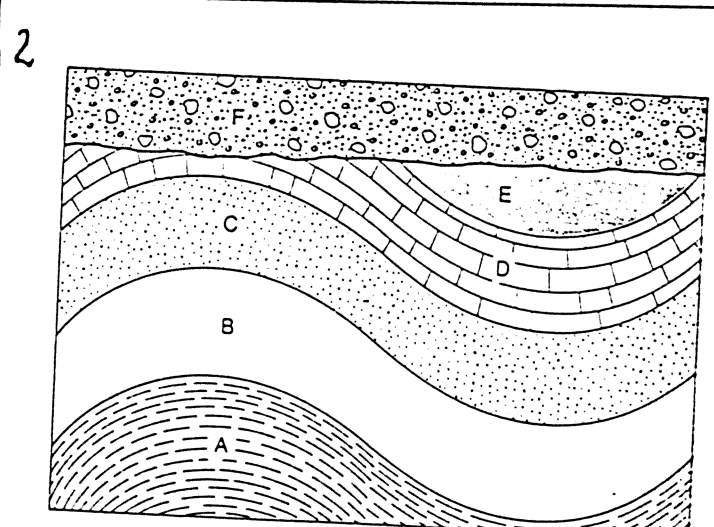
Metamorphic rocks



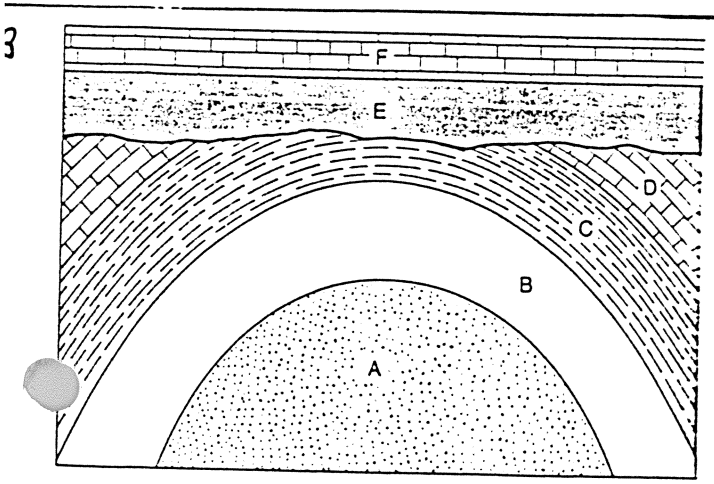
Other features



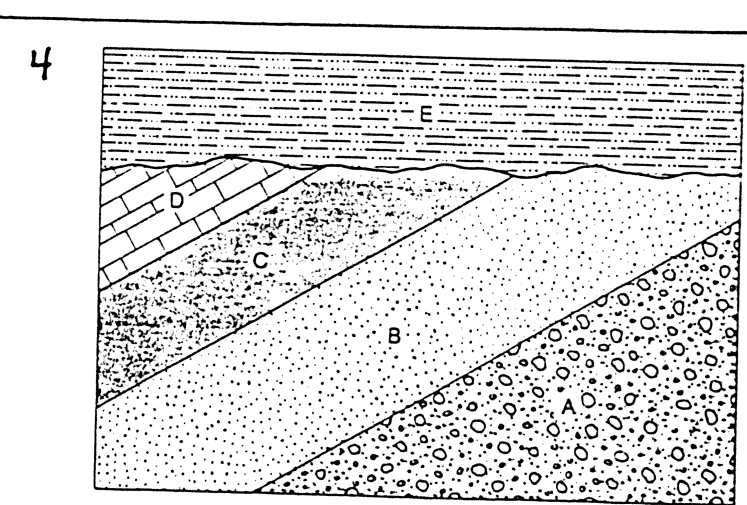
Layer A is the oldest rock; layer D is the youngest.



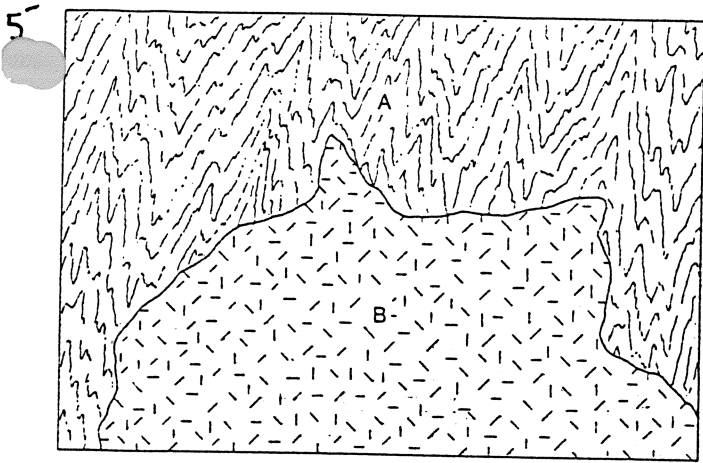
Layer A is the oldest; layer F is the youngest. Folding and erosion occurred after E, but before F.



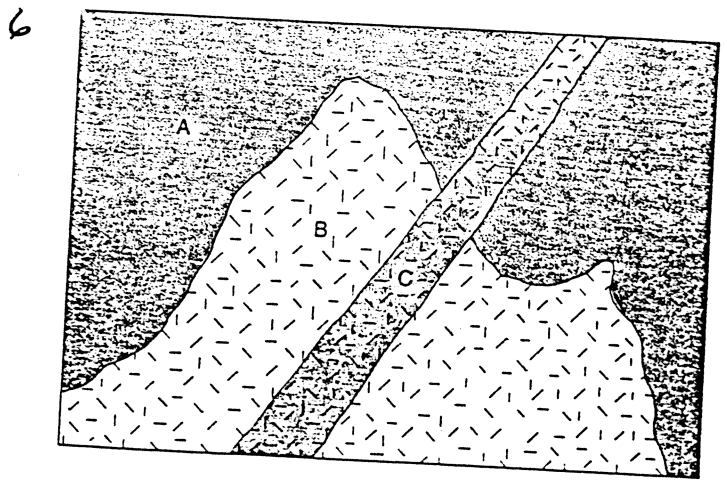
Formation A is the oldest; formation F is the youngest. Folding and erosion occurred after D, but before E.



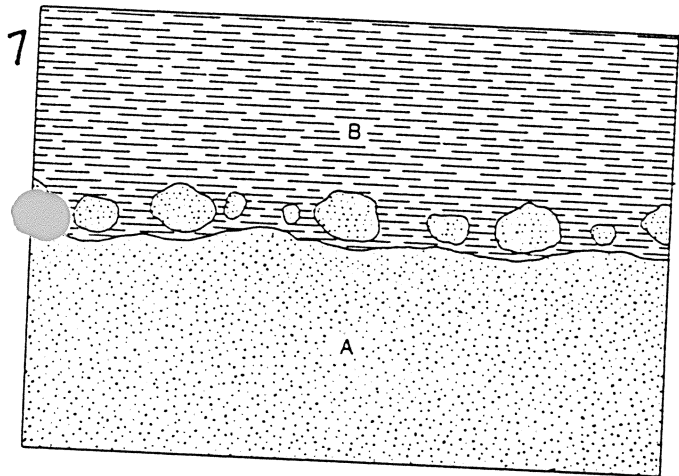
Formation A is the oldest; formation E is the youngest. Tilting and erosion occurred after D, but before E.



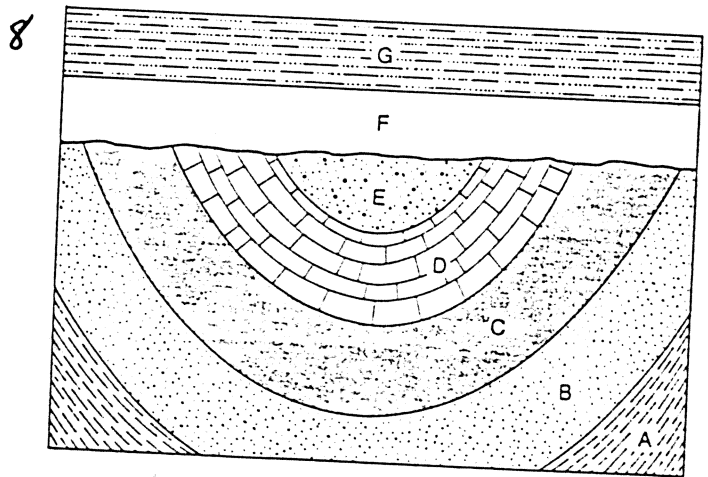
Granite B is younger than country rock A.



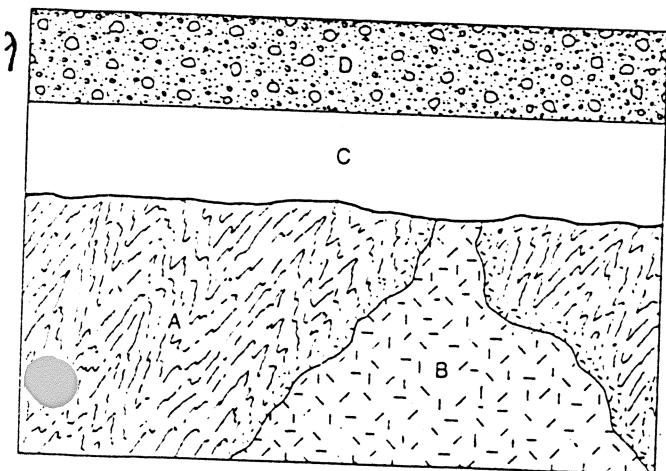
Granite B is younger than country rock A; dike C is younger than B.



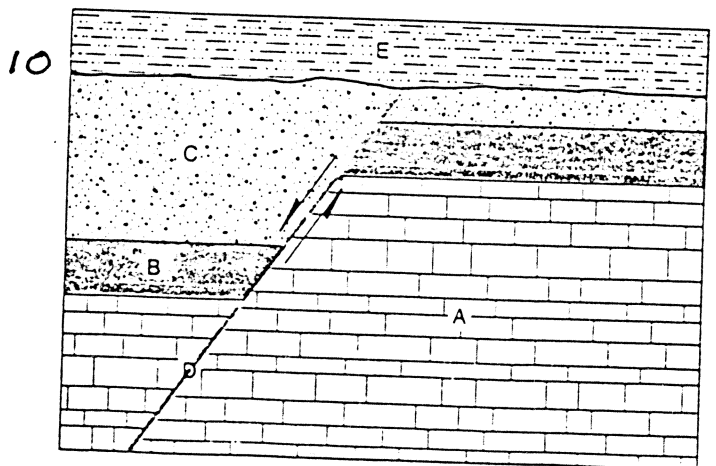
Formation A is the older; formation B is the younger. Erosion occurred after A, but before B.



Formation A is the oldest; formation G is the youngest. Folding and erosion occurred after E, but before F.



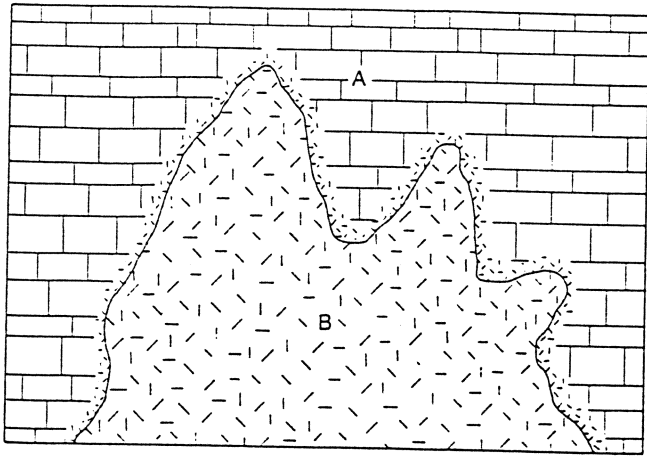
Schist A is older than granite B; B is older than formation C.



Formation A is the oldest; formation E is the youngest. Fault D is younger than C, but older than E.

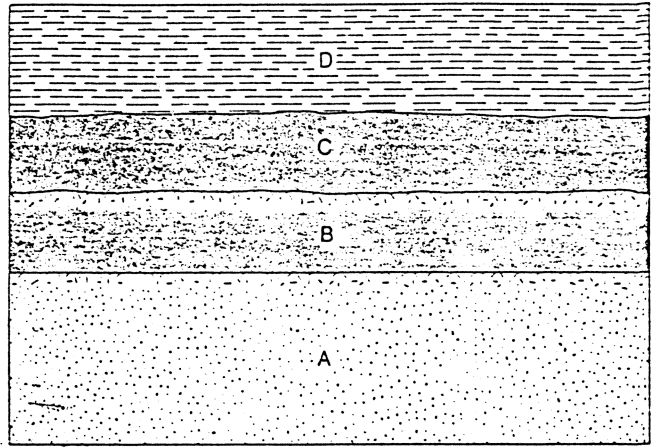
E
D
C
B
A

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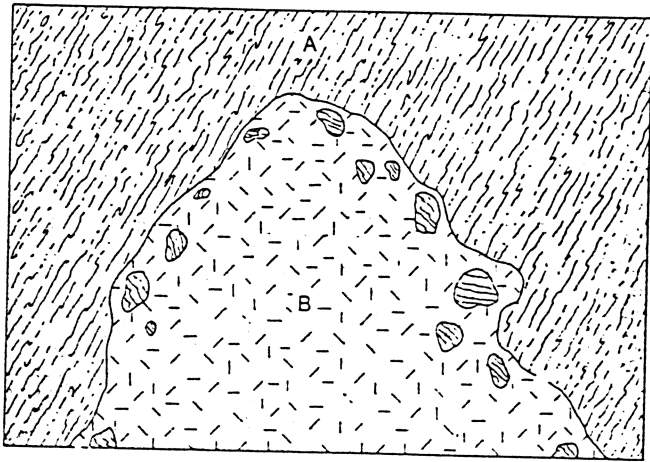
Granite B is younger than contact-metamorphosed country rock A.

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Lava flow B is younger than country rock A; lava flow C is younger than B; formation D is younger than C.

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Granite B is younger than country rock A.

