

Primary Structures



Earth Structure (2nd Edition), 2004
W.W. Norton & Co, New York
Slide show by Ben van der Pluijm

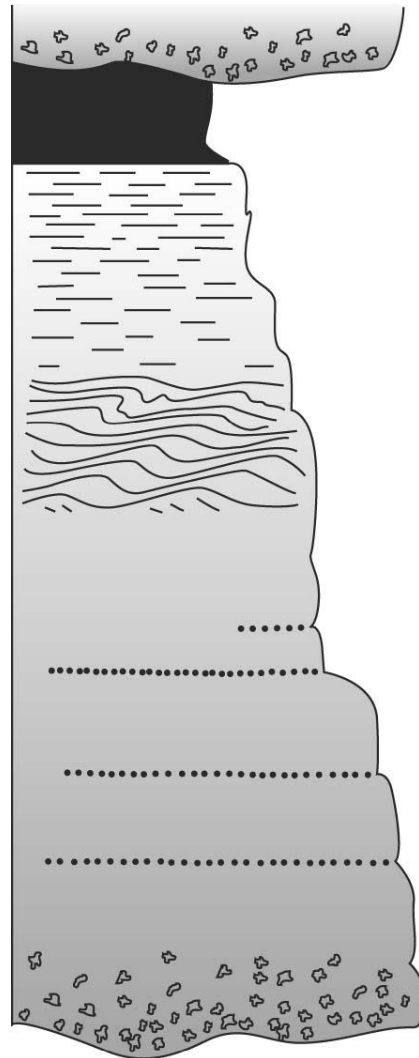
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Stratigraphic Facing



- a. Ripple marks
- b. Cross beds (AZ)
- c. Pillow basalt (CA)

Turbidites



E (h) Hemipelagic mud

E (t) Turbidite mud

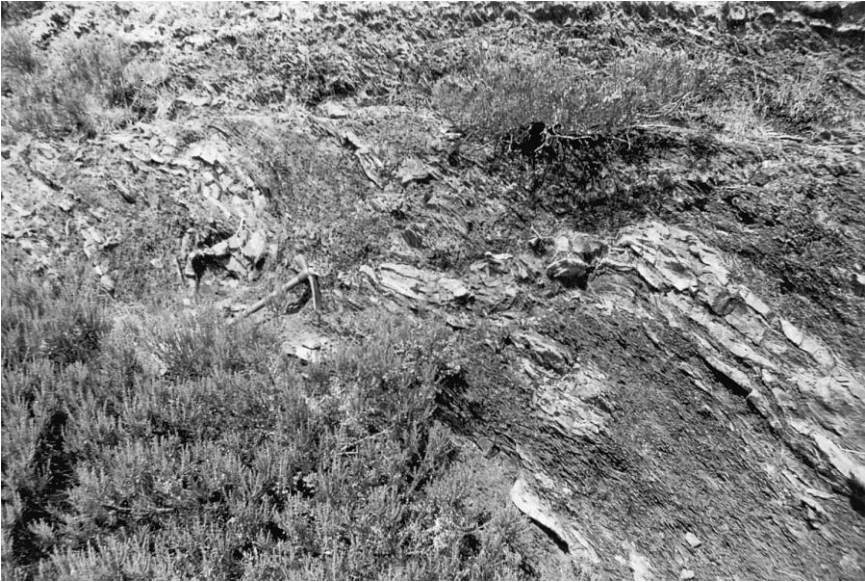
(D)

C Rippled bed,
convoluted laminae

B Planar laminae

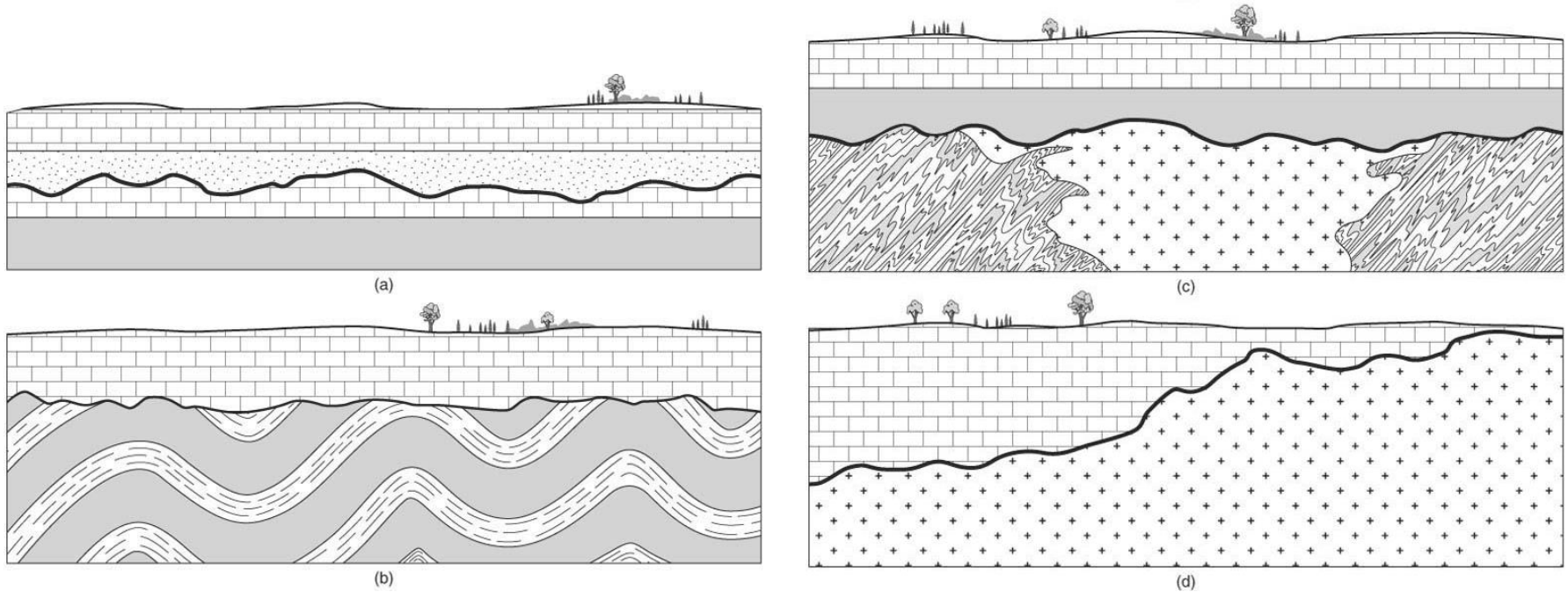
A Massive,
graded bed

Other primary structures



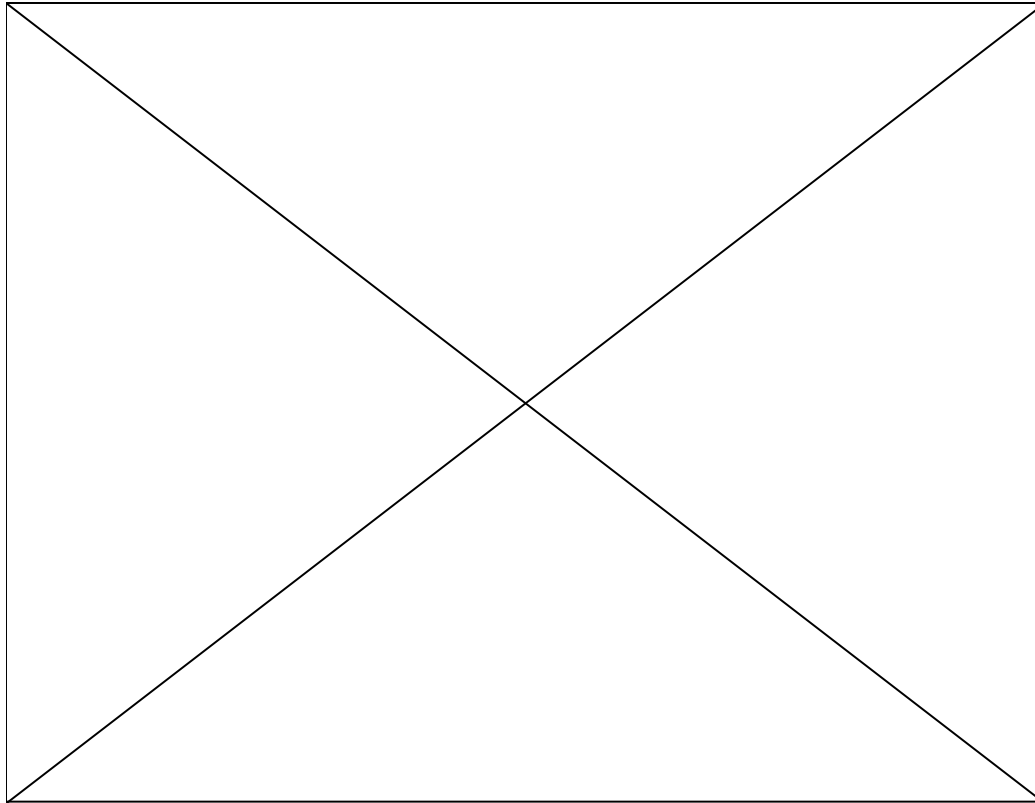
- a. Disrupted bedding (Spain)
- b. Load casts (Germany)
- c. Clastic Dyke (Canada)

Types of Unconformities



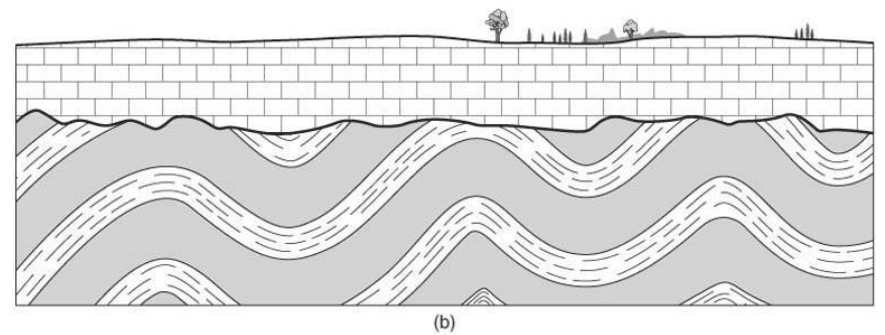
- a. Disconformity
- b. Angular unconformity
- c. Nonconformity
- d. Buttress unconformity

Unconformities

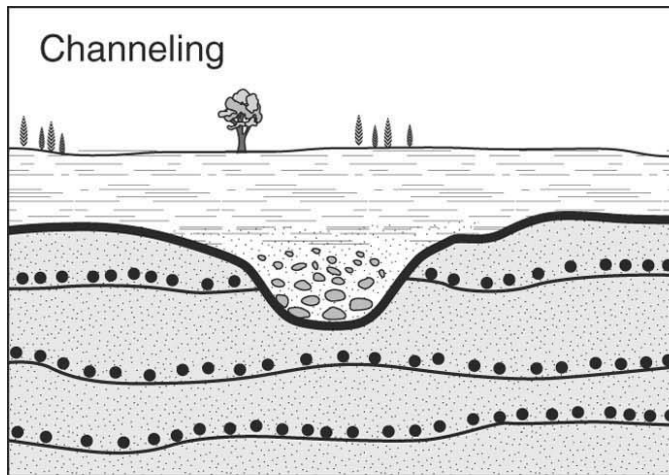


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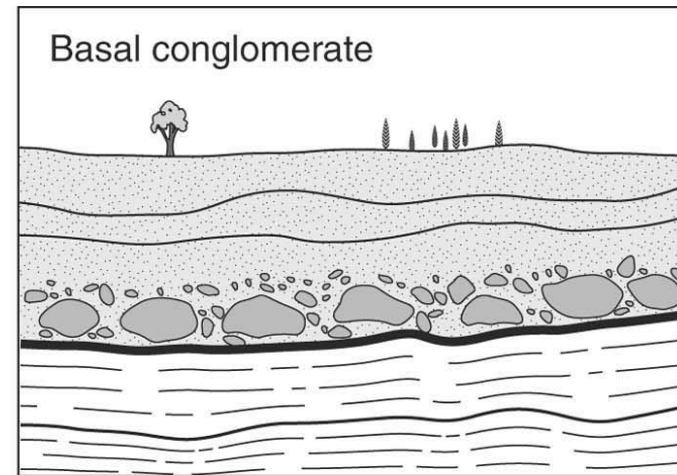
Angular Unconformities



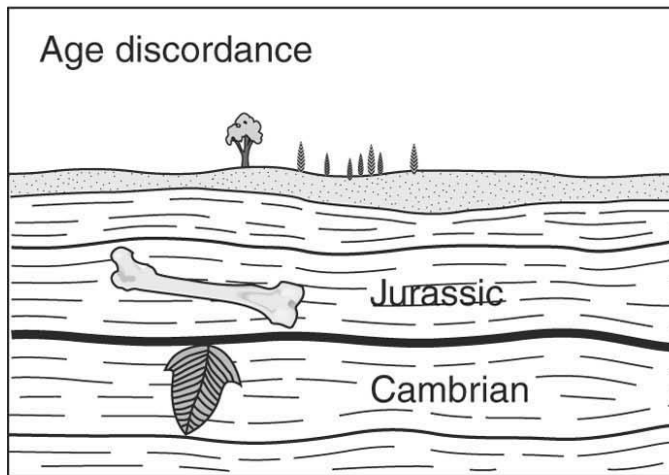
Identifying unconformities



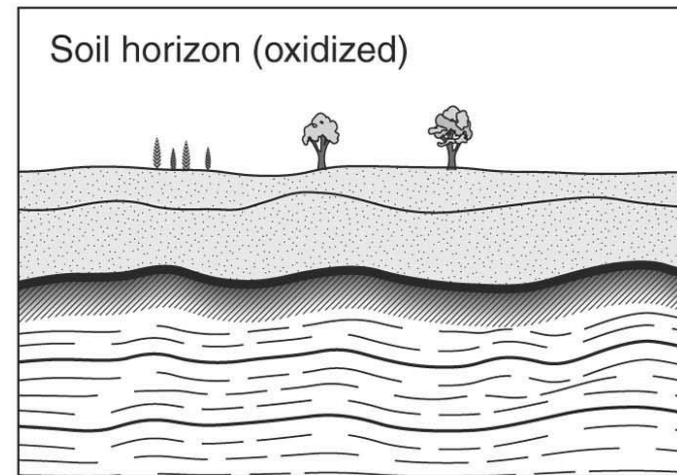
(a)



(b)

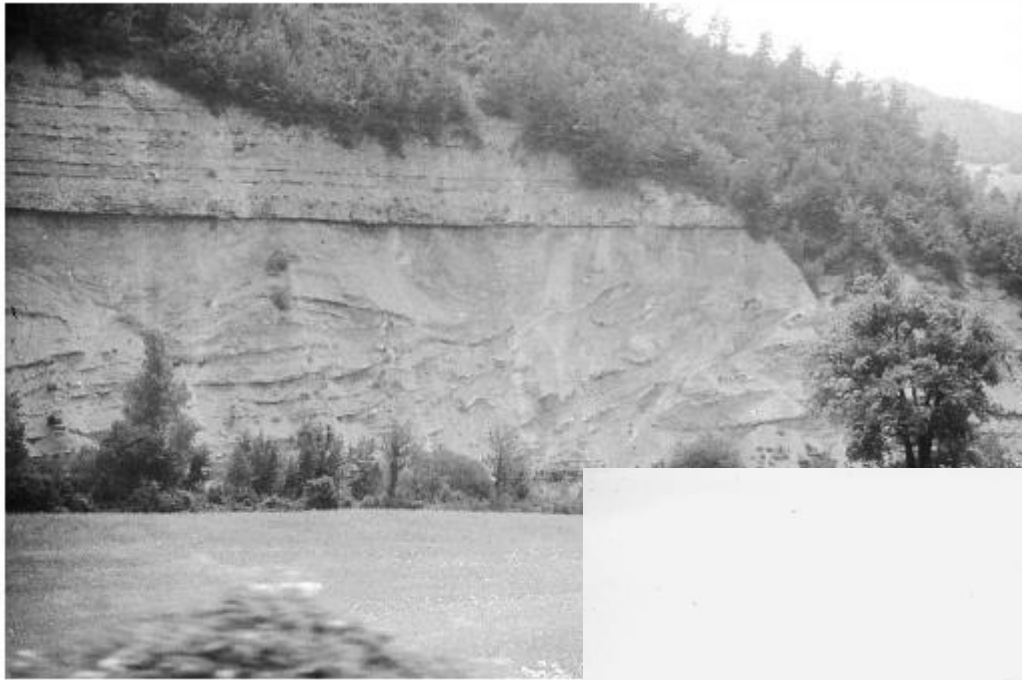


(c)

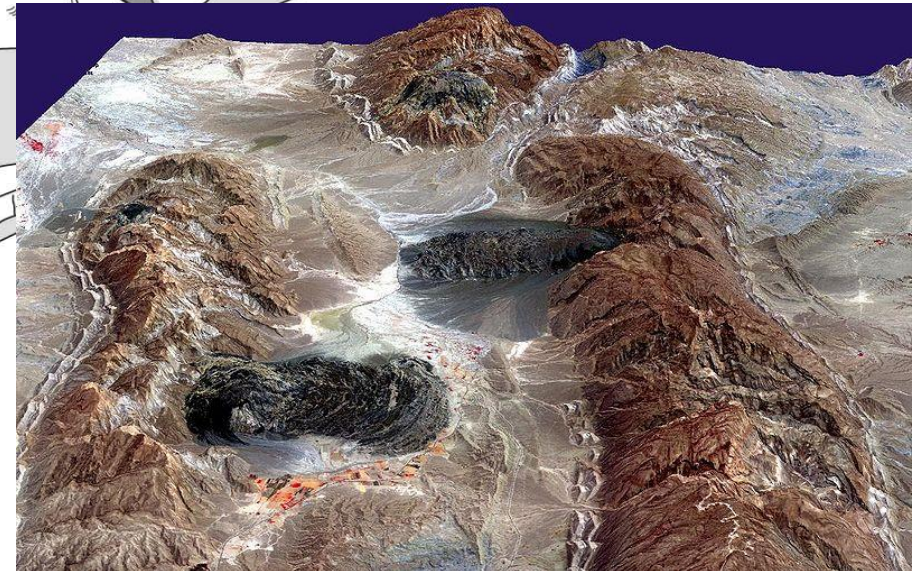
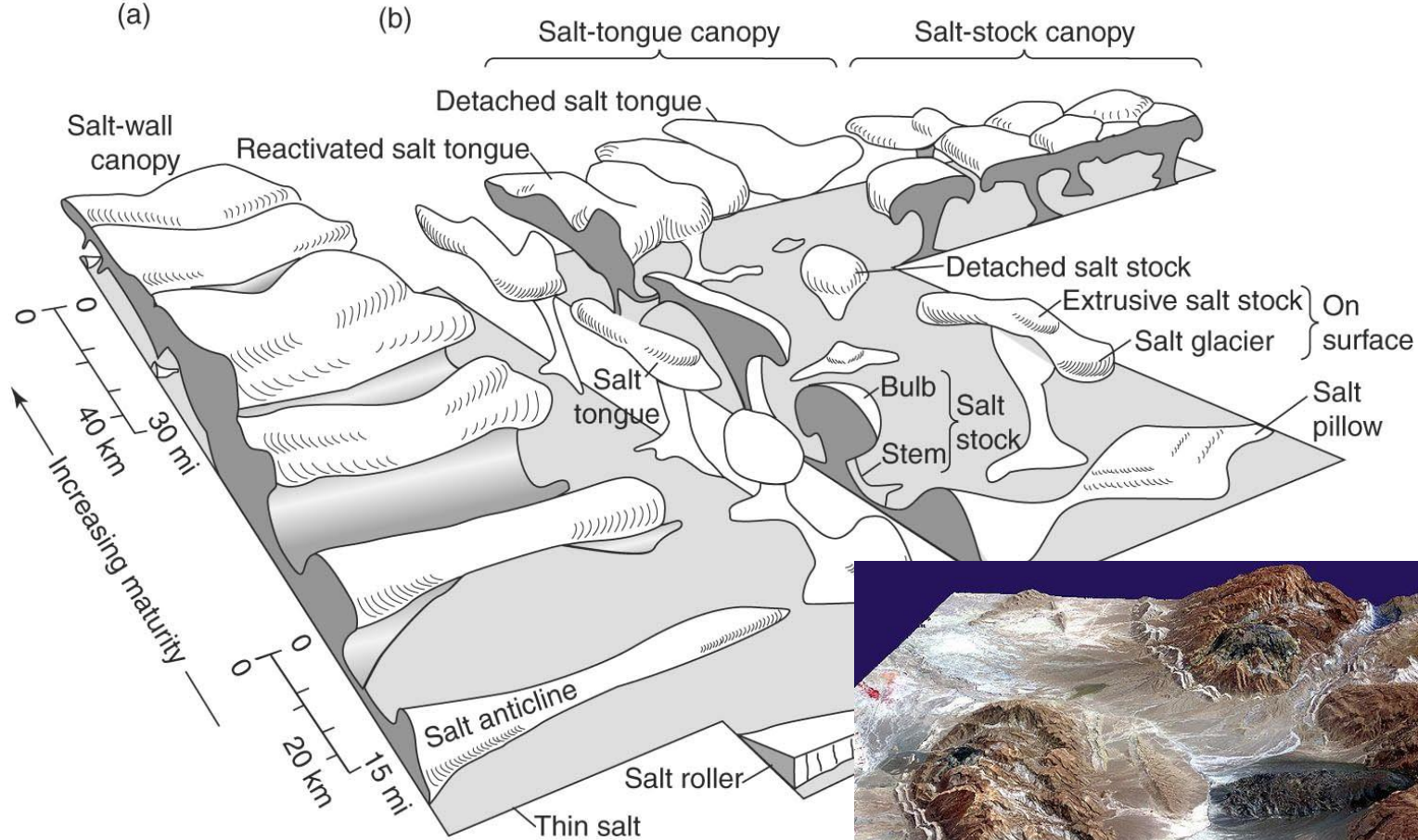


(d)

Penecontemporaneous structures

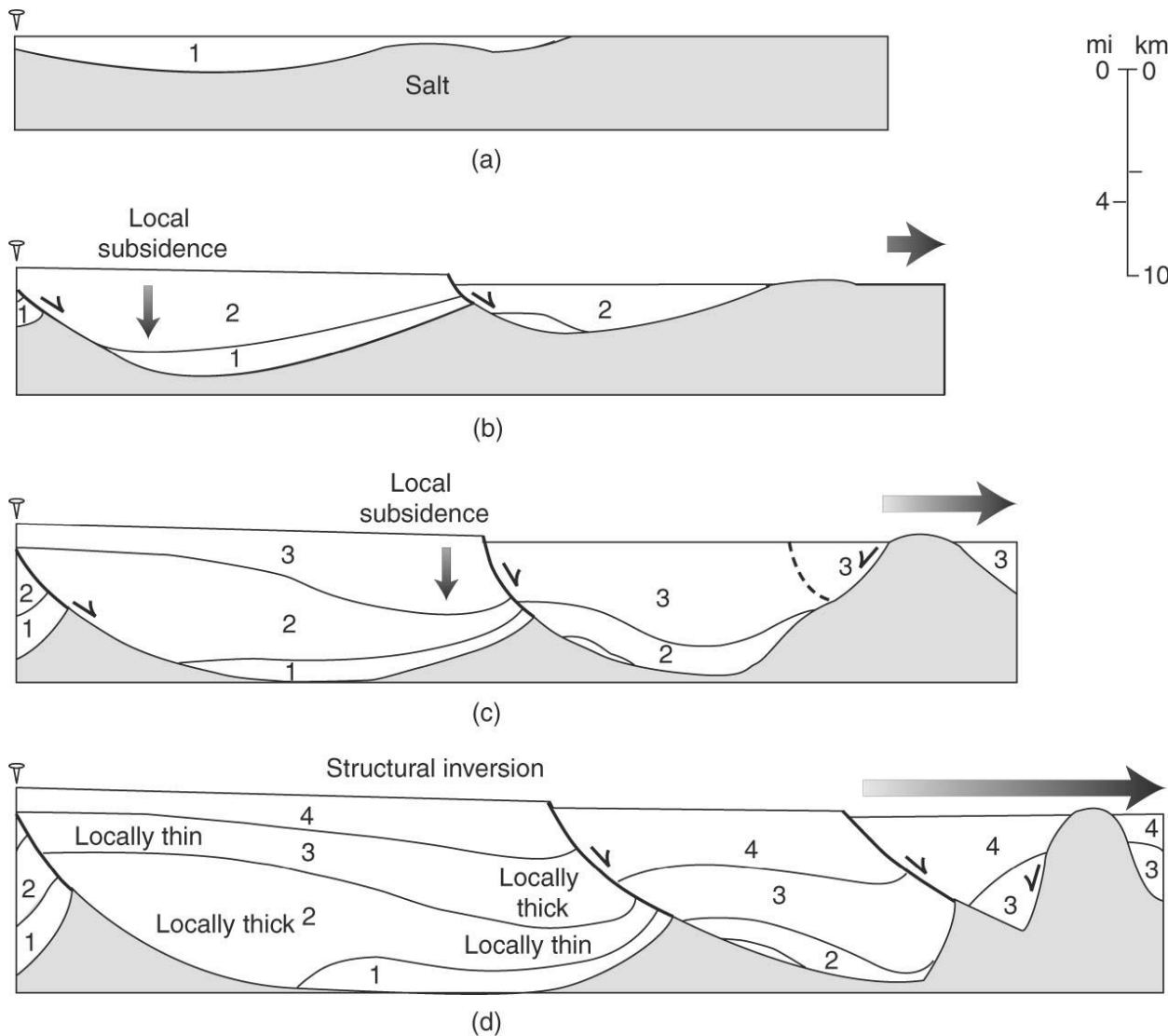


Salt structures



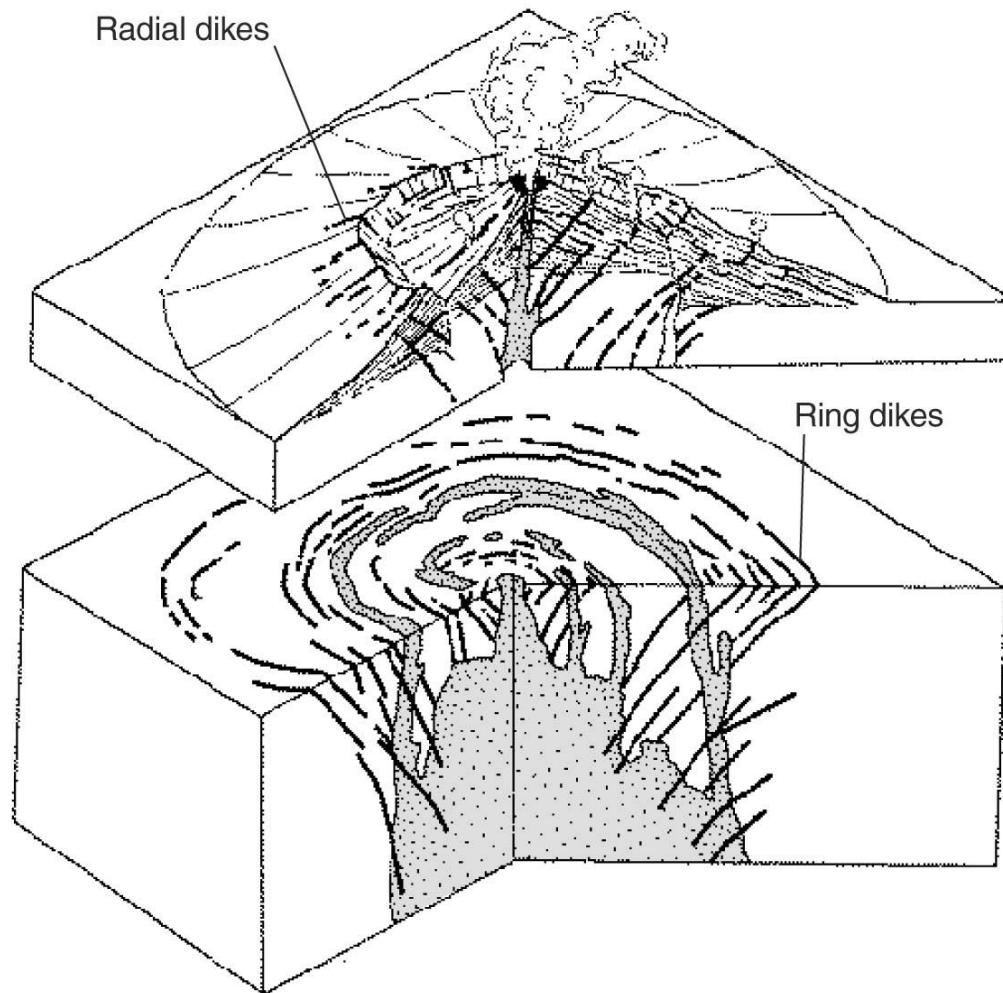
Stages in the formation of salt structures and associated terminology. Structural maturity and size increase toward the structures in the rear. Sequence in (a) shows structures rising from line sources, whereas structures in (b) originate from point sources.

Salt-linked deformation



Cross sections showing “down-to-Gulf” type movement of a passive-margin salt wedge; the sections also show listric normal faults and salt rollers. The sequence (a) through (d) shows successive stages in the evolution of the margin, and accompanying extension.

Igneous structures



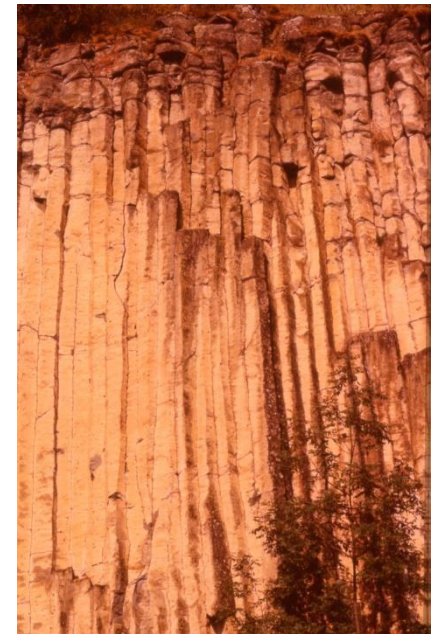
Types of sheet intrusions around a volcano

TABLE 2.6

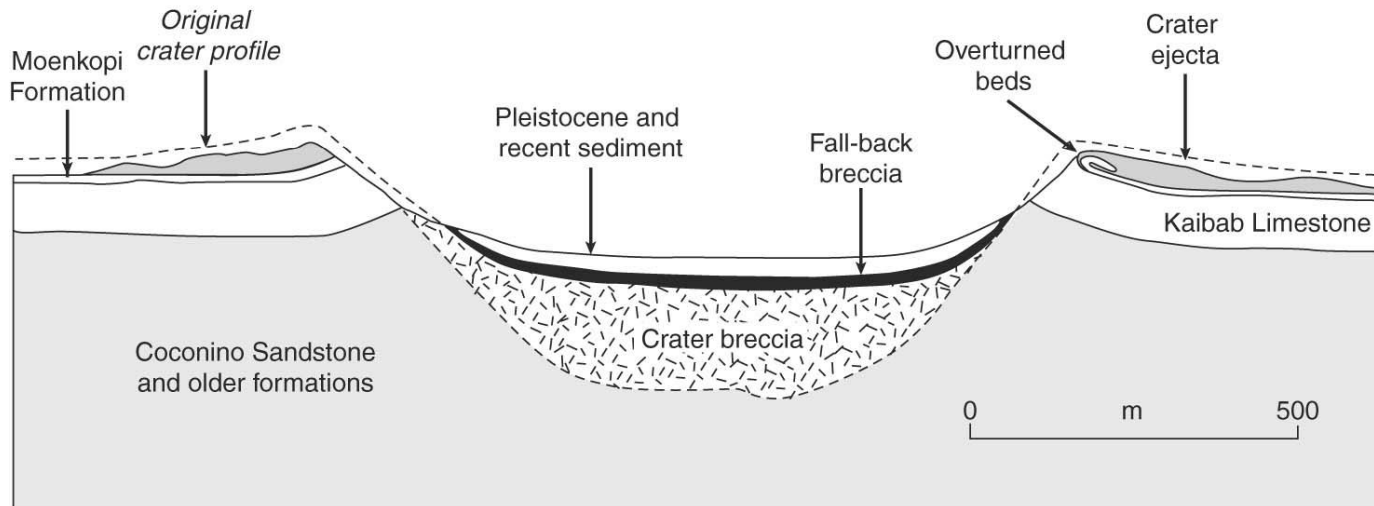
TERMINOLOGY OF IGNEOUS INTRUSIONS

Batholith	A huge bloblike intrusion; usually a composite of many plutons.
Dike	A sheet intrusion that cross cuts stratification in a stratified sequence, or is roughly vertical in an unstratified sequence.
Hypabyssal	An intrusion formed in the upper few km of the Earth's crust; hypabyssal intrusions cool relatively quickly, and thus are generally fine grained.
Laccolith	A hypabyssal intrusion that is concordant with strata at its base, but bows up overlying strata into a dome or arch.
Pluton	A moderate-sized bloblike intrusion (several km in diameter). Sometimes the term is used in a general sense to refer to any intrusion, regardless of shape or size.
Sill	A sheet intrusion that parallels preexisting stratification in a stratified sequence, or is roughly subhorizontal in an unstratified sequence.
Stock	A small, bloblike intrusion (a few km in diameter).

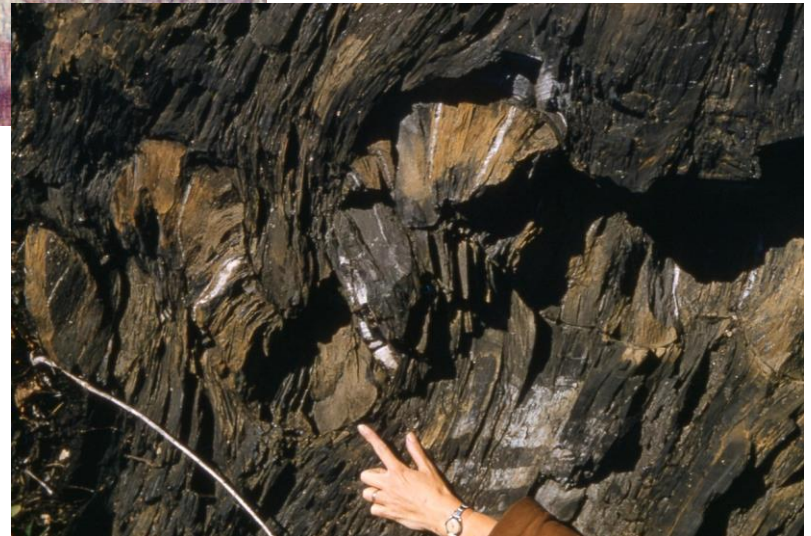
Igneous structures



Impact structures



Deformation structures





Extra

Pitted Pebbles



Salt dome

