Sedimentary Rocks

Sedimentary Rock Types

Clastic

- Breccia and Conglomerates
- Sandstone
- Shale

Chemical

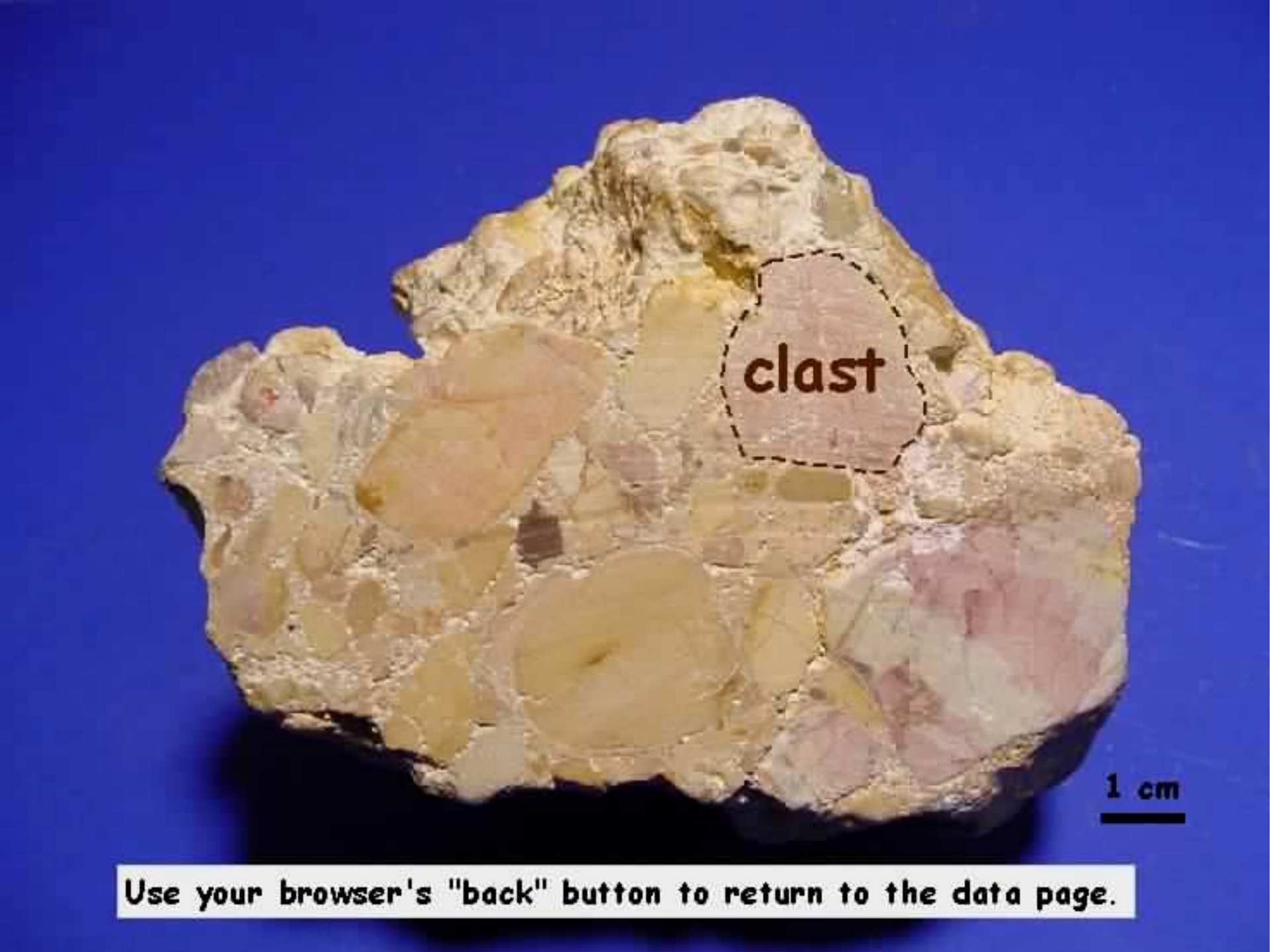
- Limestone
- Dolostone
- Evaporites
- Chert

Clastic

- Breccia and Conglomerates
- You Breccia!

Conglomerates

- Coarse-grained
- Cemented
- Assemblage of particles (Rounded!!)
- Contained within matrix (fine-material)



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Breccia

- Coarse-grained
- Cemented
- Assemblage of particles (Angular!!!)
- Contained within matrix (fine-material)

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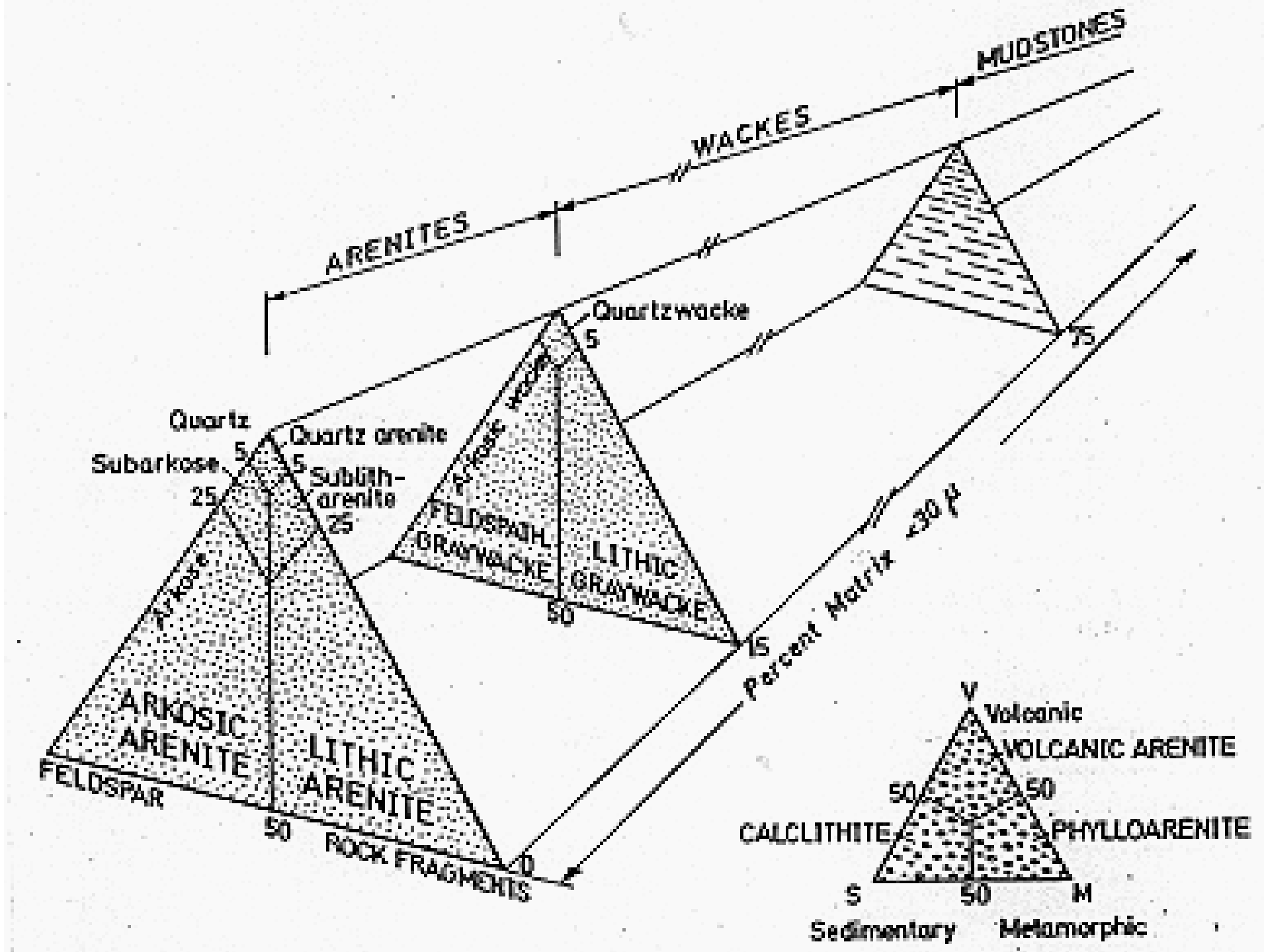
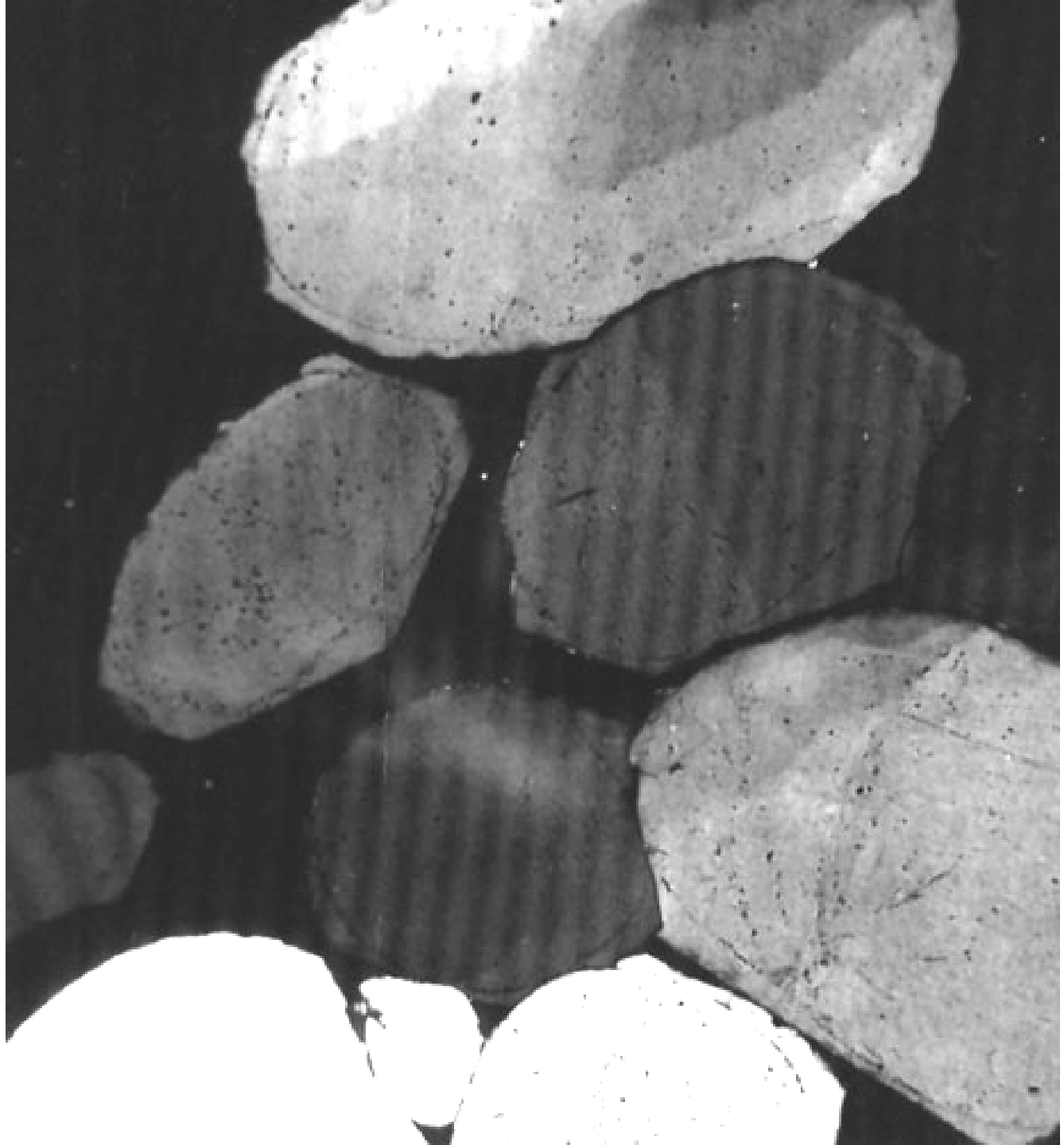
Sandstone

- Quartz
  - Silica-rich
- Arkosic
  - Feldspar-rich
- Wacke
  - Mud-rich


MUDSTONES
WACKES
ARENITES
Quartzwacke
5
75
Quartz
Quartz arenite
Subarkose
5
5
Sublith-
arenite
25
25
FELDSPATHIC GRAYWACKE
LITHIC GRAYWACKE
50
15
Percent Matrix ≥30 %
ARKOSIC ARENITE
LITHIC ARENITE
FELDSPAR
50
ROCK FRAGMENTS
0
V
Volcanic
VOLCANIC ARENITE
50
50
CALCLITHITE
PHYLLOARENITE
S
50
M
Sedimentary
Metamorphic

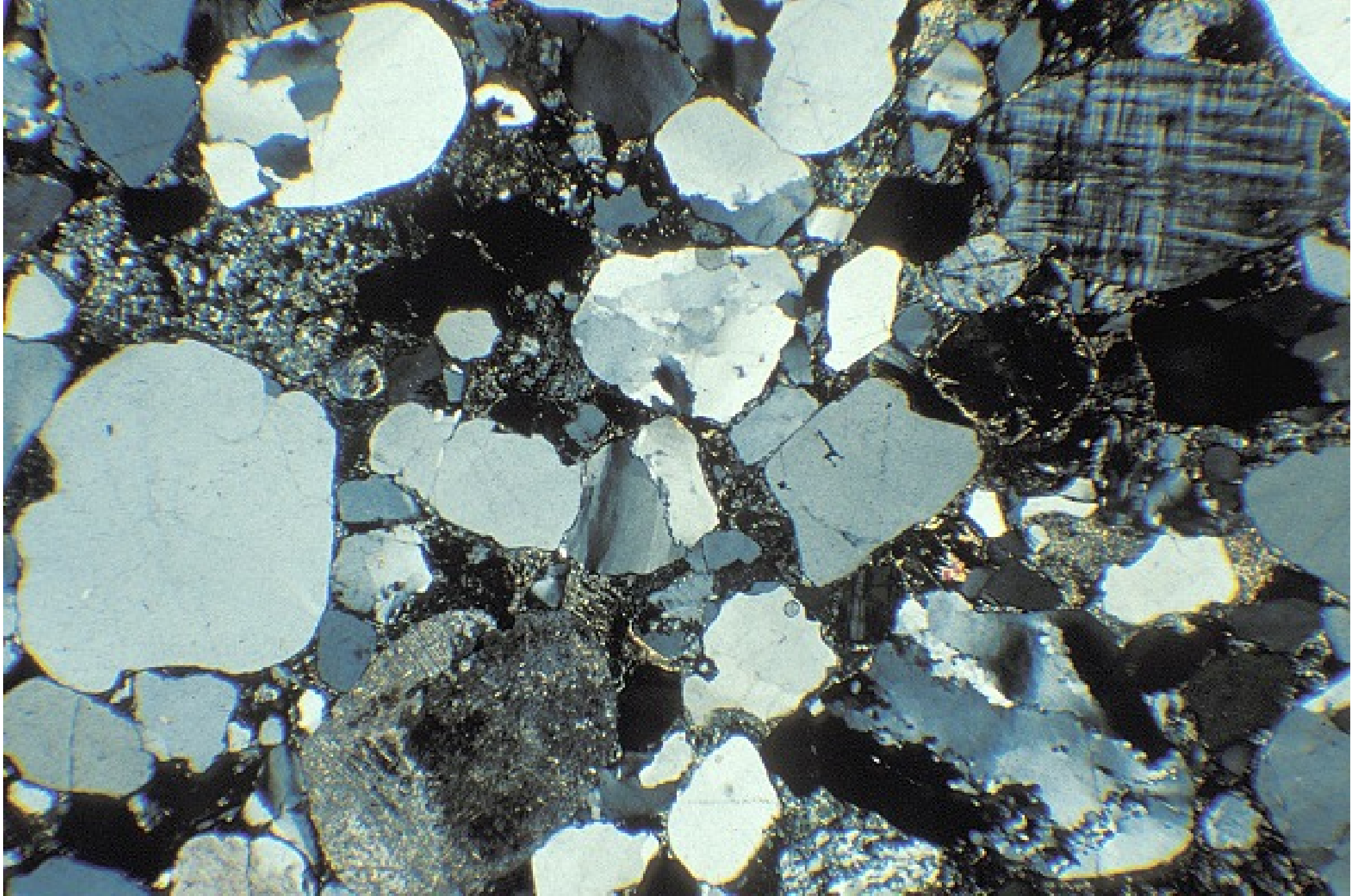
Quartz Sandstone

- X > 90% quartz
- Resistant to weathering
- EOD
  - Beach
  - Desert



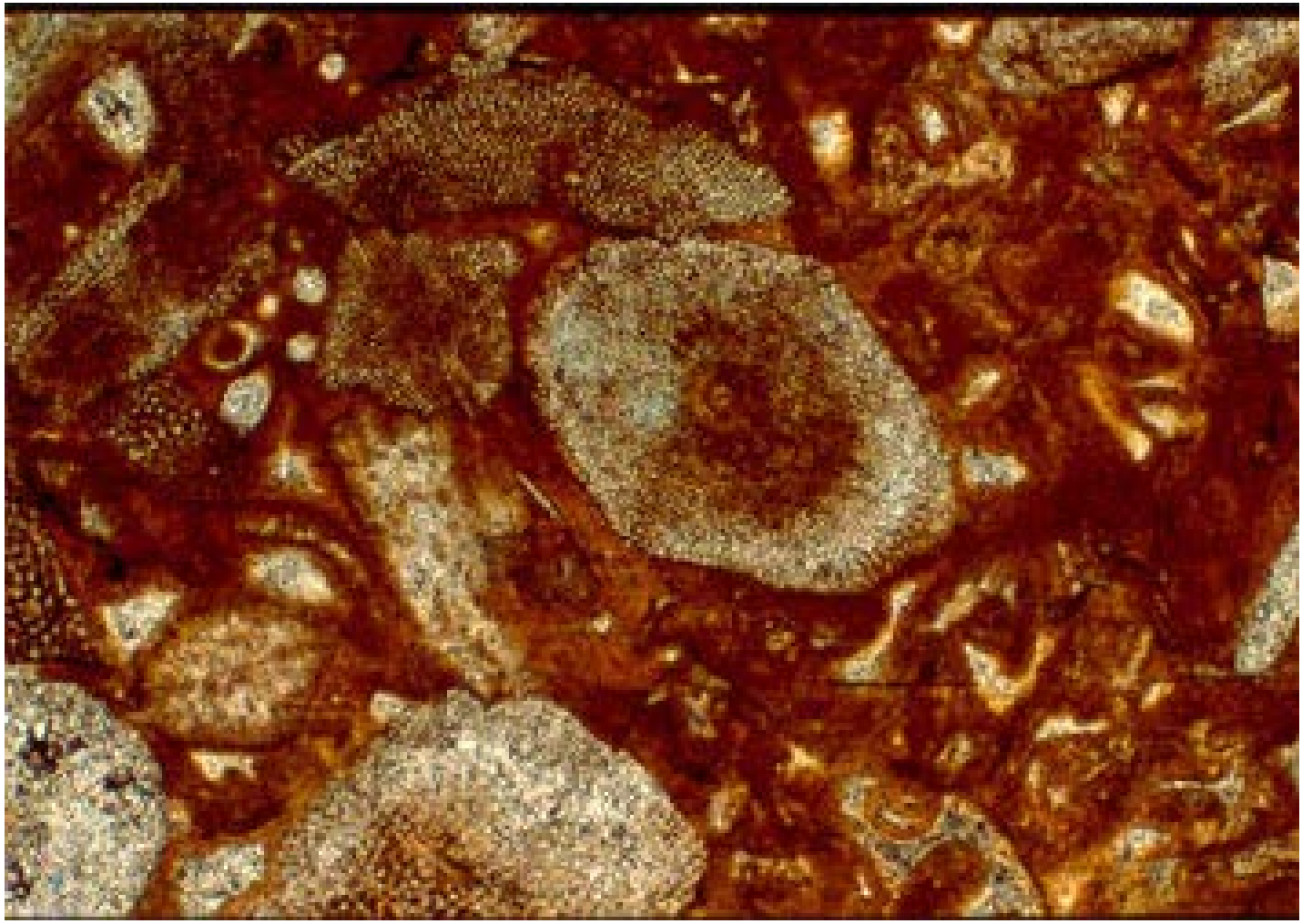
Arkose Sandstone

- X > 25% Feldspar
- Coarse angular grains
- Reddish / Pinkish
- EOD
  - New an igneous source



Wacke Sandstone

- Greywacke
- X > 15% clay/mud
- Dark to greenish
- EOD
  - Turbidity currents
- Also may contain feldspar and abundant quartz particles



Shale

- Fine-grained
- Fissile to massive
- Splitting
- EOD
  - Energy?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Chemical Sedimentary Rocks

- Limestone
- Dolostone
- Evaporites
- Chert

Limestone

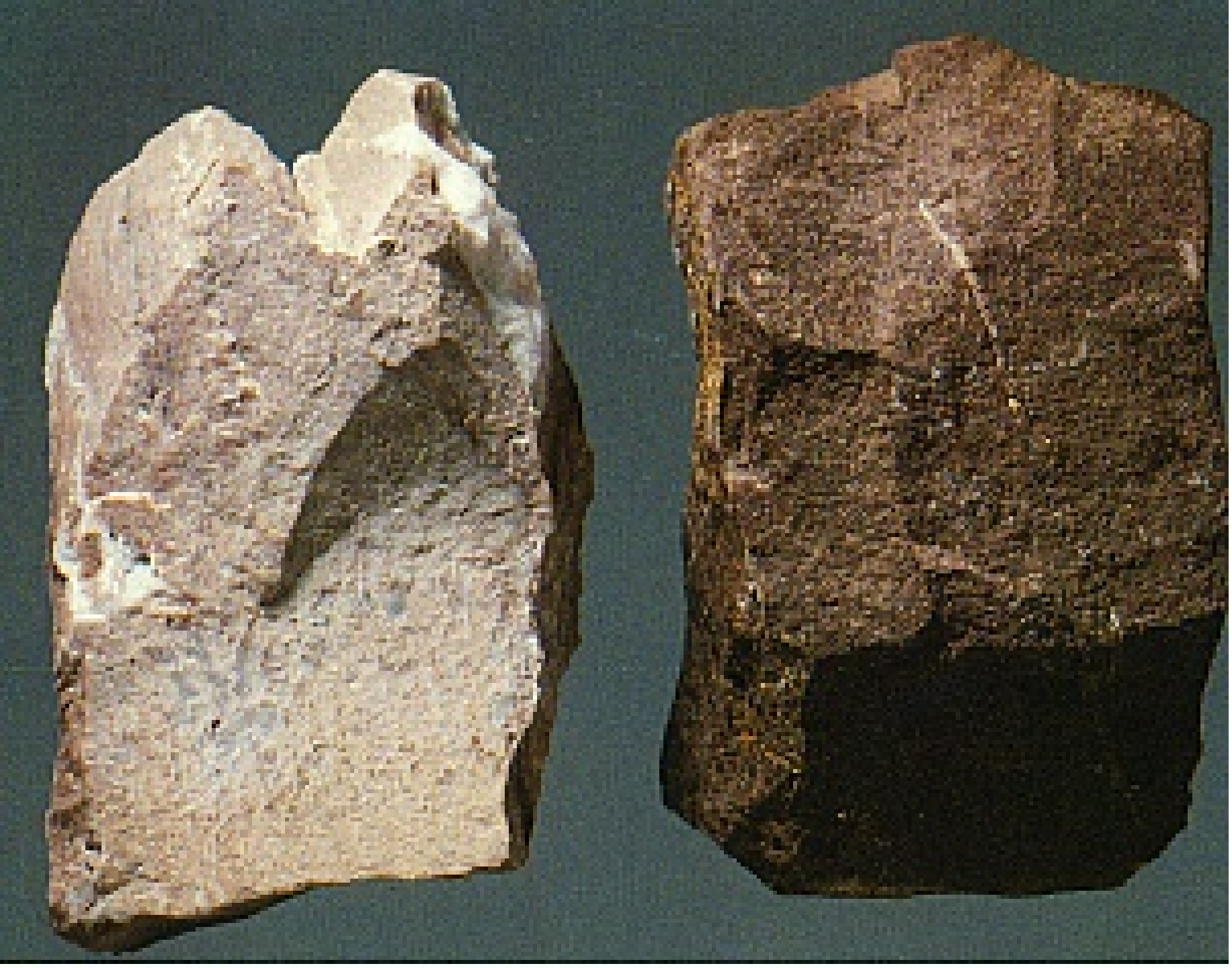
- Biochemical processes
  - Weathered biologic material (shells, coral, algae)
  - $CaCO_3$, broken down and deposited on the sea-floor
  - Compaction
  - Presto, a Varity of Limestone

Coquina


INCHES
1
2

Dolostone

- Chemically altered limestone
- Calcium is partially replaced by Magnesium
  - $CaMg(CO3)2$
- Form by
  - Magnesium-rich brine
  - Reactions between fresh and sea water environments.



Chert

- Silica
- Types
  - Layers
  - Nodules
- Occur often within limestone
- No one has explained how it is precisely formed, Yet!
- Flint

Evaporites

- Rock salt
- Rock gypsum
- Crystalline structure