Environmental Geology

Lecture 5

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Texture

- There are two major types of texture in sedimentary rocks clastic and nonclastic
- 1- Clastic texture (broken or fragmental)
- Texture shown by rocks that have been formed from deposits of mineral and rock fragments
- Biochemical sedimentary rocks may also show clastic texture as in the case of rocks made up of shell fragment.

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Texture

- 2- Nonclastic texture
- Grains usually crystalline (formed at the place of deposition)
- Depending on the size of crystal they divided into:
- 1- Coarse crystalline
- 2- Medium crystalline
- 3- Fine crystalline

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Lithification

- Lithification is the process by which the unconsolidated rock material is converted to consolidated coherent rock
- 1- Cementation
- When a binding agent
- Enters ground water and fill pore within the grain
- Thus cement (bind) the individual grains
- Convert sediment into rocks

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Lithification

- Agents of cementation
- -silica
- - calcite
- -dolomite
- -iron oxide
- Cementation occurs in
- Coarse grain
- Medium grain

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Lithification

- 2- Compaction
- Pore space reduced by pressure
- - by overlying sediments
- -by pressure resulting from earth movements
- As a result the coherence between the grain increse
- 3- Desiccation [The process by which water is driven out]
- Occurs as a result of
- - Compaction

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Lithification

- - Evaporation
- Cause
- - Increasing coherence between grains
- Occurs
- - In fine grained sediments (clay)
- 4- Crystallization
- Cause
- -Lithification
- - Crystallization

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Lithification

- Also serves to harden deposits that have been laid down by mechanical processes and sedimentation

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