



# Nebraska's Geology...

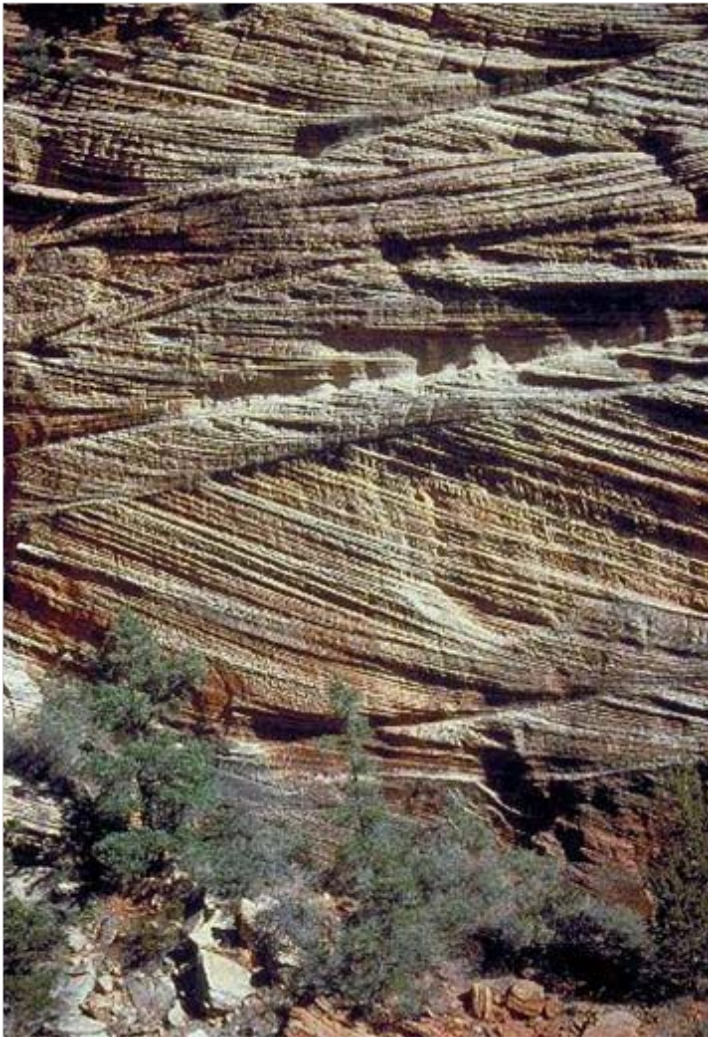
## Putting it all together.

- In the previous two presentations you've learned the basics of sedimentology and the geological history of Nebraska. NOW you'll be attempting to put what you learned into context with the physical evidence gathered in and around Nebraska.
- You'll be expected to examine rocks and pictures of rocks and give your best description of their type, the way they formed and with help the time period when they formed.... soooooooooo Here goes!!!!





# Rock number 1.....



- The particles in this material are about 2mm in size, they are well rounded, reddish in color and have very good cross bedding. What are they and how do you think they formed?
- Red sandstone, arid depos. Env., probably formed by alluvial means.(Dunes)





## Rock Number 2....



- This is a sample taken from a mauve/yellow fine grained (  $<1/16$  mm ) material, it reacts to H Cl, and contains fossil mollusk shells.
- Almost the entire rock is composed fo the shells of organisms
- It is a sample of a fossiliferous limestone.





## Rock Number 3.....

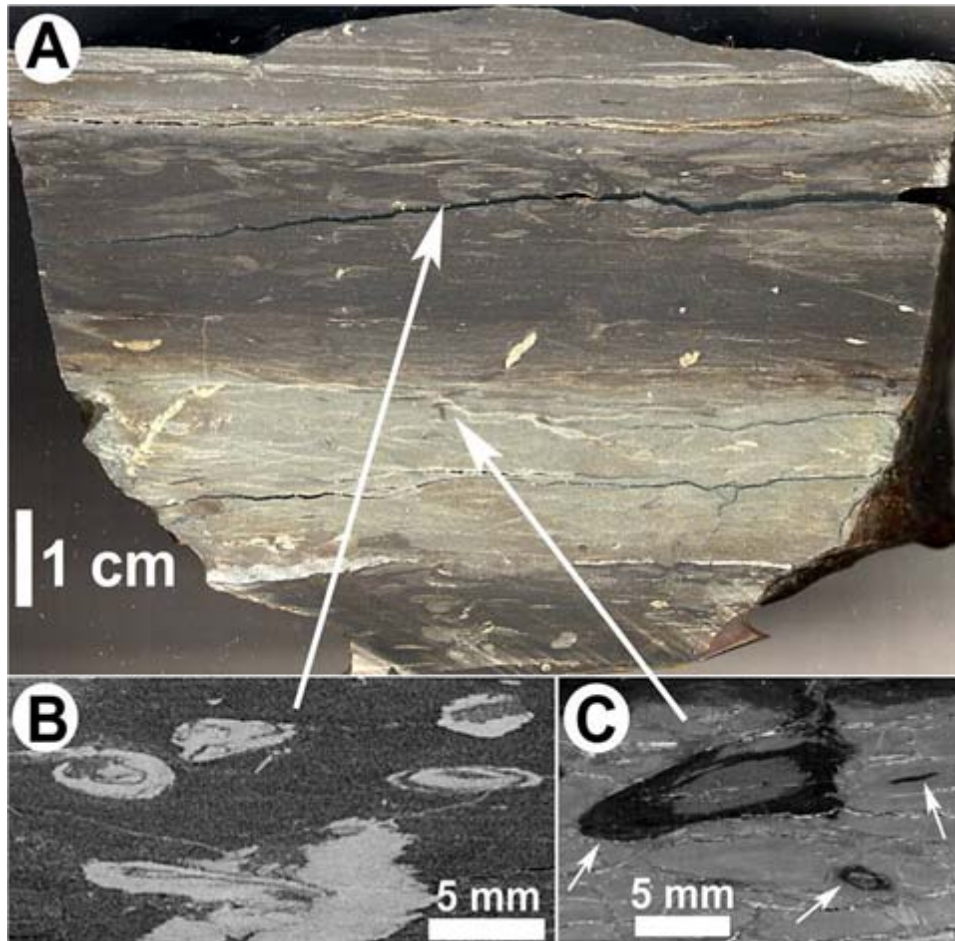


- This is a dark brown material, particles @2mm , with 'strange' ripple formations on it.
- This is a sample of fossilized fluvial ripples (shallow? Sea) the sea was apparently at least partly anoxic.. PS the direction of travel?? Rt to left?





# Rock Number 4.....



- Very fine grained bedded/layered material. With many fossil 'disturbances' in it. It is fairly soft rock.
- This is a shale with bioturbations in it. Some are tracks or fossilized parts of the organisms.





# Rock Number 5....



- This rock is actually in a very hard nodule that came from a softer, black material made of small particles that is well bedded.
- Fossil marine organisms from an anoxic deep ?? ocean environment.. an anoxic shale.





## Rock Number 6...



- Black well bedded, made up of small particles, contains some organics.
- Black shale, anoxic environment, possibly shallow sea/lake bed.





## Rock Number 7....



- Fine grained @2mm grains, loosely cemented. Well bedded alternating red/yellow beds.
- Iron rich/poor layers in a well banded sand stone, probably shallow lake or river, possibly alluvial deposit.







## Rock Number 8....



- Very fine grained material, reacts to H Cl, appears to have a fossil fish in it.
- Chalk or limestone with fossil embedded. Marine deposition.





## Rock Number 9....



- Fine (@2mm) grained, loosely consolidated material, green in color. Well banded, dark and light layers obvious.
- Green sandstone, probably of fluvial nature, anoxic ? Environment? Possibly terrestrial in nature?





## Rock Number 10....



- Very fine grained, soft material, does not react to H Cl. No obvious layering no fossils visible.
- A soft white mud or silt stone. Formed in marine environment.





# SOOOOOO how did you do?

- Note: It takes years to become a geologist and LOTS of learning. But with time and practice you should be more easily able to identify many types of sedimentary rocks and get an idea of where and how they formed.
- Learning about stratigraphy (the way rocks are bedded) you can learn to identify rock groups and from known data figure out how old they are and if there might be anything 'hidden' in them.
- Geology is one of the most exciting and fastest growing professions in the world of science. DIG IT!!!

