

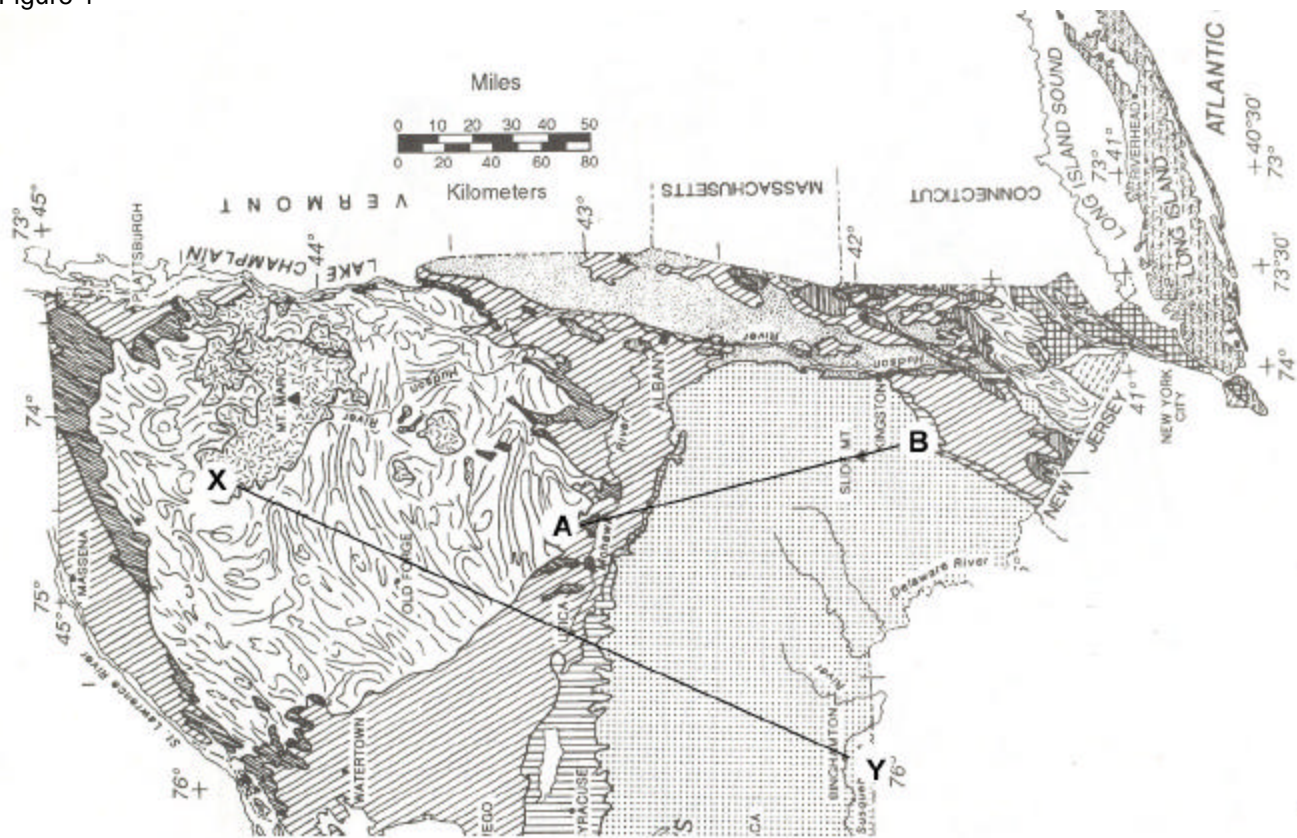
Regents Earth Science NY Geologic X-Section

Name _____

Period _____

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Figure 1



GEOLOGICAL PERIODS AND ERAS IN NEW YORK

| | | |
|--|---|---|
| | CRETACEOUS, TERTIARY, PLEISTOCENE (Epoch) weakly consolidated to unconsolidated gravels, sands, and clays | } Dominantly Sedimentary Origin |
| | LATE TRIASSIC and EARLY JURASSIC conglomerates, red sandstones, red shales, and diabase (in Palisades Sill) | |
| | PENNSYLVANIAN and MISSISSIPPIAN conglomerates, sandstones, and shales | |
| | DEVONIAN } limestones, shales, sandstones, and conglomerates | |
| | SILURIAN } Silurian also contains salt, gypsum, and hematite. | |
| | ORDOVICIAN } limestones, shales, sandstones, and dolostones | |
| | CAMBRIAN } limestones, shales, sandstones, and dolostones | } Dominantly Metamorphosed Rocks |
| | CAMBRIAN and EARLY ORDOVICIAN sandstones and dolostones <i>Moderately to intensely metamorphosed east of the Hudson River.</i> | |
| | CAMBRIAN and ORDOVICIAN (undifferentiated) quartzites, dolostones, marbles, and schists <i>Intensely metamorphosed; includes portions of the Taconic Sequence and Cortlandt Complex.</i> | |
| | TACONIC SEQUENCE sandstones, shales, and slates <i>Slightly to intensely metamorphosed rocks of CAMBRIAN through MIDDLE ORDOVICIAN ages.</i> | |
| | MIDDLE PROTEROZOIC gneisses, quartzites, and marbles <i>Lines are generalized structure trends.</i> | |
| | MIDDLE PROTEROZOIC anorthositic rocks | } Intensely Metamorphosed Rocks (regional metamorphism about 1,000 m.y.a.) |

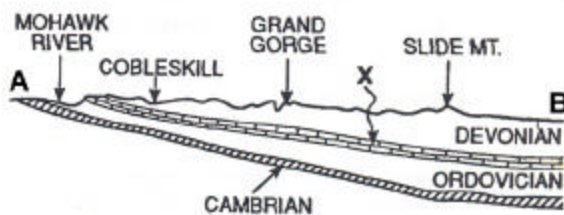


Figure 2. Cross section from A to B

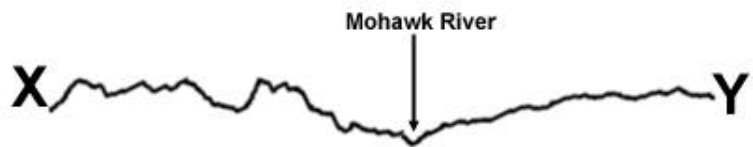


Figure 3. Surface topography from X to Y. YOU draw the cross section on this diagram!

Directions:

Get out your Reference Tables and turn to pages 8 - 9.

On the preceding page of this lab, you will find a section of the NYS Bedrock Geology Map with 2 lines (A - B and X - Y) drawn on it. A question on an old regents exam included the cross section along line A - B as shown in Figure 2. Notice the location of the Mohawk River and Slide Mt. on the cross section (Figure 2) and on the map. (The exam question asked for the possible age of layer "X" - there are 3 possible answers - can you name them?) Notice the age of the rocks on the surface along line A - B on the map, and how the layers "dip" (geologist talk for "tilt") slightly to the south.

Use a strip of paper along line X - Y on the map to mark off the Mohawk River and Utica, Binghamton, and the ages of the rocks along that line, and then transfer that information onto the surface profile in figure 3. You can use the position of the Mohawk River to line things up.

From there, draw and label the cross section diagram of the rocks on Figure 3. Assume that the rocks south of the old metamorphic rocks of the Adirondacks dip in a manner similar to the rocks along line A - B.

Finally, refer to the Landscape map on page 2 of the reference tables and label the landscape regions along X - Y on Figure 3.

Answer the following questions:

1. How does the age of the rocks change as you move from X to Y along that line? _____

2. What kind of rocks outcrop in the the Adirondack Mts.? _____
- 2a. How old (in years) are the Adirondack rocks? _____
3. Consider the "Law of Original Horizontality", and describe in detail what might have happened to the paleozoic rocks along line X - Y _____

4. Examine your map cross section carefully. Where is there an unconformity along X - Y? _____

5. Label that unconformity on your cross section (Figure 3).
6. What time period(s) are missing across that unconformity? _____
7. How many years long is the 'gap in the rock record' at that unconformity? _____
8. What is the latitude and longitude of the only place in NYS where you *might* find dinosaur fossils?
