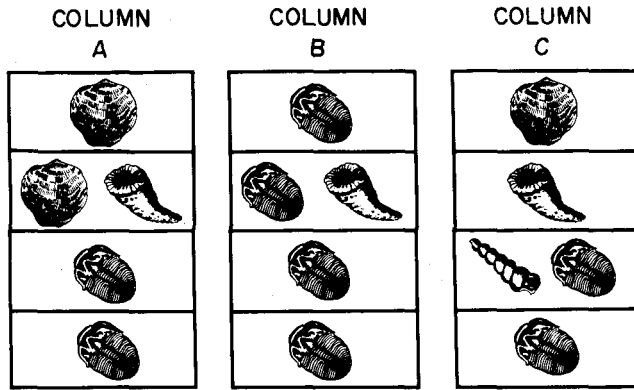
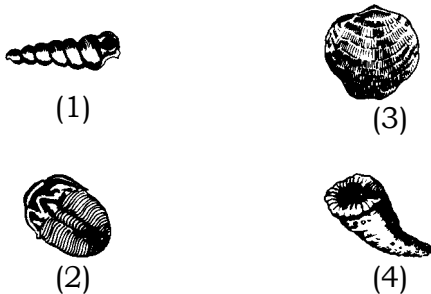


ESS - Correlation

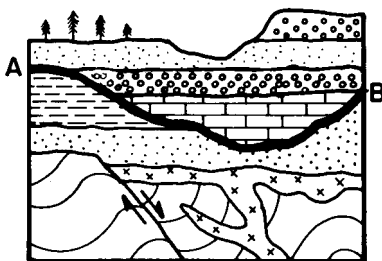
1. The geologic columns A, B, and C in the diagrams below represent widely spaced outcrops of sedimentary rocks. Symbols are used to indicate fossils found within each rock layer. Each rock layer represents the fossil record of a different geologic time period.



According to the diagrams for all three columns, which would be the best index fossil?

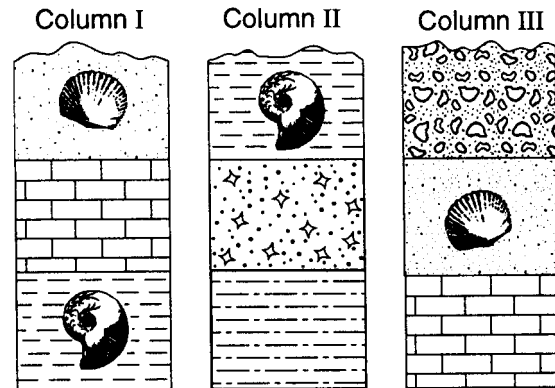


2. What process most directly caused the formation of the feature shown by line AB in the geologic cross section below?

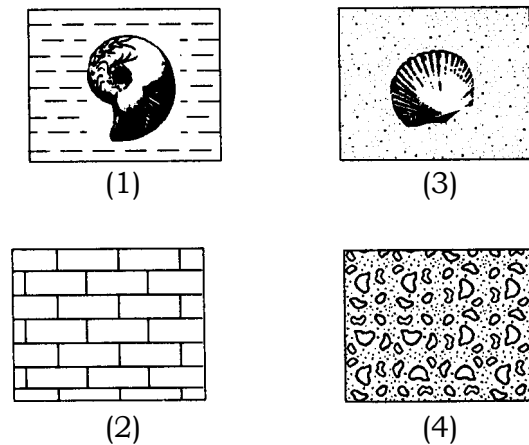


- (1) erosion
- (2) faulting
- (3) igneous intrusion
- (4) folding

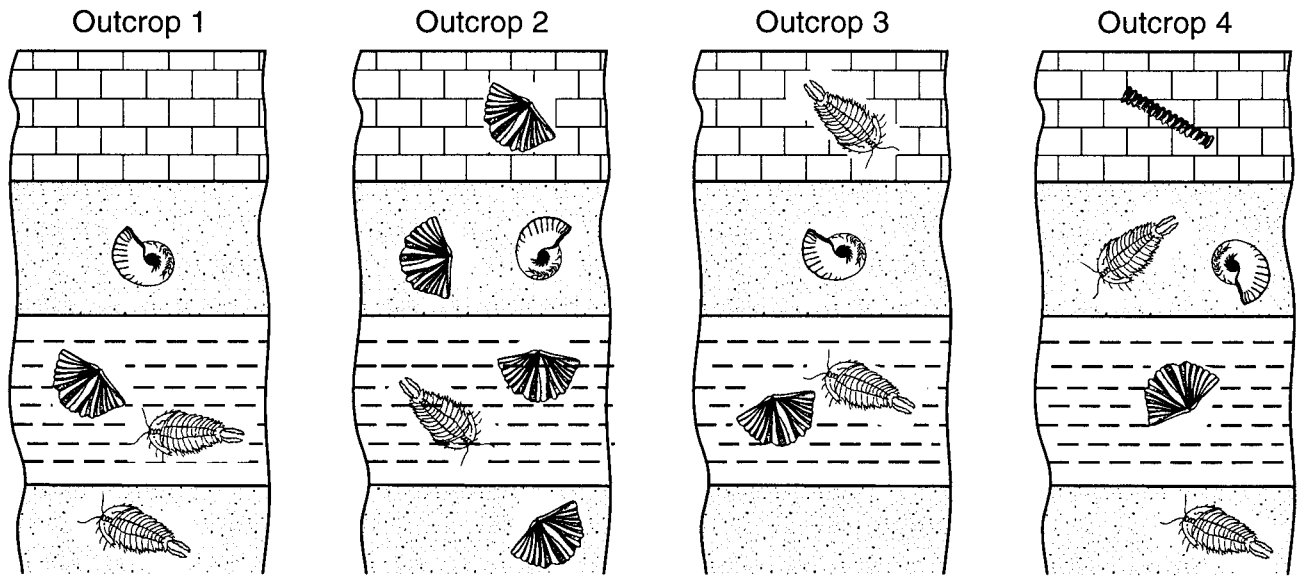
3. The three geologic columns below represent the rock layers in outcrops located several miles apart. The rock layers have not been overturned. Two different index fossils are shown.



Of the rock layers found in these three outcrops, which layer was probably formed most recently?



4. The diagrams below represent the rock layers and fossils found at four widely separated rock outcrops.



Which fossil appears to be the best index fossil?



(1)



(2)

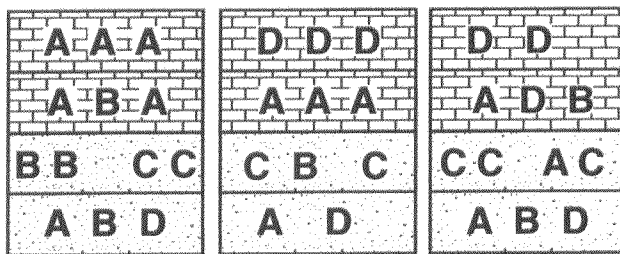


(3)



(4)

5. The three cross sections of sedimentary bedrock shown below represent widely separated surface exposures of layers that contain fossils. Letters A, B, C, and D represent four different marine fossils found in these rock layers.



Which letter best represents an index fossil?

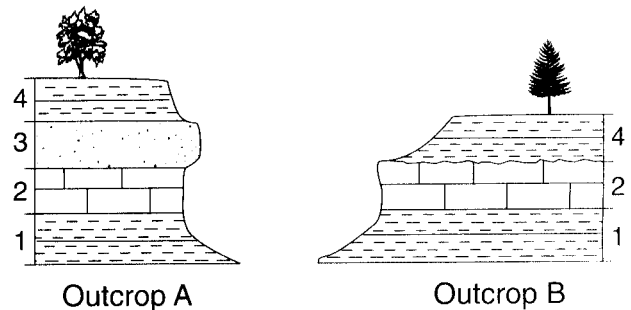
(1) A

(3) C

(2) B

(4) D

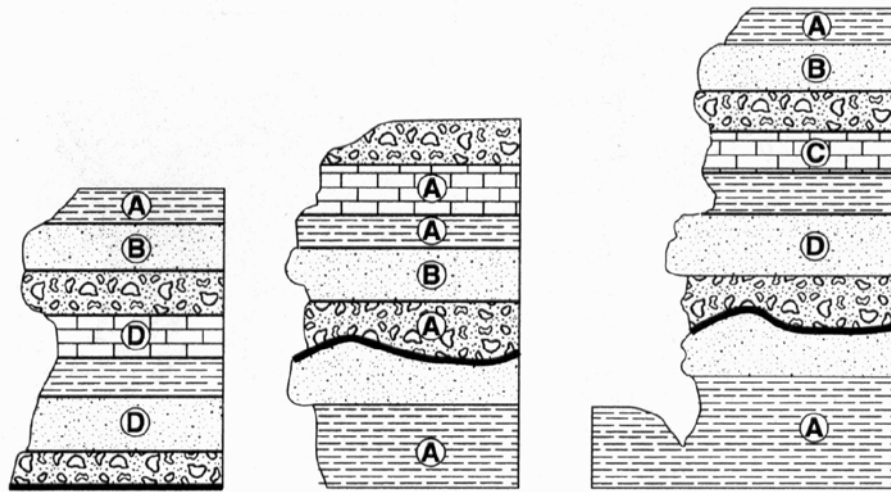
6. Bedrock outcrops A and B are located at two different locations along the Mississippi River. Rock layers 1, 2, and 4 are the same in both outcrops.



Which statement best explains why rock layer 3 is missing from outcrop B?

- (1) A fault exists between outcrops A and B.
- (2) Erosion created an unconformity between rock layers 2 and 4 in outcrop B.
- (3) A volcanic eruption destroyed rock layer 3 in outcrop B.
- (4) Metamorphism of outcrop A created rock layer 3.

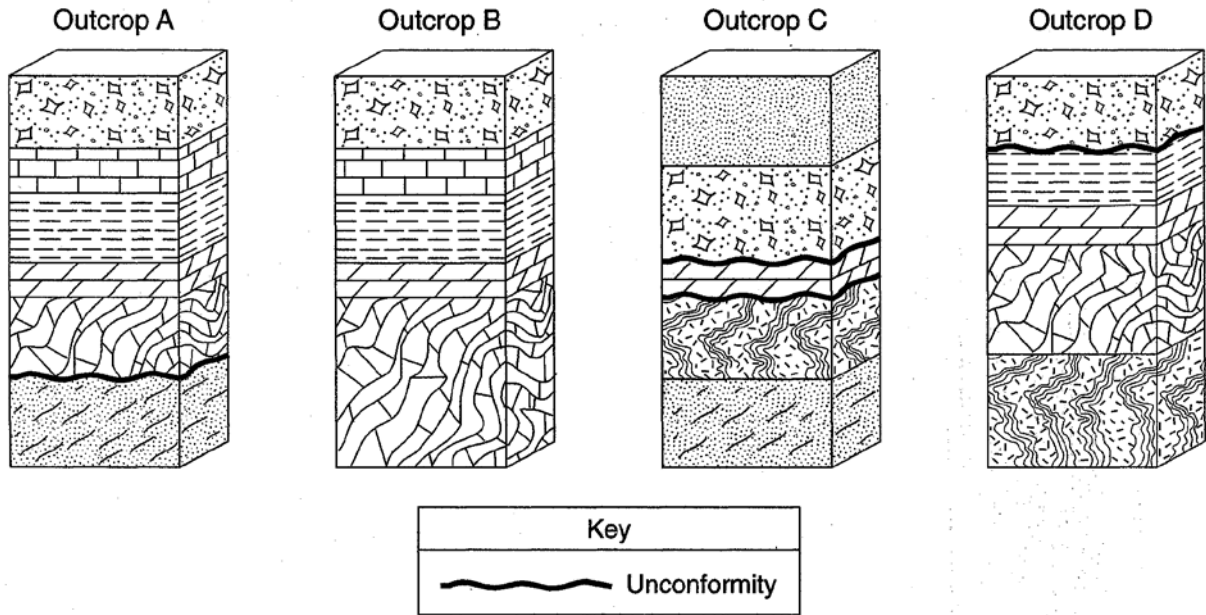
7. The cross sections below represent three widely separated outcrops of exposed bedrock. Letters A, B, C and D represent fossils found in the rock layers.



Which fossil appears to have the best characteristics of an index fossil?

- (1) A (2) B (3) C (4) D

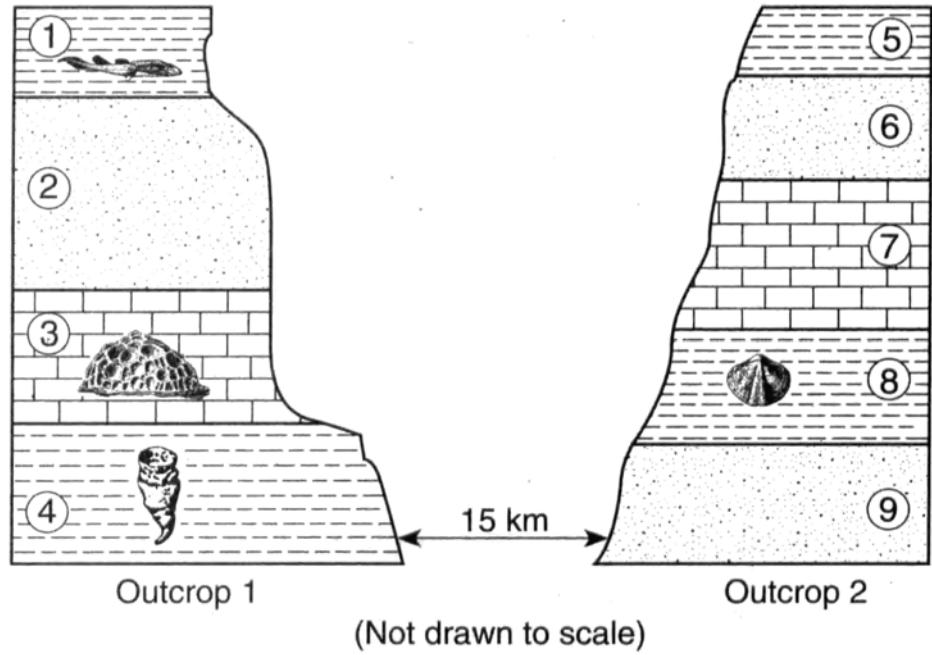
8. Base your answer to the following question on the block diagrams of four rock outcrops, A, B, C, and D, located within 15 kilometers of each other. The rock layers have not been overturned.



When the rock layers at outcrops A, B, C, and D are correlated, which rock layer would be determined to be the oldest?

- (1) quartzite (2) marble (3) gneiss (4) sandstone

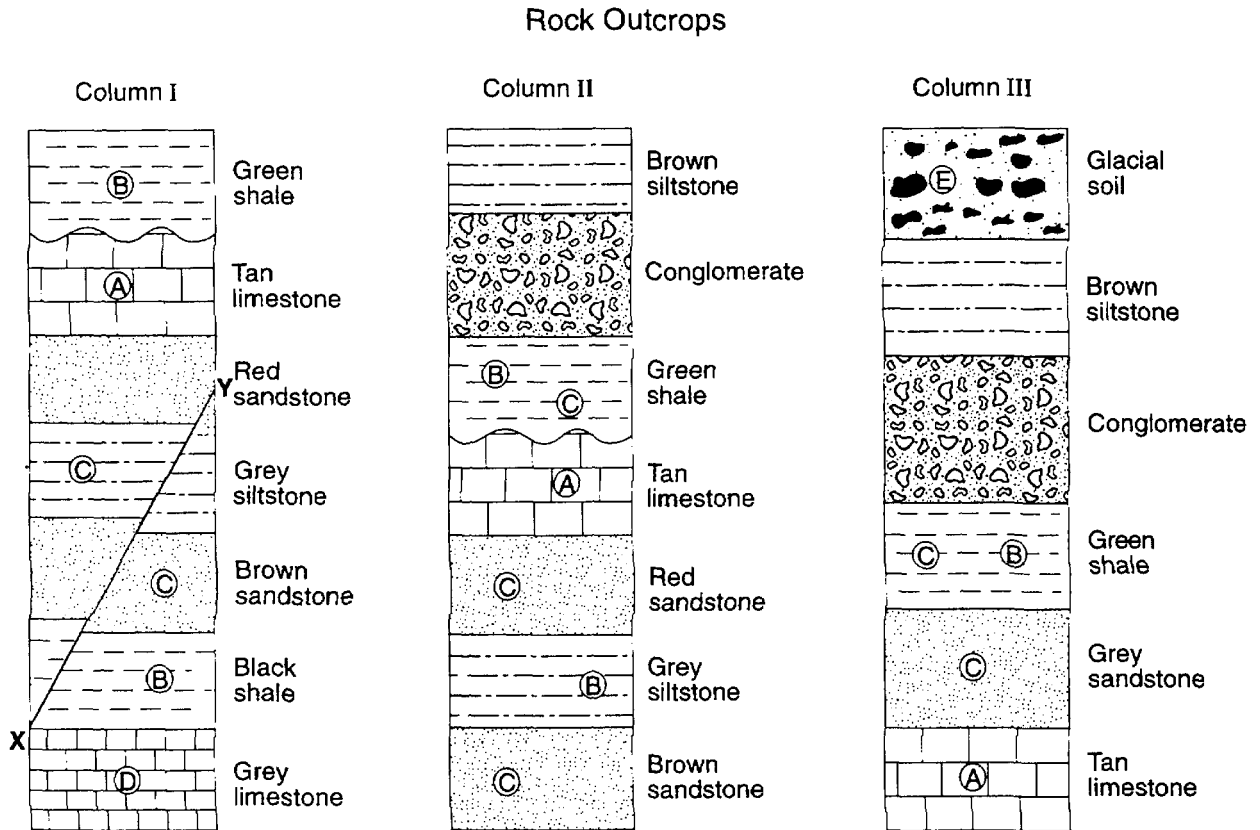
9. Base your answer to the following question on the cross sections below, which represent two bedrock outcrops 15 kilometers apart. The rock layers have been numbered for identification and some contain the index fossil remains shown.



Evidence best indicates that rock layers 4 and 8 were deposited during the same geologic period because both layers

- (1) contain the same index fossil
- (2) are composed of glacial sediments
- (3) contain index fossils of the same age
- (4) are found in the same area

10. Base your answer to the following question on the diagram below which shows three geologic columns representing widely separated rock outcrops. Letters A through E represent fossils found in the outcrops. Line XY represents a fault in column I. The layers have not been overturned.



The wavy line located between the green shale and the tan limestone layers in columns I and II most likely represents

- (1) contact metamorphism
- (2) a volcanic ash layer
- (3) a buried erosional surface
- (4) an igneous intrusion

Answer Key
[New Exam]

1. 4

2. 1

3. 4

4. 3

5. 3

6. 2

7. 2

8. 1

9. 3

10. 3