

1. What is the lecture mainly about?
 - A. New hypotheses about dinosaurs resulting from tissue analysis
 - B. Factors that allow dinosaur bones to be well preserved
 - C. The role of histology in determining nutritional needs of dinosaurs
 - D. The identification of some recently discovered dinosaur bones

2. Why does the professor describe the process of petrification?
 - A. To clarify the difference between bone and soft tissue
 - B. To explain why histology can be used on dinosaur bones
 - C. To remind students of how long ago dinosaurs lived
 - D. To describe the origins of some cracks in dinosaur bones

3. What would researchers have concluded if they had found stress-fractures in the skulls of certain dinosaurs?
 - A. That they had been undernourished
 - B. That they had engaged in head butting behavior
 - C. That the skull bones were not well preserved
 - D. That the skull bones were fragile

Script

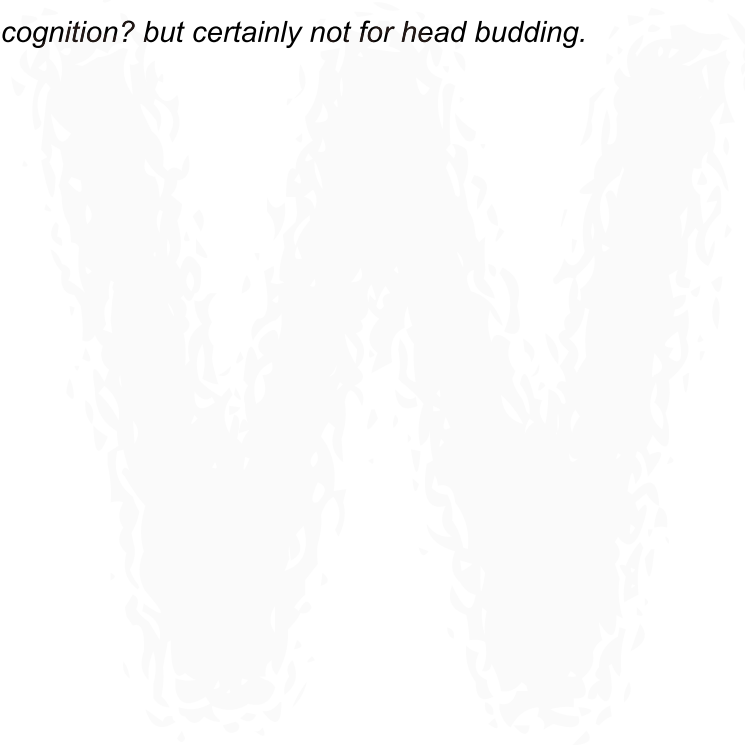
Narrator

Listen to part of a lecture in a biology class.

Professor

We have very good ideas about the various shapes and sizes of dinosaurs from studying their petrified bones; but we had to hypothesize about things like their behaviors and life span, because much of that kind of information isn't preserved the way bones and teeth are, or so we thought. Now, just to review a second: the dinosaurs' bones we study were preserved and turned into stones millions of years ago through the process of petrification. Petrification is when all of the original biological material gets replaced with minerals, without losing its original shape or details. Some petrified dinosaurs bones contain almost perfectly preserved microstructures as small as individual cells. And when bones are that well preserved, we can use histology to examine them.

Histology is the study of biological tissues, and in this case histology is being used to study petrified bone tissues. To do that, the petrified bones have to be cut into slices so thin that light can pass through them. Then you can exhuming them under a microscope. It turns out that the preserved microstructures contained a lot of information, including clues to behavior. In fact, long standing hypothesis about dinosaurs behavior are being proved wrong. And new hypothesis about dinosaur behavior are taking their place. For example, there is one dinosaur that we know had a high dome-shaped skull composed of thick bone. Since the 1950s we thought that with such a thick skull that males probably budded heads, just like big horn sheep do today. Probably when competing for mates. But just a couple of years ago, some university researchers in the United States took a close look at the histological findings of several of these skulls to look for evidence of head budding, like healed cracks or stress fractures, but the analysis clearly showed that there was no sign of that kind of stress to the bones. Instead what they found was small structures that looked like they may have actually anchored a crest to the skull. A crest, maybe like a rooster crown? So, now, paleontologists are wandering what the crest might have been used for: display? recognition? but certainly not for head budding.



ANS: A B B