Tall molars did not evolve from eating grass

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It is a classic tale of evolutionary biology that tall or high-crowned molars (hypsodonty) in mammals only evolved when grasslands evolved.[1] This supposedly took place during the Cenozoic[2] when the cooling climate caused forests to change into extensive grasslands. It was thought the high-crowned molars developed as a result of wear from eating grass containing phtoliths (silica-rich granules). Worn-out teeth supposedly caused the mammals to develop taller, longer-lasting teeth (figure 1). New evolutionary research calls into question this classic tale.

Hypsodonty out of phase with grasslands

Researchers using Cenozoic dating methods for various groups of ungulates (hoofed animals), as well as rodents and rabbits, discovered that the origin of hypsodonty was *out of phase* with the supposed spread of grasslands in the United States' Midwest. Some animals developed high crowns before and some after the supposed 'evolution' of the grassland. Moreover, many mammal families did not evolve tall teeth at all. Therefore, the researchers have mostly abandoned the classic tale but have adopted a new hypothesis. They now claim high-crowned teeth were not due to the evolution of grasslands but from the effects of grit and soil:

> "These results indicate that hypsodonty was not a simple adaptation for eating grass, and may have originated in some clades [groups of animals] to counteract the ingestion of grit and soil."[3]

This hypothesis seems even less plausible because previously the abrasive agent was in the food, while in the new idea the abrasive agent is the soil, which would rarely be consumed.

Creationist implications

The first lesson learned from this story is to be aware of the speculation advanced for the purpose of maintaining the evolutionary *status quo*. The hypothesis of evolution often requires 'just so stories' to explain difficulties when interpreting fossils, radiometric dating, or paleoenvironments. In the biological sciences in particular, recourse is often had to the assumption that non-existent genetic information will somehow be created in response to a perceived environmental need.

Secondly, we must always be alert to the fact that circular reasoning is common within evolutionary biology and paleontology.[4–7] Just as with uniformitarian paleoenvironmental interpretations,[8] we must be aware of circular reasoning and the reinforcement syndrome, the tendency to keep evolutionary concepts going with 'further research'. Circular reasoning is shown in the issue of hypsodonty in that evolutionists have used it as *diagnostic* of a grassland, when there is no paleobotanic evidence.[1] They have also used hypsodonty as a measure of aridity:

> "Fossil ungulate assemblages have recently been employed as palaeoprecipitation indicators, with community hypsodonty levels being a key character for measuring aridity … ."[9]

It would not be surprising if the 'degree of hypsodonty' has been used to 'date' a particular mammal group during the Cenozoic, but the main article gave no indication of this. The assumed paleotemperature, based on the particular fossil assemblage, has been used as input to place the fossils within the Cenozoic era, which presumably was generally cooling throughout.[8,10]

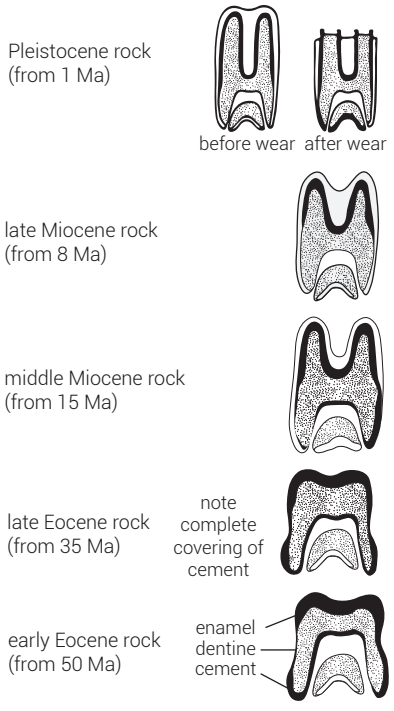

Figure 1. Evolution of taller teeth during the supposed evolution of the horse in the Cenozoic (from wikipedia). Evolutionists no longer consider this a 'straight-line' pattern because the fossil record has many exceptions.

References

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