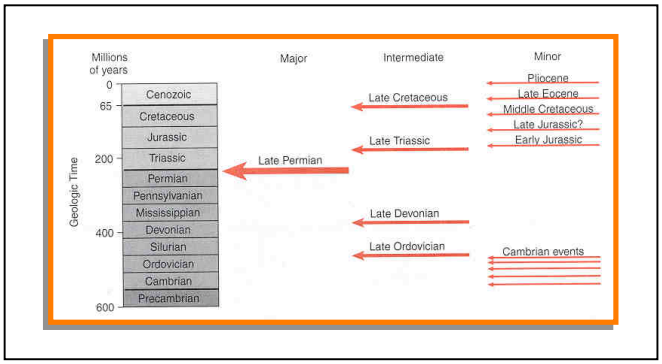

Exam 4 Review Topics (*i.e. highlights*)

Chapter 15

Extinction

Dino extinction part of pervasive extinction at the end of the Cretaceous (K) to Tertiary (T) boundary
Hereafter called the K-T boundary
One of several extinctions
Possible causes
Epidemics
Parasites
Change in plant types
General Stupidity
Competition with mammal eating dino eggs
Evolution of poisonous substances
Evolution of narcotic/psychoactive substances in plants
Climate change - too hot, too cold, too wet, too dry
Low levels of CO2 remove breathing stimulus, high levels
Of CO2 causing asphyxiation
Disruption of global ecosystems due to volcanic activity
Sea level drop and loss of habitats
Radiation from a supernova
Increase in UV radiation
Asteroid impact Alverez et al.
Nature of the Evidence
Evidence - some very controversial!
Pattern versus process
Fossils and rocks that contain them are the patterns
Process (evolution, sedimentation etc.) that produce the patterns
Processes can only be inferred from the patterns, not observed.
Pattern is subject to disagreement
Different patterns suggest different types of extinction mechanisms
Maastrichtian - last interval of the K 71-65 my.
Last dinos during Maastrcihtian
Most dino localities are older. Most only few dino fossils and eggs, or not collected very intensely

Western US is the best!
Can a limited area be extrapolated to the large world?
Gradual Extinction versus Sudden Extinction
Different localities - Different patterns
Hell Creek Formation, MT - Dinos in the Tertiary Reworked fossils?
Comet/ Meteorite/Asteriod Impact Hypothesis
Iridium (Ir) Anomaly Gubbio, Italy - Platinum-group
Spherules/tektite, soot tsunami deposits
Chicxulub - Melted rx under
Structure - Double ring structure -Debris fill - Tsunami deposits? Ejecta blanket
Volcanism and the Deccan traps - India
Gradual Decline
Hell Creek Formation
Dinos 19 - 12- 7
Ecological Collapse?
Cooling an drying of the climate
Worldwide drop in SL
Diversification of placental mammals - trouble for juvenile dinos