XV. Phanerozoic - Mesozoic (chapters 16-17)

A. Introduction

1. 2nd era of Phanerozoic Eon
2. 251 to 65 Ma ago (= 186 my long)
3. Mesozoic ("Middle Life") - "Age of Reptiles"
4. Three periods - Tr, J, K
5. Begins with a mass extinction (Pm-Tr boundary) & major adaptive radiation
6. Ends with a large impact (K-T bdy.) & mass extinction

B. Paleogeography & PT (pp. 391, 408, 411-419, 423, 433-437, 439, 444-447)

1. Pangaea still together in Tr (but tries to rip apart)

2. Gondwana & Laurasia

3. Pangaea breaks apart starting in J

4. 1st, North America breaks from Europe & Africa (Florida now part of North America)

5. North Atlantic forms 1st (J), then South Atlantic opens up (K)

6. India rifts from Gondwana (J) & zooms northward toward Asia

7. Tethys Seaway begins narrowing

8. Australia+Antarctica rift from Africa (K)

9. Madagascar rifts from Africa (K)

10. Sonoma Orogeny (Pm-Tr)

11. Nevadan Orogeny (Tr-K)

12. Sevier Orogeny (K)

13. Laramide Orogeny (K-T)

C. Mesozoic climates & sea levels (pp. 391, 411-414, 423, 435-437)

1. **Tr: Pangaea interior hot & dry; strongly seasonal climate**
2. **J: warmer; China moist & lush**
3. **K: very warm; supergreenhouse at 89-94 Ma (tropical seawater >95° F) + polar ice sheet fm. at 91 Ma (Late K)**
4. **K: atmospheric hyperoxia**

5. **Tr: generally <u>low</u> sea level**

6. **J: major global transgression**

7. **K: <u>very high</u> sea level (Zuni Transgression, N.Am.) (why?)**

D. Some Mesozoic Rx.

1. **Tr rift basin fill (eastern North America) (pp. 414-415)**

2. **Tr redbeds**

3. J evaporites in Gulf of Mexico (p. 413)

4. Chalks common in K (pp. 246, 421, 447)

5. Widespread black shale in uJ & K (pp. 435-437)