

ANY QUESTIONS?

1

---

---

---

---

---

### CONTINENTAL DRIFT



2

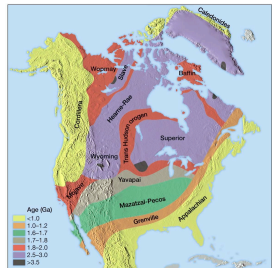
---

---

---

---

---



Age structure of the North American Craton

3

---

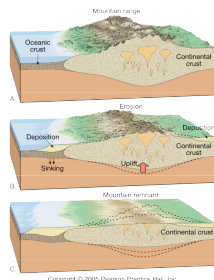
---

---

---

---

### Geosynclines



4

---

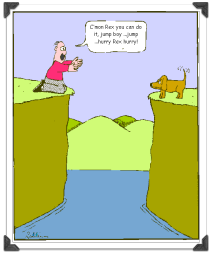
---

---

---

---

## Continent Movement



5

---

---

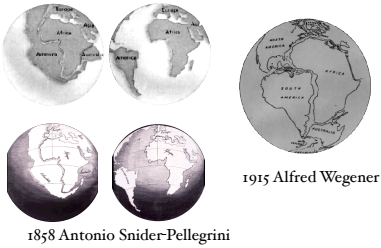
---

---

---

---

## Notions of Continent Movement



6

---

---

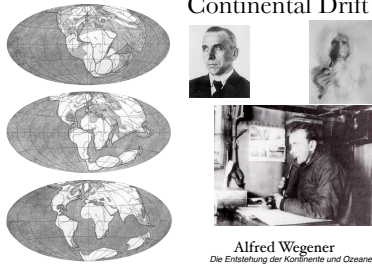
---

---

---

---

## Continental Drift



7

---

---

---

---

---

---

## Evidence for Continental Drift

8

---

---

---

---

---

---

# Fit of the Continents



9

---

---

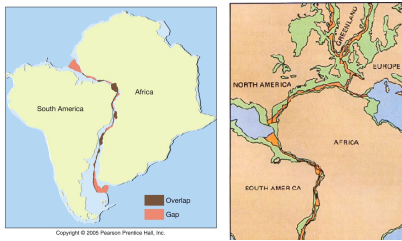
---

---

---

---

# Fit of the Continents



10

---

---

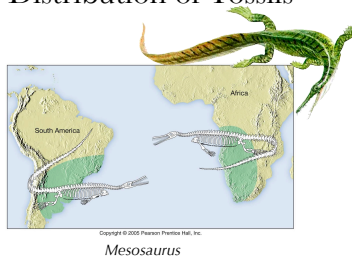
---

---

---

---

# Distribution of Fossils



11

---

---

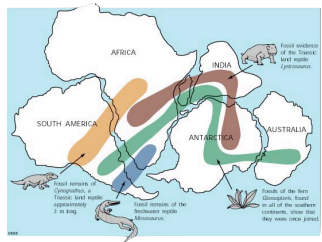
---

---

---

---

# Distribution of Fossils



12

---

---

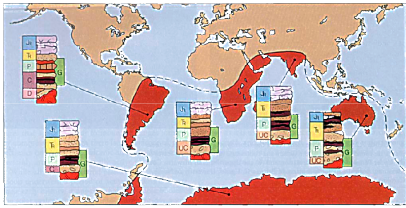
---

---

---

---

### Continuity of Geologic Features



13

---

---

---

---

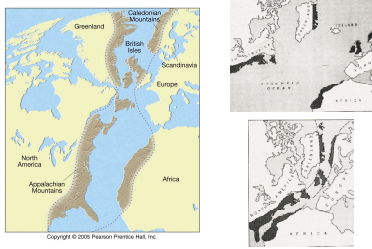
---

---

---

---

### Continuity of Geologic Features



14

---

---

---

---

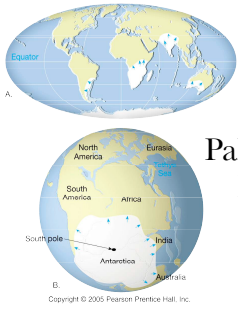
---

---

---

---

### Paleoclimatic Features



15

---

---

---

---

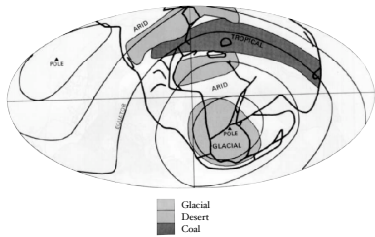
---

---

---

---

### Wegener's Climate Belts



16

---

---

---

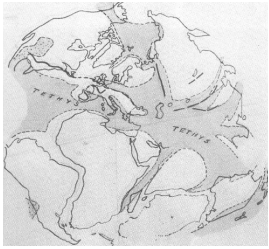
---

---

---

---

---



*Our Wandering  
Continents*

Alexander DuRoi

17

---

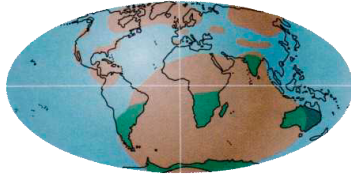
---

---

---

---

### Mythical Continents



Land Sea Glossopteris flora

18

---

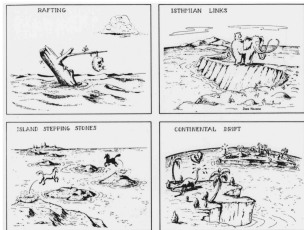
---

---

---

---

### Explanations???



Copyright © 2005 Pearson Prentice Hall, Inc.

19

---

---

---

---

---

### Wither Continental Drift?

20

---

---

---

---

---

# GATHERING THE THREADS: THE PLOT THICKENS 1925 - 1963

21

---

---

---

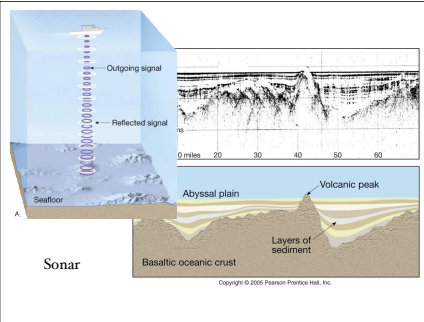
---

---

---

---

---



22

---

---

---

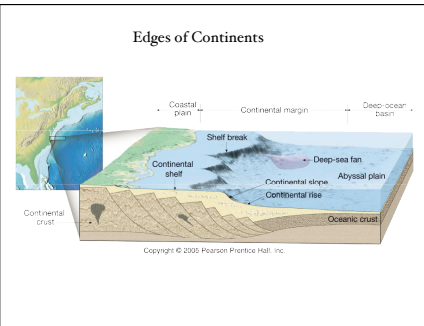
---

---

---

---

---



23

---

---

---

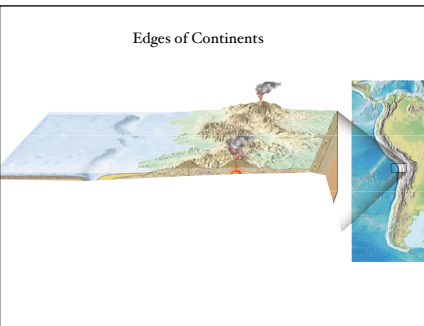
---

---

---

---

---



24

---

---

---

---

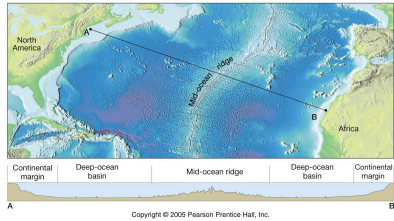
---

---

---

---

### Deep Oceans



25

---

---

---

---

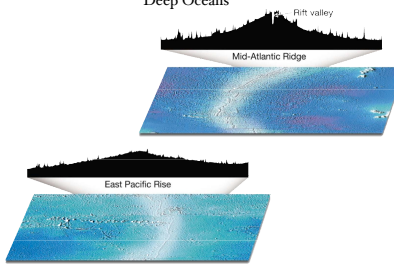
---

---

---

---

### Deep Oceans



26

---

---

---

---

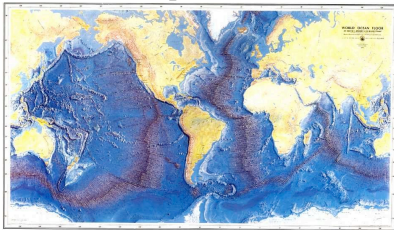
---

---

---

---

### Deep Oceans



27

---

---

---

---

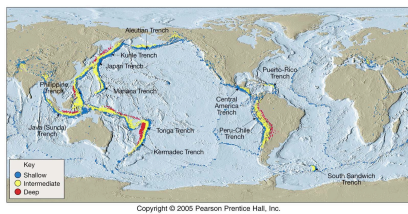
---

---

---

---

### Earthquakes



28

---

---

---

---

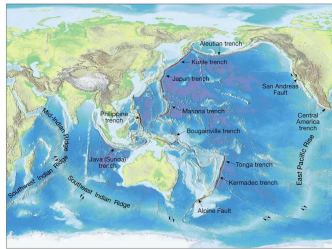
---

---

---

---

### Trenches



Copyright © 2005 Pearson Prentice Hall, Inc.

29

---

---

---

---

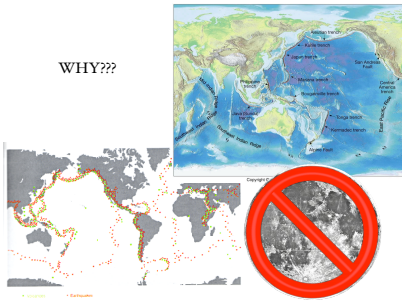
---

---

---

---

WHY???



30

---

---

---

---

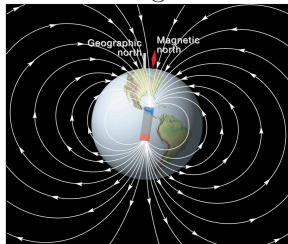
---

---

---

---

### Earth's Magnetic Field



Copyright © 2005 Pearson Prentice Hall, Inc.

31

---

---

---

---

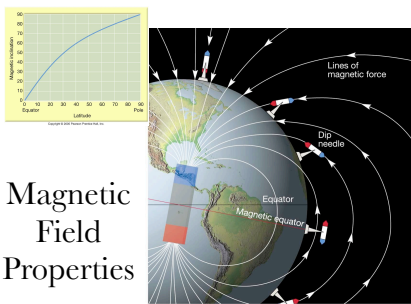
---

---

---

---

### Magnetic Field Properties



32

---

---

---

---

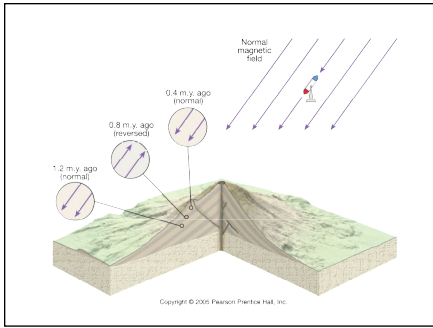
---

---

---

---





33

---

---

---

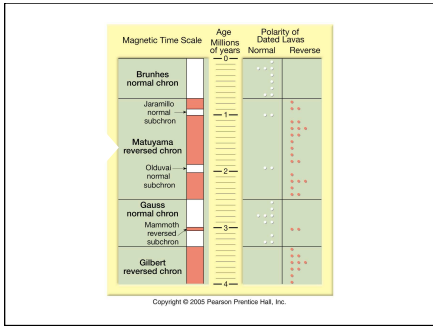
---

---

---

---

---



34

---

---

---

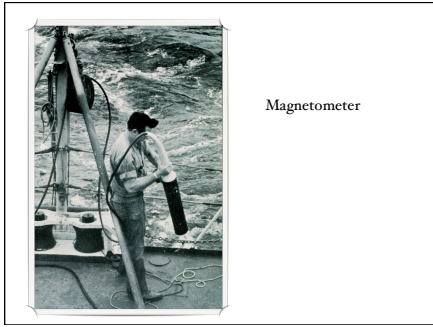
---

---

---

---

---



35

---

---

---

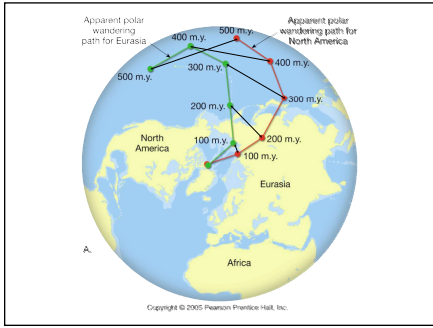
---

---

---

---

---



36

---

---

---

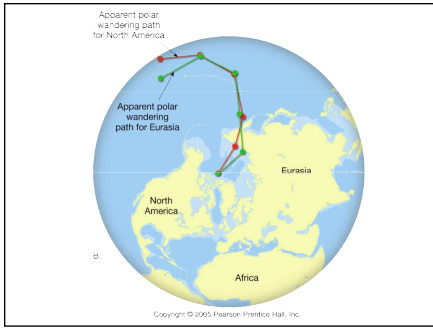
---

---

---

---

---



37

---

---

---

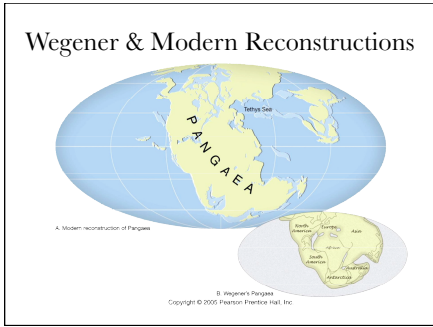
---

---

---

---

---



38

---

---

---

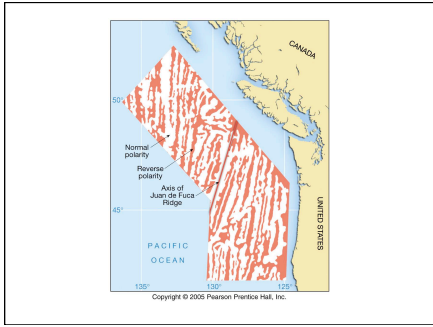
---

---

---

---

---



39

---

---

---

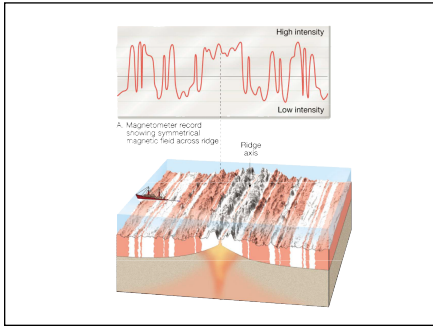
---

---

---

---

---



40

---

---

---

---

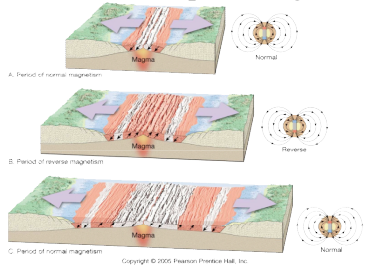
---

---

---

---

# Seafloor Spreading



41

---

---

---

---

---

---

---

---

# PLATE TECTONICS

42

---

---

---

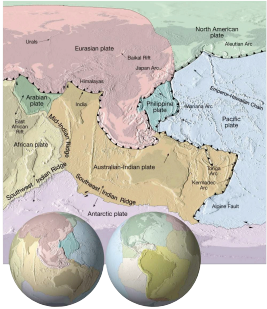
---

---

---

---

---



43

---

---

---

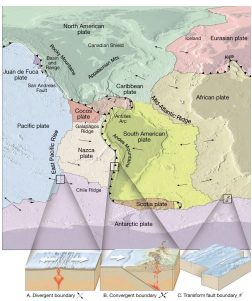
---

---

---

---

---



44

---

---

---

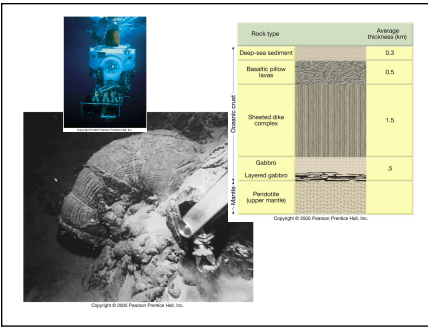
---

---

---

---

---



45

---

---

---

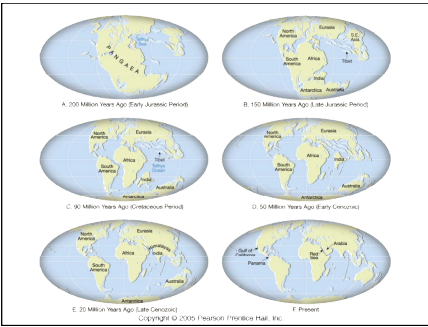
---

---

---

---

---



46

---

---

---

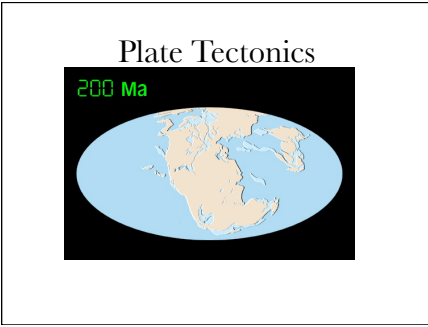
---

---

---

---

---



47

---

---

---

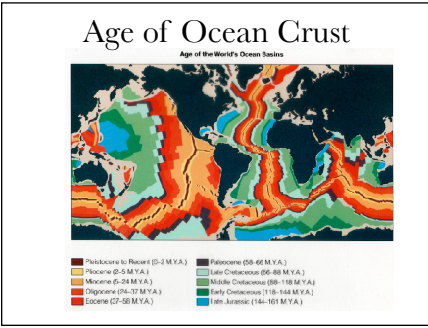
---

---

---

---

---



48

---

---

---

---

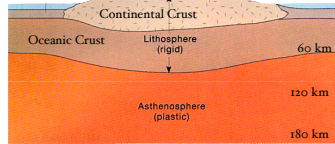
---

---

---

---

## Role of Continents



49

---

---

---

---

---

---

---

---



## The Plates

50

---

---

---

---

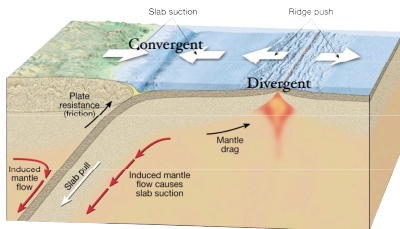
---

---

---

---

## The Mechanism



51

---

---

---

---

---

---

---

---

## DIVERGENT BOUNDARIES

52

---

---

---

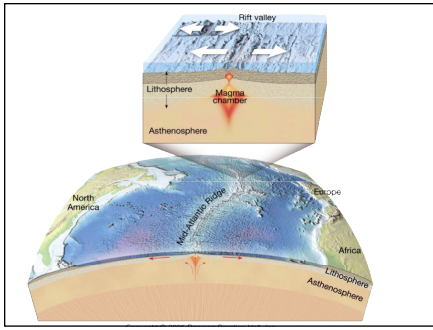
---

---

---

---

---



53

---

---

---

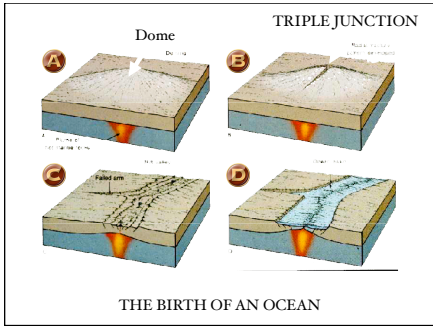
---

---

---

---

---



54

---

---

---

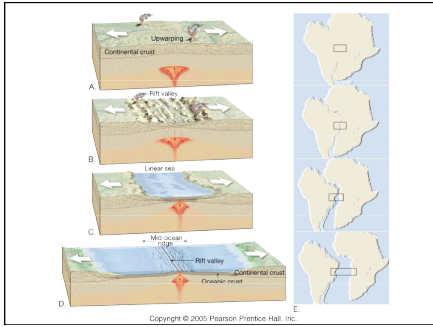
---

---

---

---

---



55

---

---

---

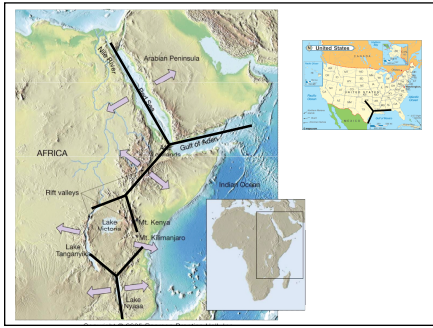
---

---

---

---

---



56

---

---

---

---

---

---

---

---



# CONVERGENT PLATE BOUNDARIES

61

---

---

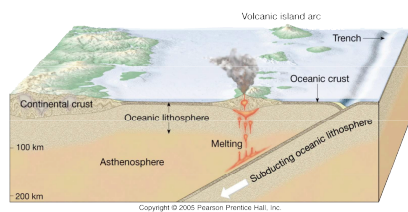
---

---

---

---

## Ocean-Ocean Boundary



62

---

---

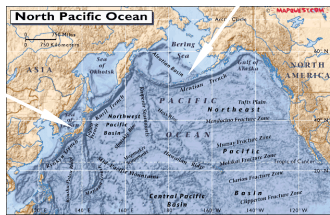
---

---

---

---

## Island Arcs



63

---

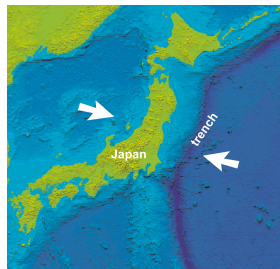
---

---

---

---

---



64

---

---

---

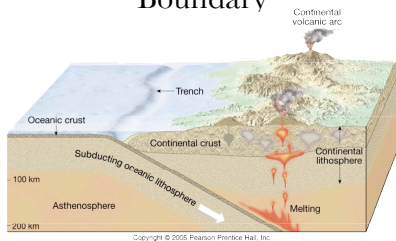
---

---

---



# Ocean-Continent Boundary



65

---

---

---

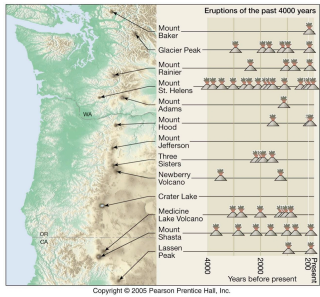
---

---

---

---

---



66

---

---

---

---

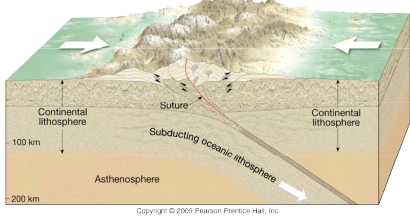
---

---

---

---

# Continent-Continent Boundary



67

---

---

---

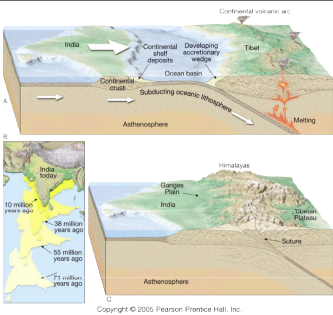
---

---

---

---

---



68

---

---

---

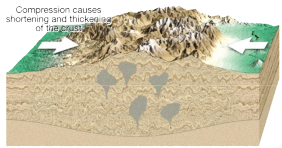
---

---

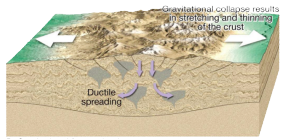
---

---

---



A. Horizontal compressional forces dominate



B. Gravitational forces dominate

Copyright © 2005 Pearson Prentice Hall, Inc.

69

---

---

---

---

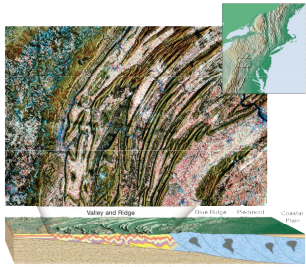
---

---

---

---

### Appalachian Mountain Fold Belt



Copyright © 2005 Pearson Prentice Hall, Inc.

70

---

---

---

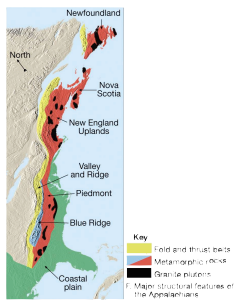
---

---

---

---

---



Copyright © 2005 Pearson Prentice Hall, Inc.

71

---

---

---

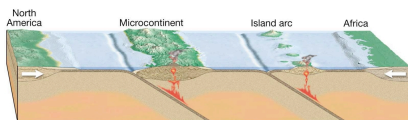
---

---

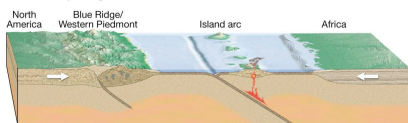
---

---

---



A. 600 million years ago



B. 450-500 million years ago

Copyright © 2005 Pearson Prentice Hall, Inc.

72

---

---

---

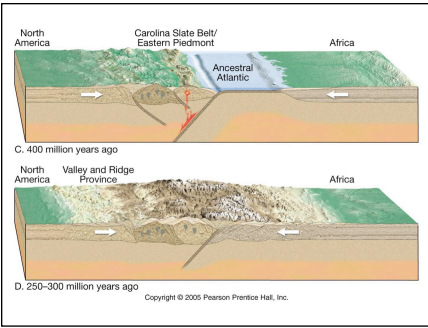
---

---

---

---

---



73

---

---

---

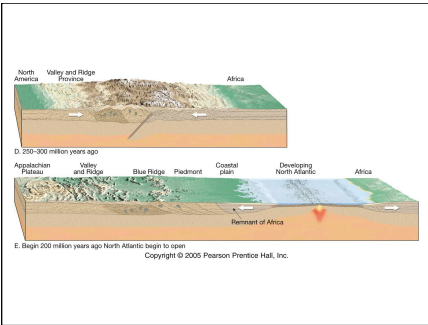
---

---

---

---

---



74

---

---

---

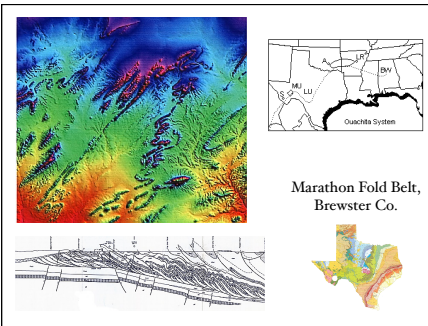
---

---

---

---

---



75

---

---

---

---

---

---

---

---

HOT SPOTS

76

---

---

---

---

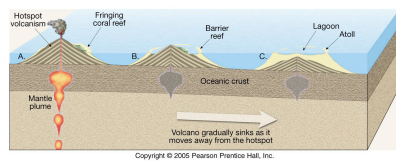
---

---

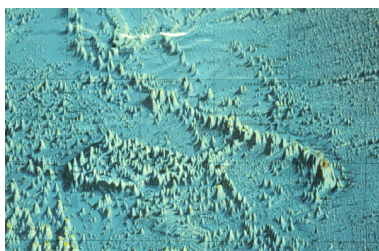
---

---

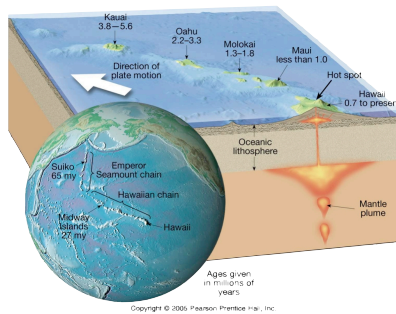
## Volcanic Hot Spots



77

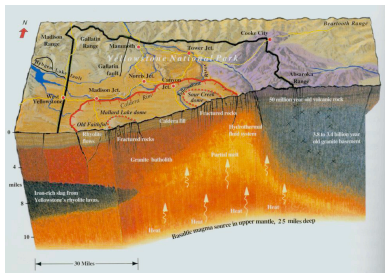


78



79

## Yellowstone Hot Spot



80

# TERRANE ACCRETION

81

---

---

---

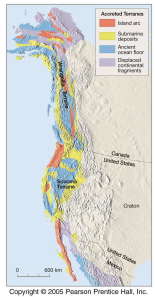
---

---

---

---

---



82

---

---

---

---

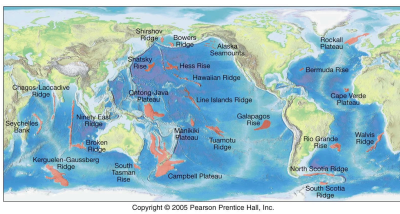
---

---

---

---

## Chunks of continental crust today "Microcontinents"



83

---

---

---

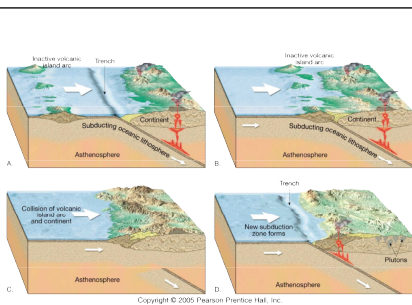
---

---

---

---

---



84

---

---

---

---

---

---

---

---

# WESTERN NORTH AMERICA

85

---

---

---

---

---

---

---

---



86

---

---

---

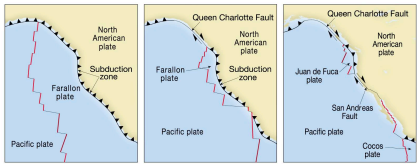
---

---

---

---

---



A. 56 million years ago B. 37 million years ago C. Today  
Copyright © 2005 Pearson Prentice Hall, Inc.

87

---

---

---

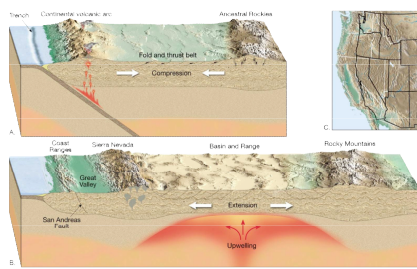
---

---

---

---

---



Copyright © 2005 Pearson Prentice Hall, Inc.

88

---

---

---

---

---

---

---

---

# THE MECHANISM

89

---

---

---

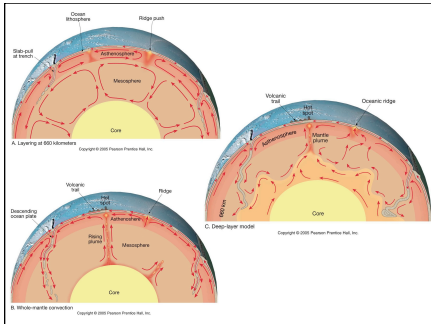
---

---

---

---

---



90

---

---

---

---

---

---

---

---

# THE FUTURE

91

---

---

---

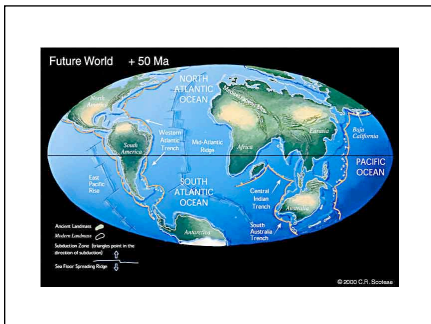
---

---

---

---

---



92

---

---

---

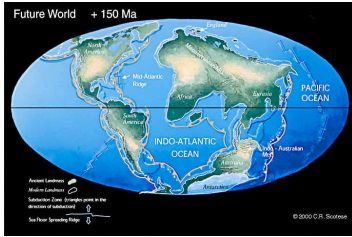
---

---

---

---

---



93

---

---

---

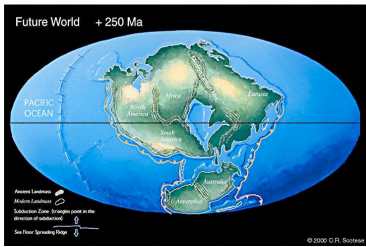
---

---

---

---

---



94

---

---

---

---

---

---

---

---

# FROM THE LATE PRECAMBRIAN INTO THE FUTURE

95

---

---

---

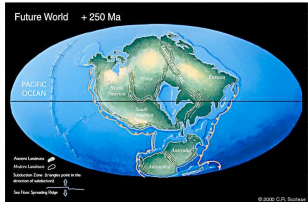
---

---

---

---

---



96

---

---

---

---

---

---

---

---