

# **The Unique Australian Wildlife**

**The notes to the geological history of the  
continent**

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Many countries have their own  
unique fauna.

But Australia is mostly unusual  
in that

# 320-270 million years ago

## Permo-Carboniferous Age



If we had observed the Earth surface from space at that time, we would have seen quite the other picture

# 270-210 million years ago

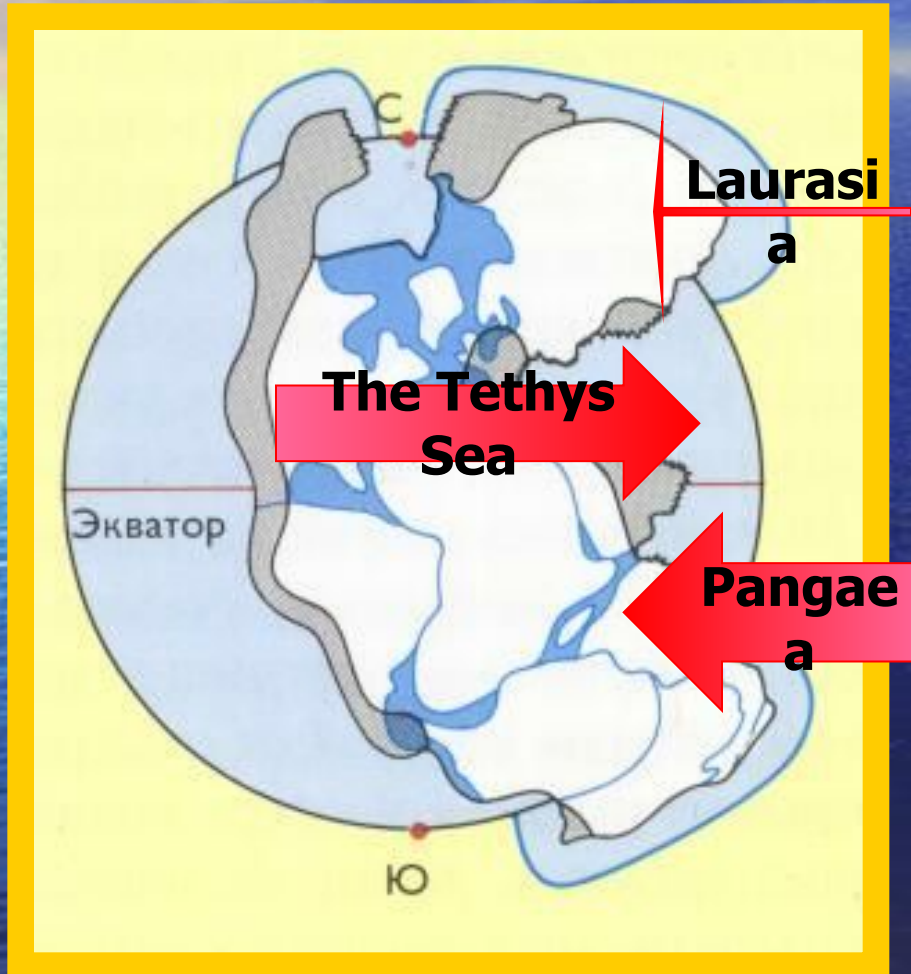
The end of Permian – the beginning of Trias  
About 275 million years ago

Euroamerica and  
Angara  
made a huge landmass

The Tethys Sea  
Separated Laurasia

from the  
protocontinent

of Pangaea.  
Nowadays it is  
the Middeteranian  
Sea



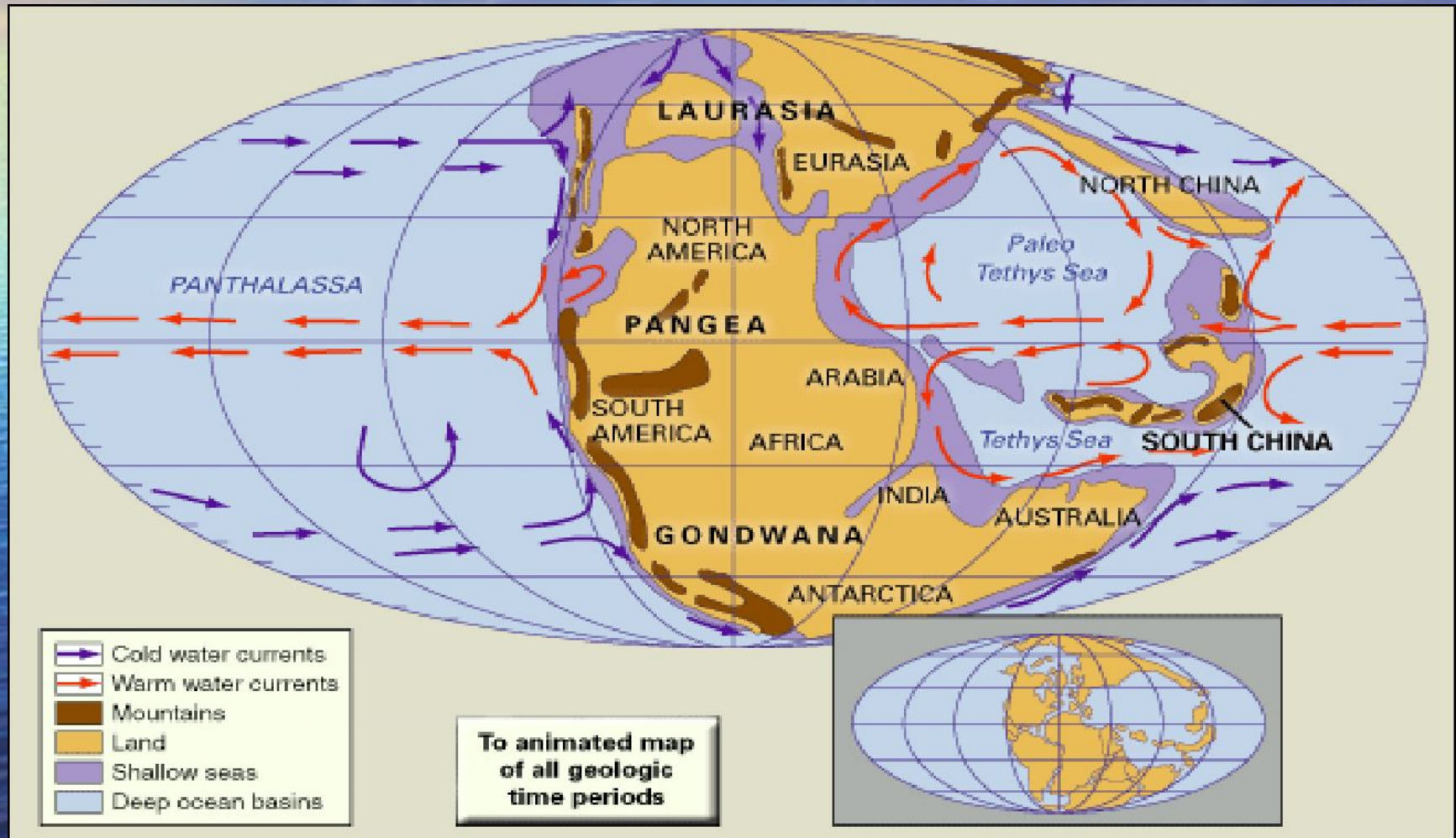
# 270-210 million years ago

The end of Permian – the beginning of Trias

- ❖ On land the vertebrates are represented in the Triassic by amphibians and reptiles.
- ❖ The first true mammals, which were very small, are supposed to appear in the Late Triassic.

# Triassic Period:

continents and oceans of the Earth in Early Triassic time



# Monotreme



**short-beaked  
echidna**

**amphibious  
platypus**

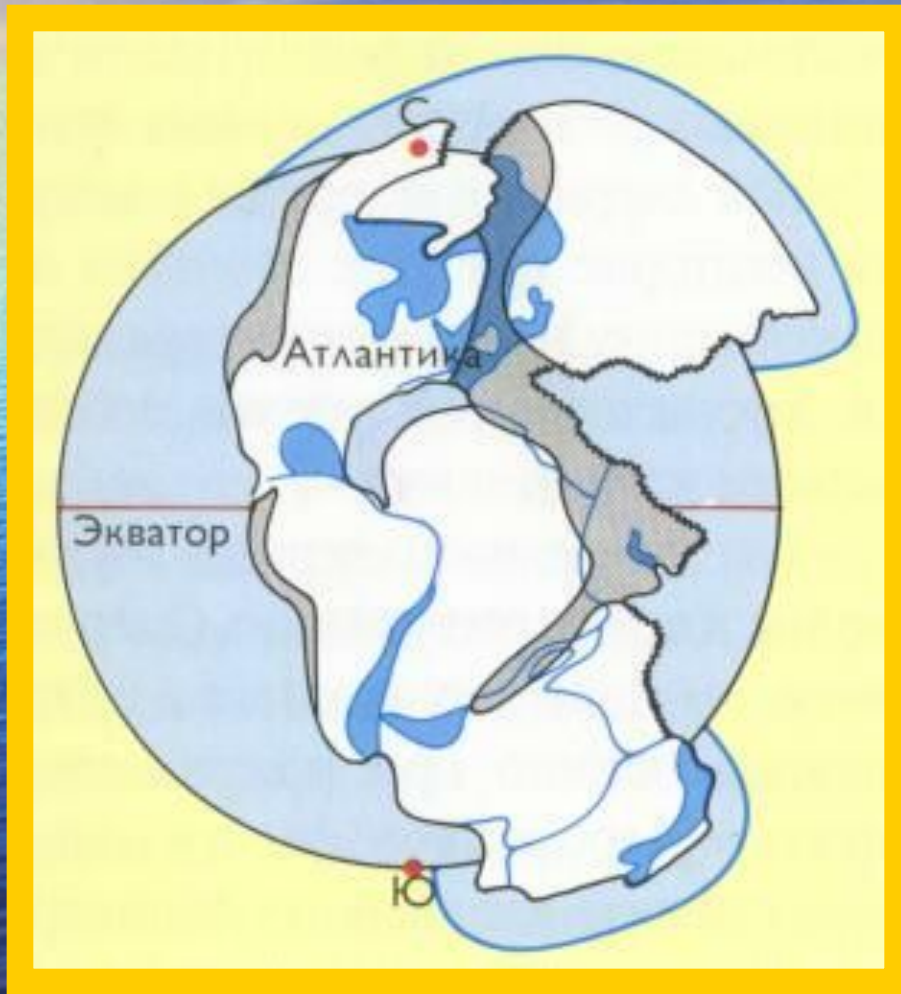
The egg-laying  
mammals include  
the amphibious  
platypus  
and the terrestrial  
echidnas  
of Australia, Tasmania,  
and New Guinea



# 180 million years ago

## Middle Jurassic period

The protocontinent supposedly covered about half the Earth and was completely surrounded by a world ocean called Panthalassa.

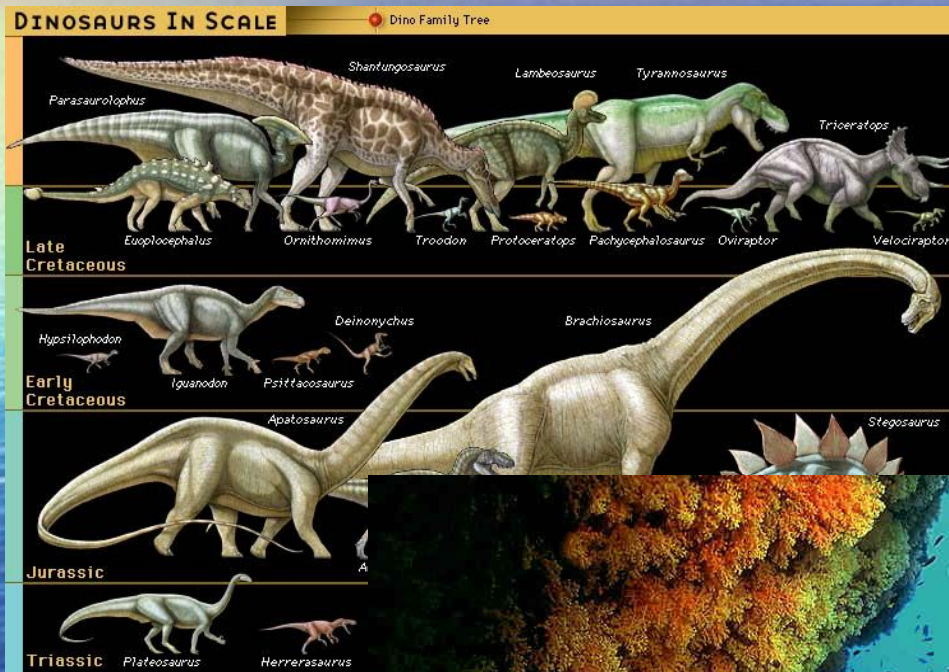




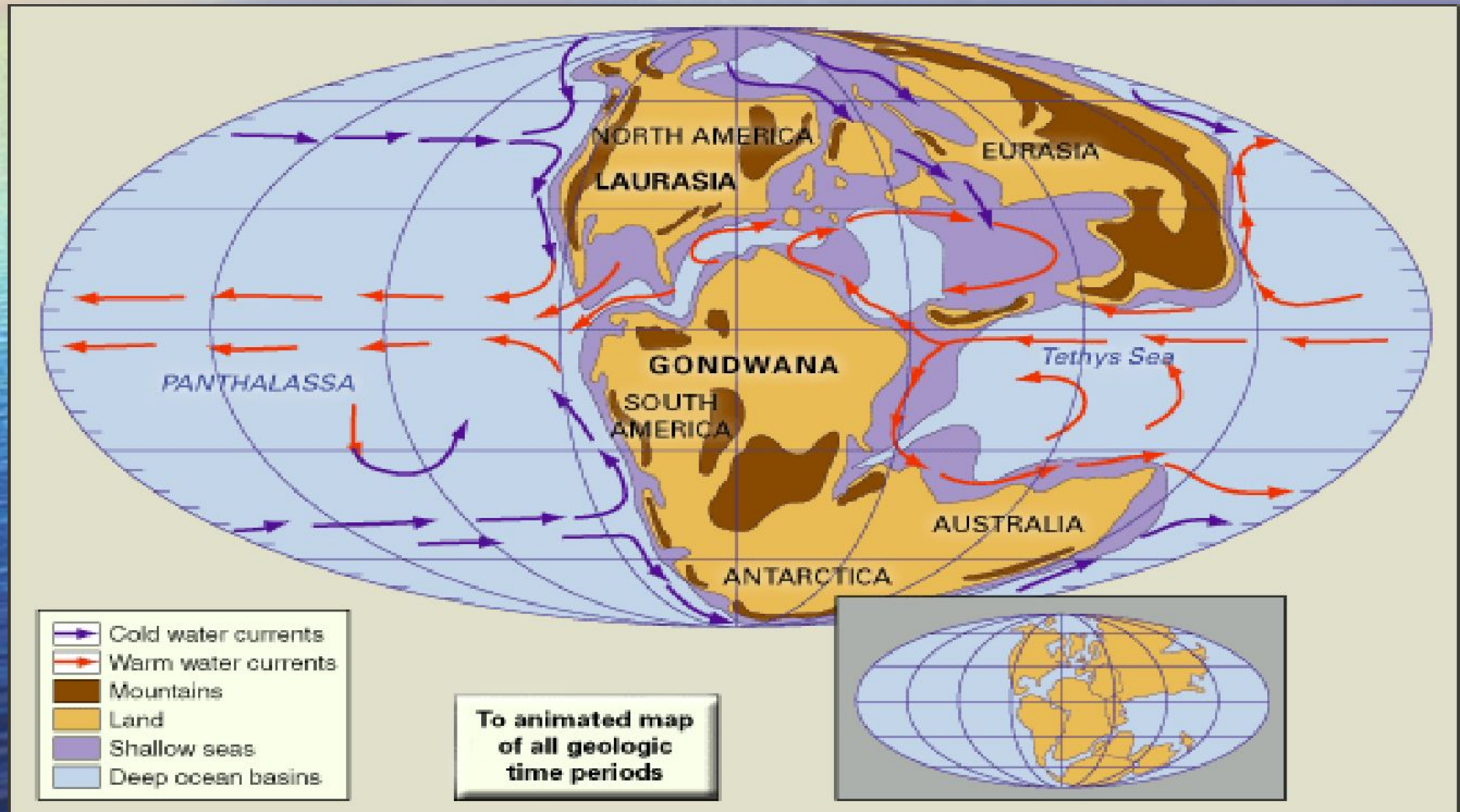
# 180 million years ago

## Middle Jurassic period

- ❖ Dinosaurs and other reptiles emerged to dominate the land, sea, and sky.
- ❖ The first birds and new varieties of reefbuilding and other invertebrate faunas, provided Jurassic life with added complexity.

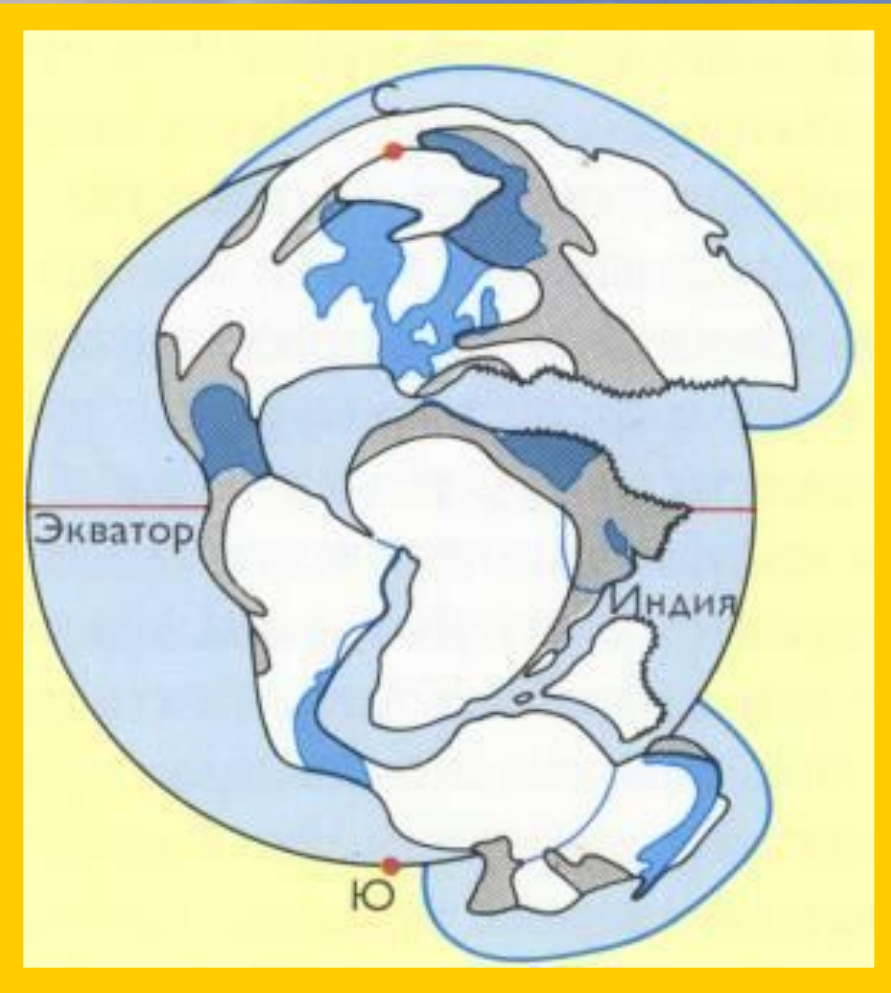


# Late Jurassic Epoch: geochronological map



# 100 million years ago

Early Cretaceous Period



Later Pangaea began to break apart. Its segments Laurasia and Gondwanaland gradually receded, resulting in the formation of the Atlantic Ocean.

**100 million years ago**

**Early Cretaceous Period**

**Two important groups of modern mammals evolved during the Cretaceous.**

Cretaceous placentals, smaller than those of present-day ones, were poised to take over the terrestrial environments as soon as the dinosaurs vanished.

# 100 million years ago

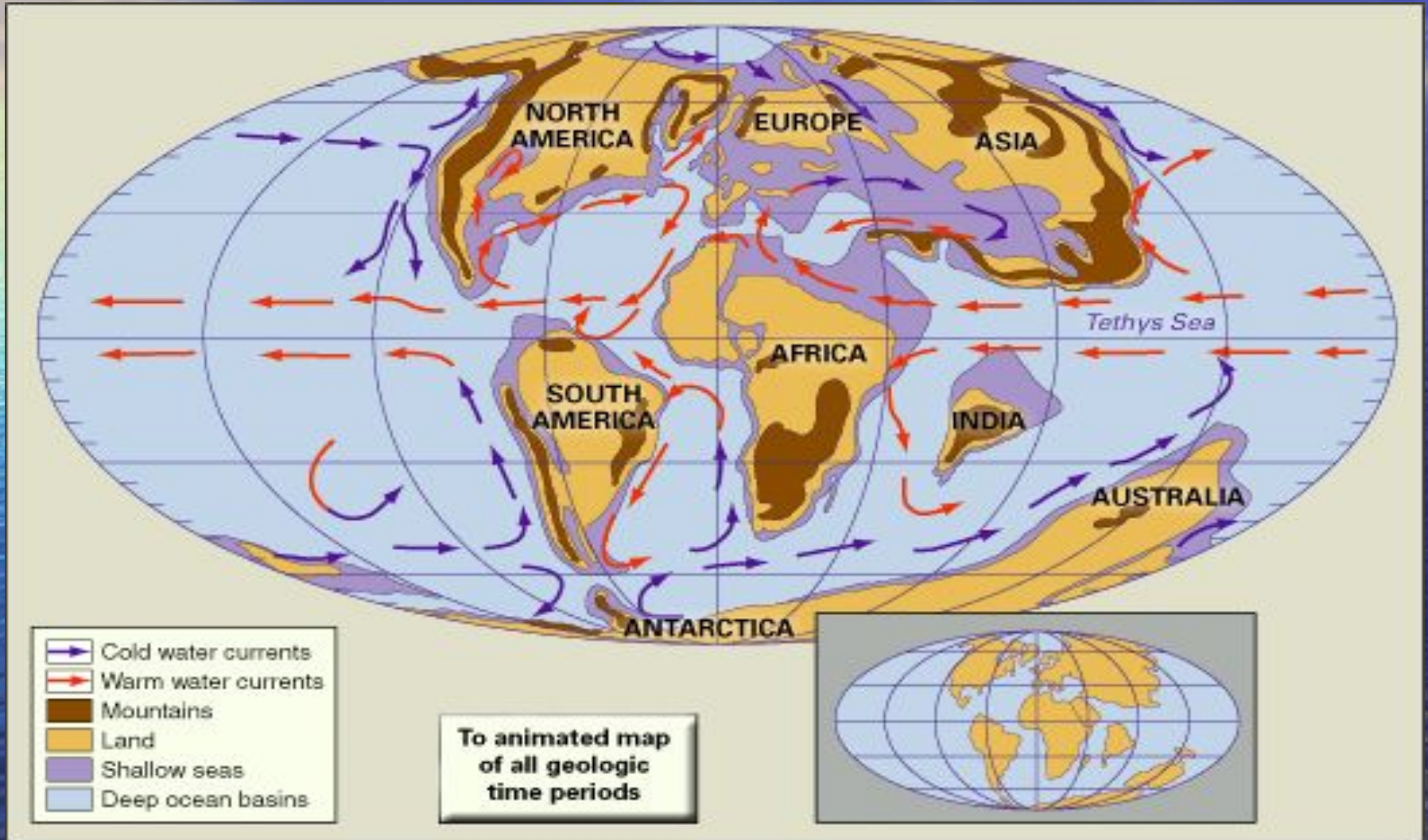
## Early Cretaceous Period

Another mammal group, the marsupials, evolved during the Cretaceous as well.

This group includes the native species of Australia, kangaroos, koalas, and the North American opossum.



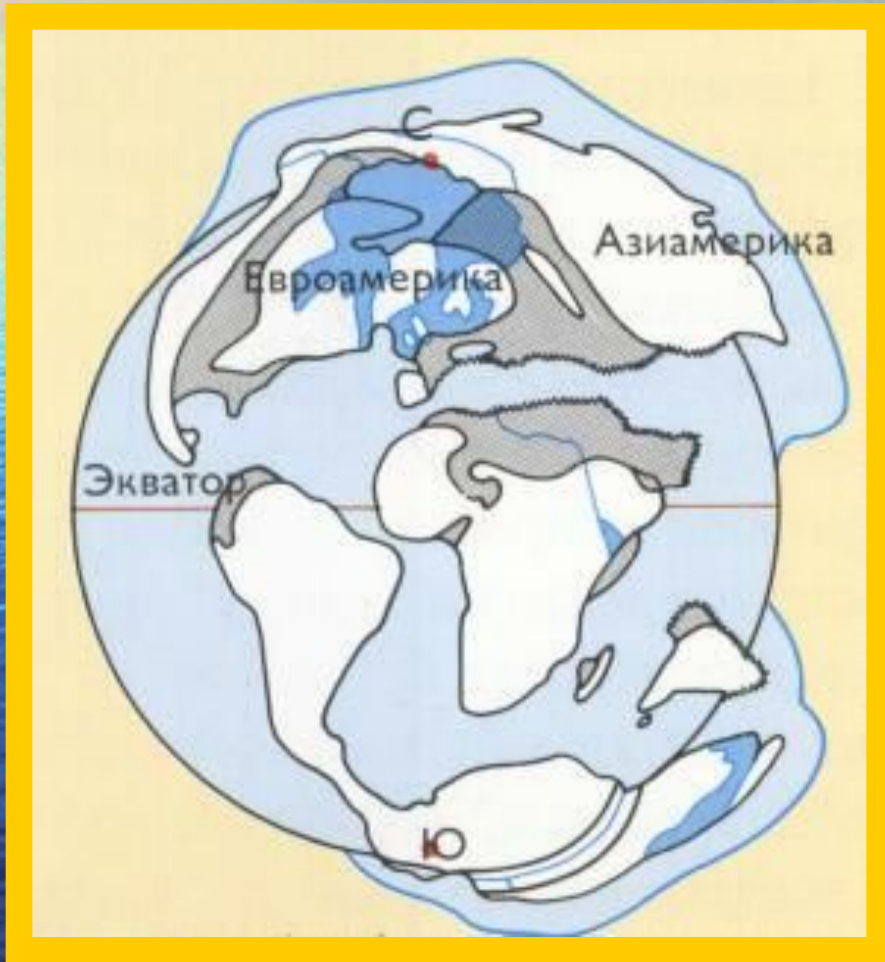
# Late Cretaceous Epoch: geochronological map



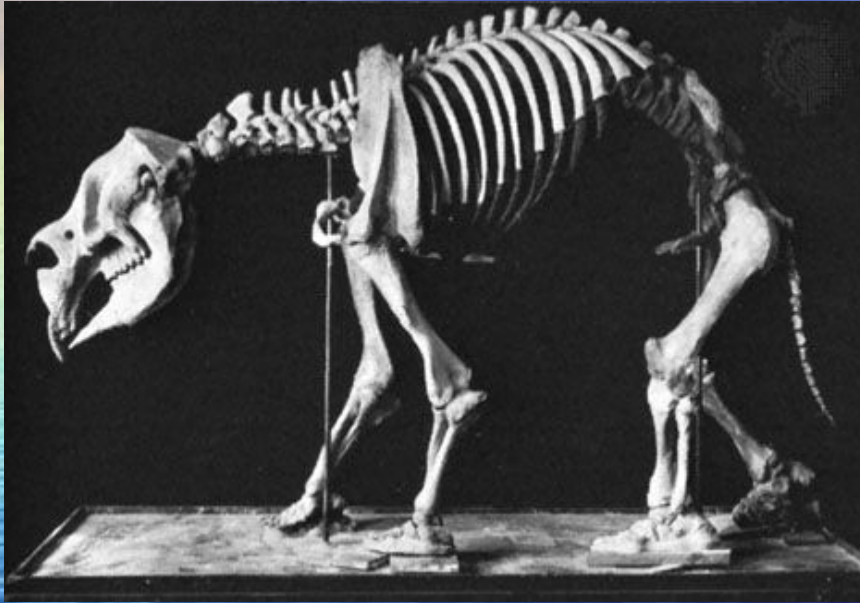
# 70 million years ago

## The end of Cretaceous Period

The Late Cretaceous record is much more complete. It is known, for instance, that during the Late Cretaceous many dinosaur types lived in relationships like the present-day terrestrial mammals.



# Diprotodon



extinct marsupial mammals  
existed 30 - 10,000 years  
ago  
in Australia.

- ❖ characterized by a wombat-like body the size of a large rhinoceros.
- ❖ massively constructed skeleton to support its imposing bulk.
- ❖ well developed teeth of gnawing animals.
- ❖ herbivorous
- ❖ distantly related to kangaroos and wombats.



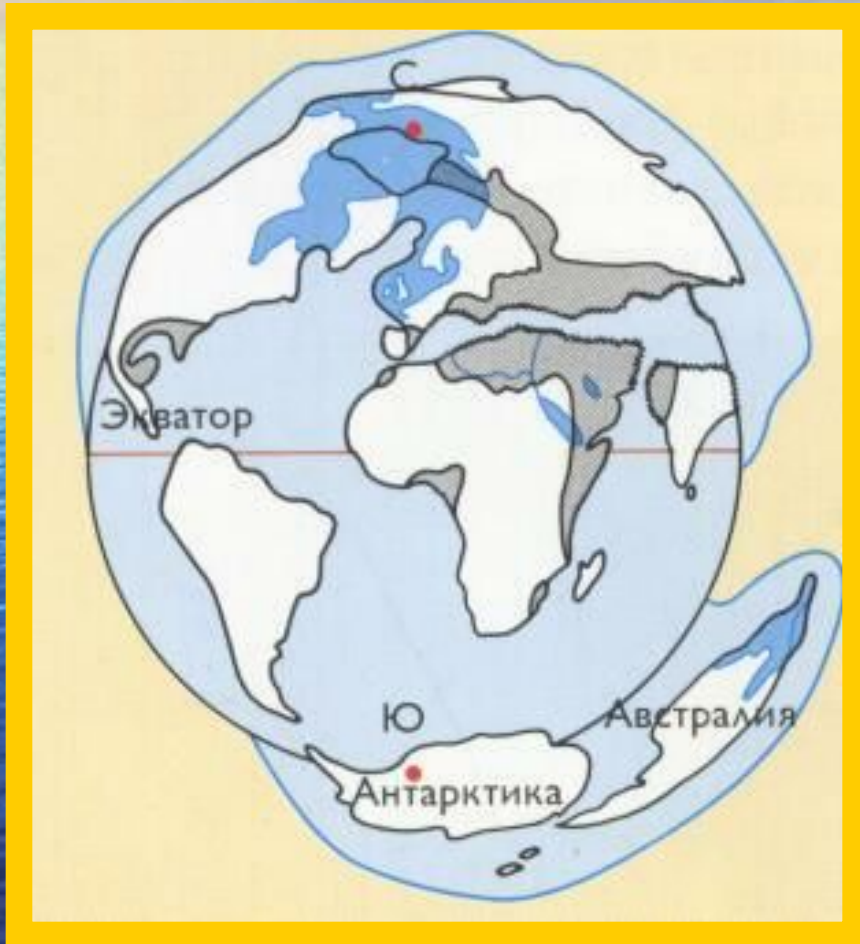
**45 million years ago** By that time  
The beginning of Cenozoic era Australasia was

isolated

from all other  
continental masses,  
here marsupials  
evolved  
into many diverse  
forms.

In South America  
they survived  
alongside placentals,  
forming the

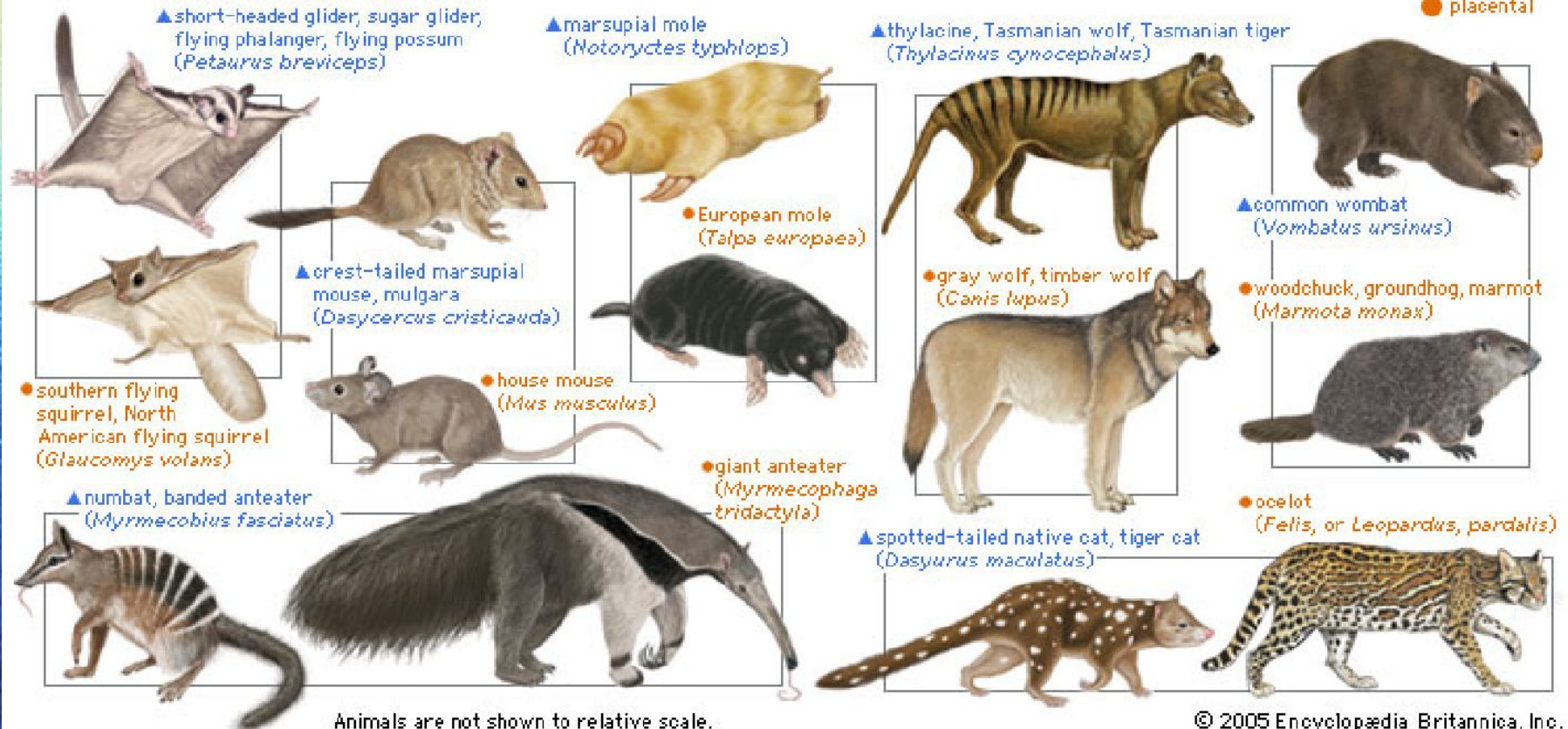
Neotropical



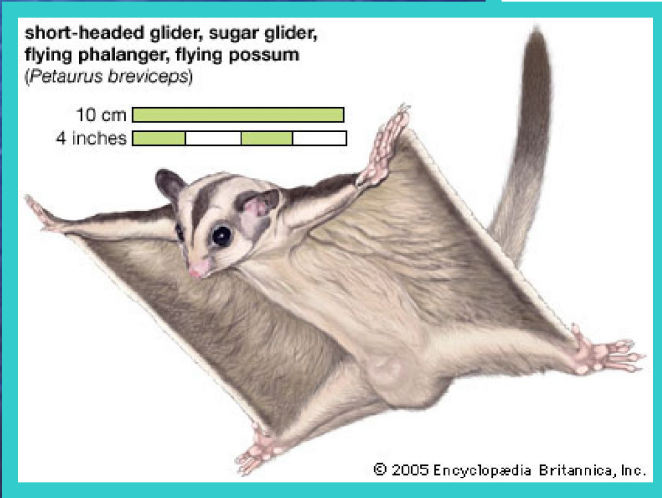
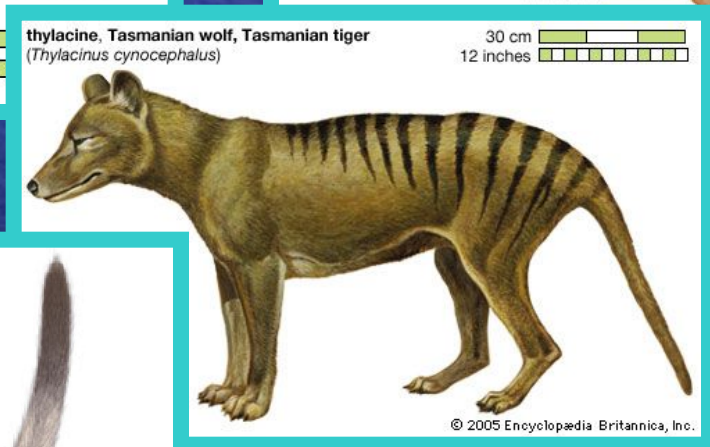
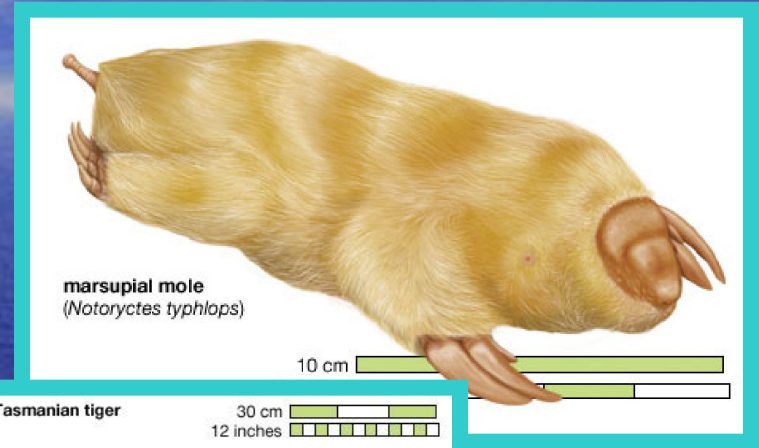
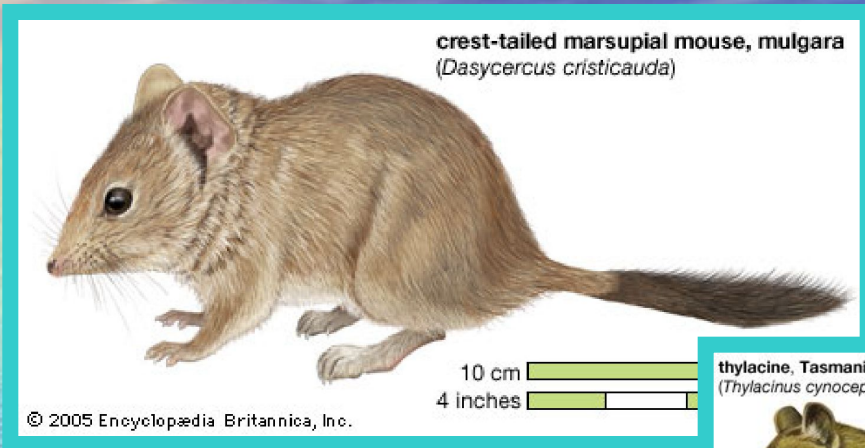
# Structural and behavioral parallels with placental mammals are in some cases quite striking.

## Parallel evolution of marsupial and placental mammals

▲ marsupial  
● placental



# There are marsupials that look remarkably like moles, shrews, squirrels, mice, dogs, and hyenas.



The koala and the kangaroo  
are the most well-known  
marsupials.



# Marsupials

Long-nosed  
bandicoot



Spotted-tailed  
quoll,  
or native cat



# Marsupials

Virginia,  
or opossum



# Marsupials



Red kangaroo

—

Wallaby



Western grey kangaroo

# Marsupials



Kangaroo Rat



Dunnart,  
a marsupial  
mouse



# Marsupials



Tasmanian Devil



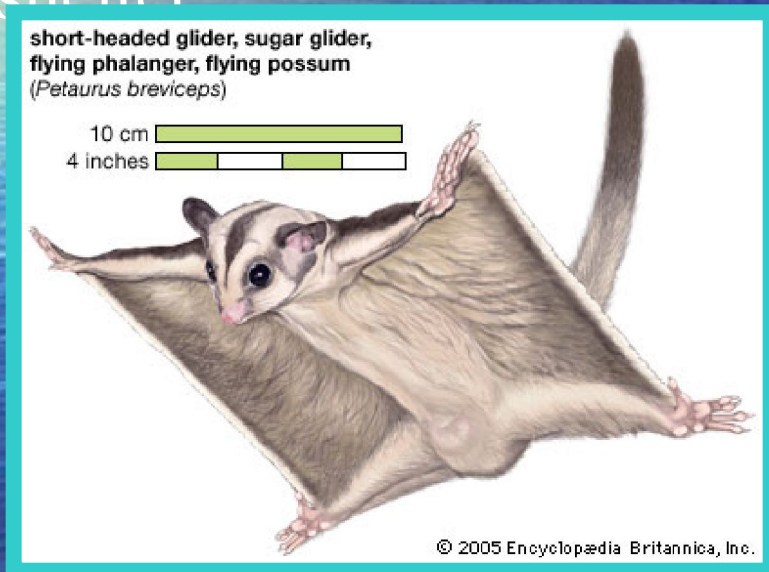
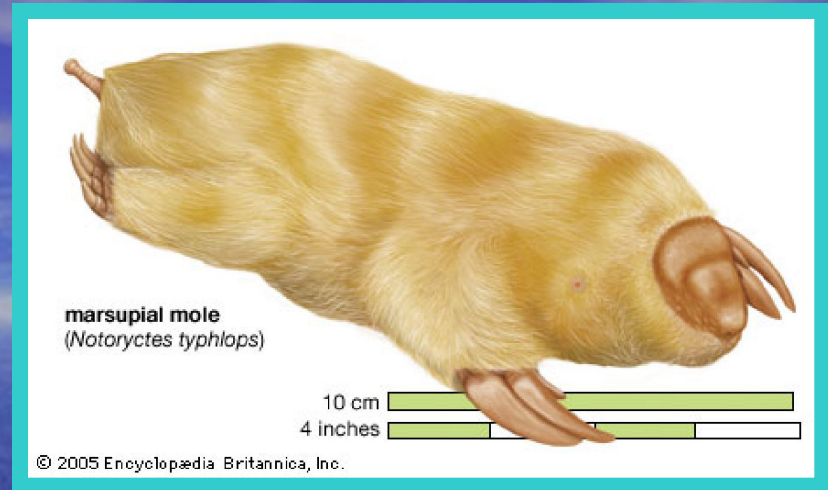
Wombat

Marsupials  
The niches that marsupials  
fill  
are closely associated  
with structure.



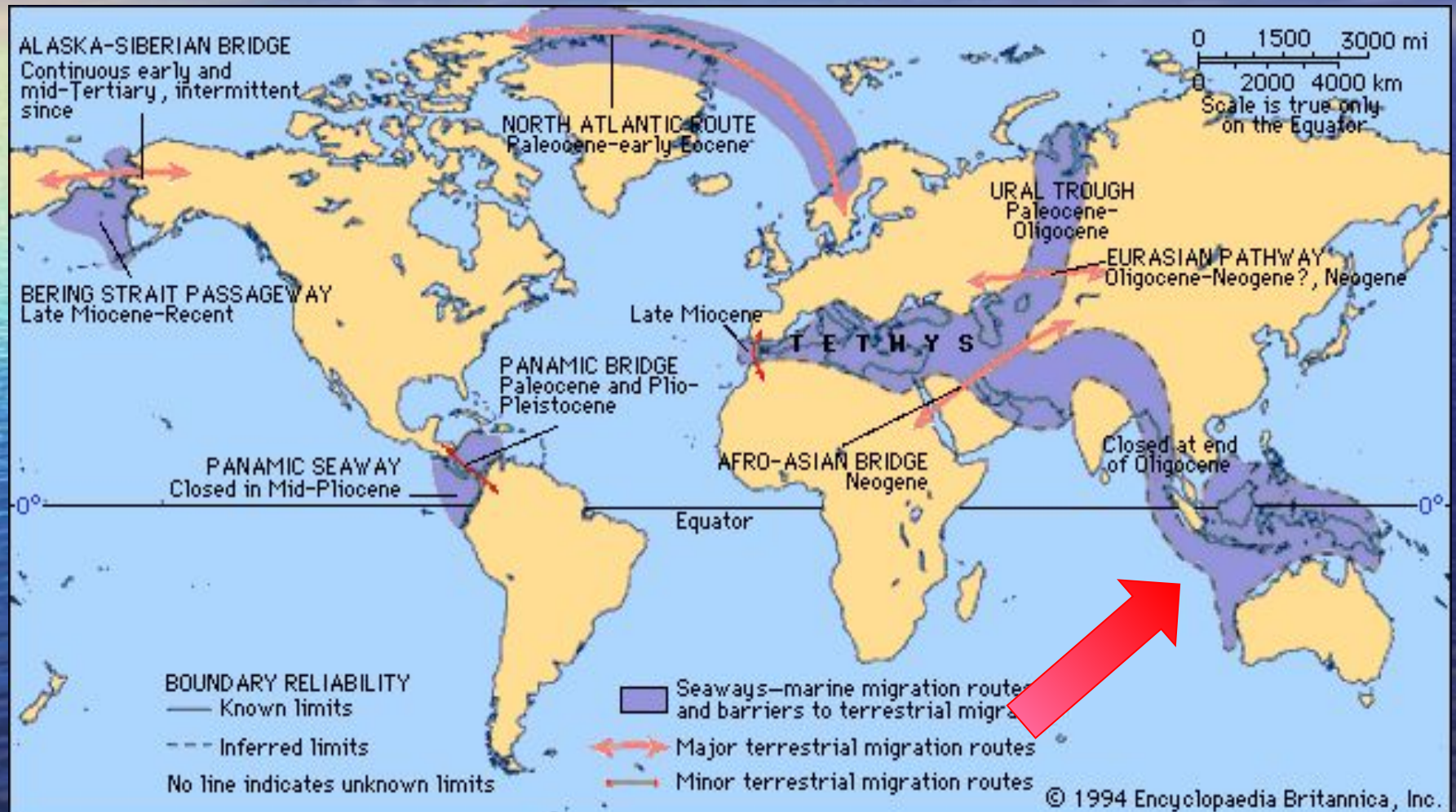
The diets of marsupials  
are as varied  
as the niches they occupy.

The burrowing species have powerful foreclaws with which they can tunnel into the ground for food and for shelter



The gliders have a membrane along either flank, attached to the forelegs and hind legs, that enables the animals to glide down from a high perch

# Cenozoic Era: faunal migration routes and barriers



The earliest isolation of Australia from all the other continents made its fauna unique



# Literature

- Т. Клементьева, Дж. Шэннон Гарри English-3 – Обнинск: Титул, 2005
- Д. Эттенборо Живая природа – М.: Мир книги, 2001
- Britannica 2007 Ultimate Reference Suite DVD - энциклопедия, англоязычное издание: [www.britannica.co.uk](http://www.britannica.co.uk)