

# ZOOGEOGRAPHY

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V Sem B.Sc. Zoology – Core Course VII – Ethology,  
Evolution & Zoogeography

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# ANIMAL DISTRIBUTION



# KINDS OF ANIMAL DISTRIBUTION

- × **SPATIAL DISTRIBUTION** (Distribution of animals in different parts of the world)
- × **GEOLOGICAL DISTRIBUTION**( Distribution of animals in past) – Related to evolutionary history of life on earth – revealed by study of Fossils.

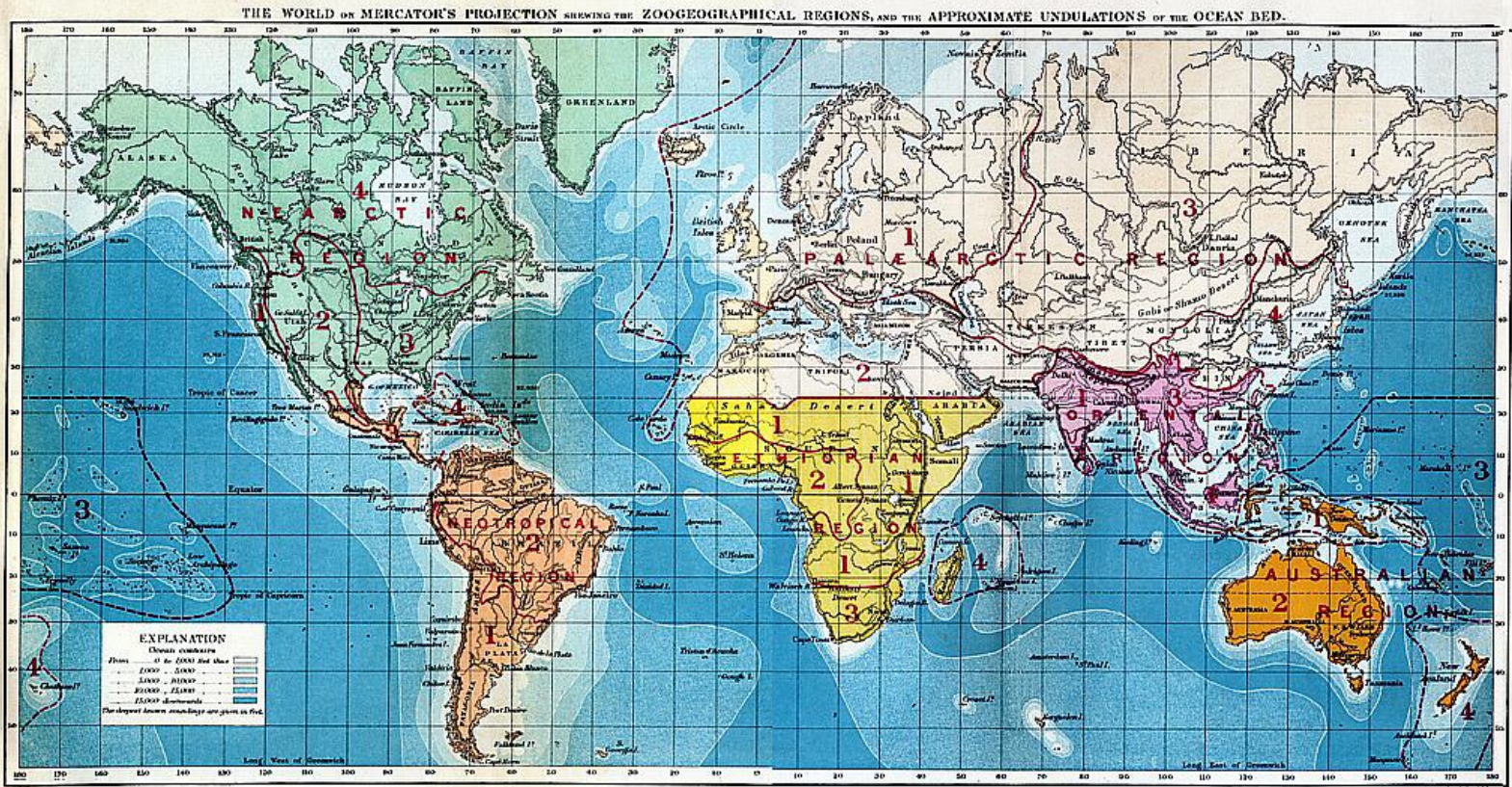
# SPATIAL DISTRIBUTION

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1. GEOGRAPHICAL DISTRIBUTION – Horizontal distribution of animals in different geographical regions and natural habitats- ZOOGEOGRAPHICAL REALMS
2. BATHYMETRIC DISTRIBUTION – Vertical distribution of animals on land & water
  - ❖ Geobiotic – vertical distribution on land
  - ❖ Holobiotic - vertical distribution in sea
  - ❖ Limnobiologic - vertical distribution in inland freshwater bodies

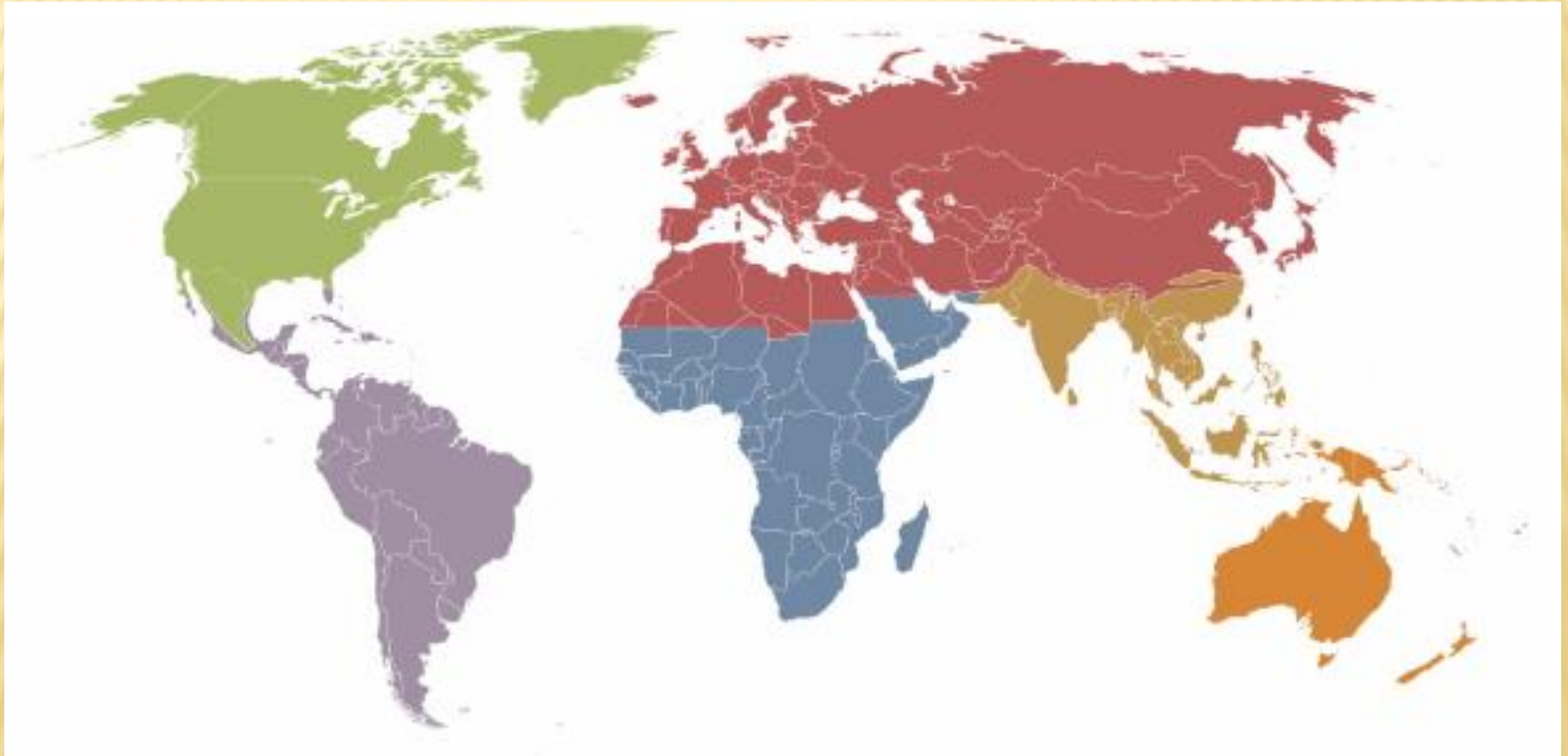


# GEOGRAPHICAL DISTRIBUTION





# ZOOGEOGRAPHICAL REALMS



# PATTERNS OF DISTRIBUTION

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- ❑ COSMOPOLITAN DISTRIBUTION
- ❑ DISCONTINUOUS DISTRIBUTION
- ❑ ISOLATED DISTRIBUTION
- ❑ BIPOLAR DISTRIBUTION

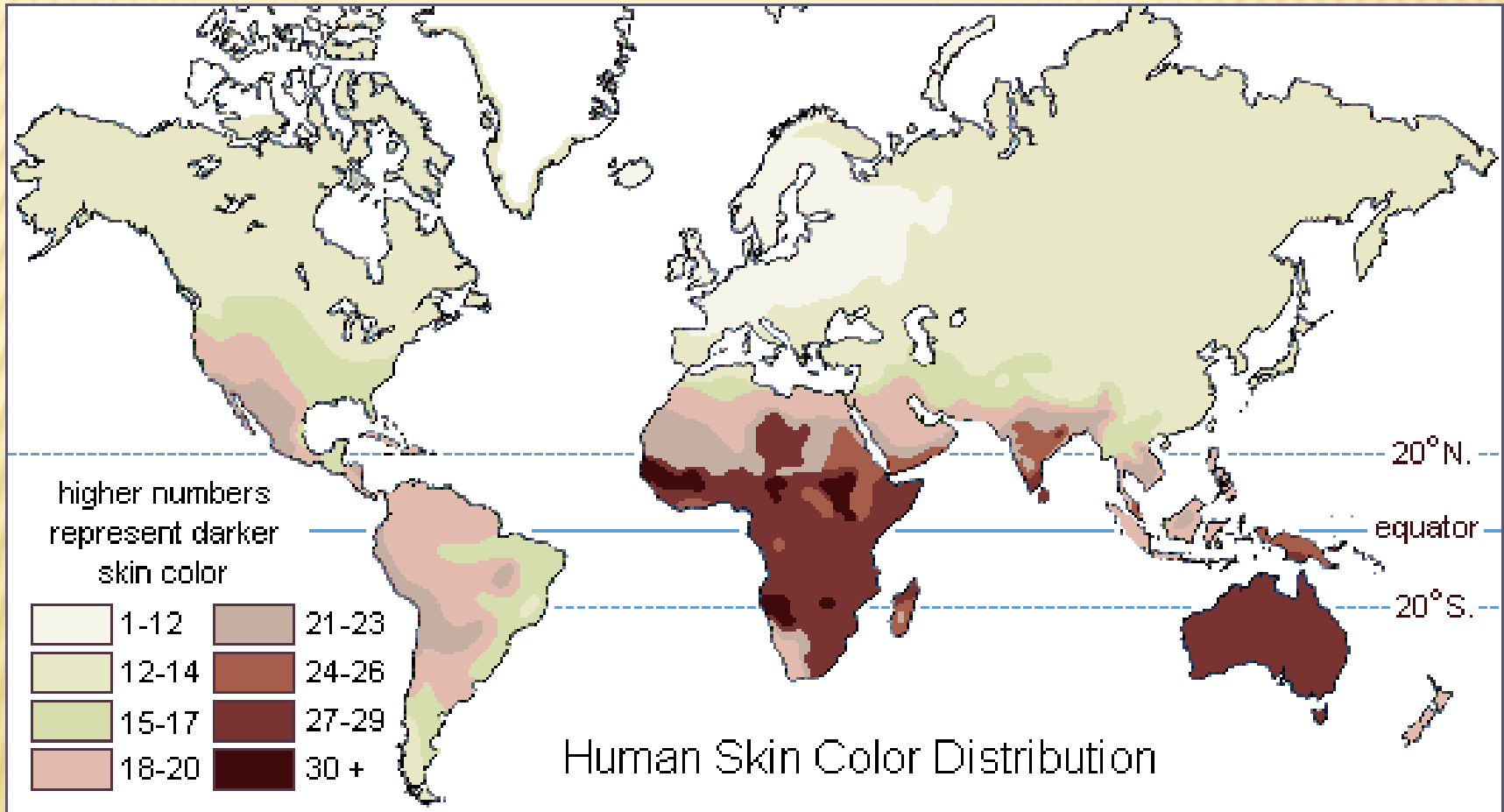
# COSMOPOLITAN DISTRIBUTION

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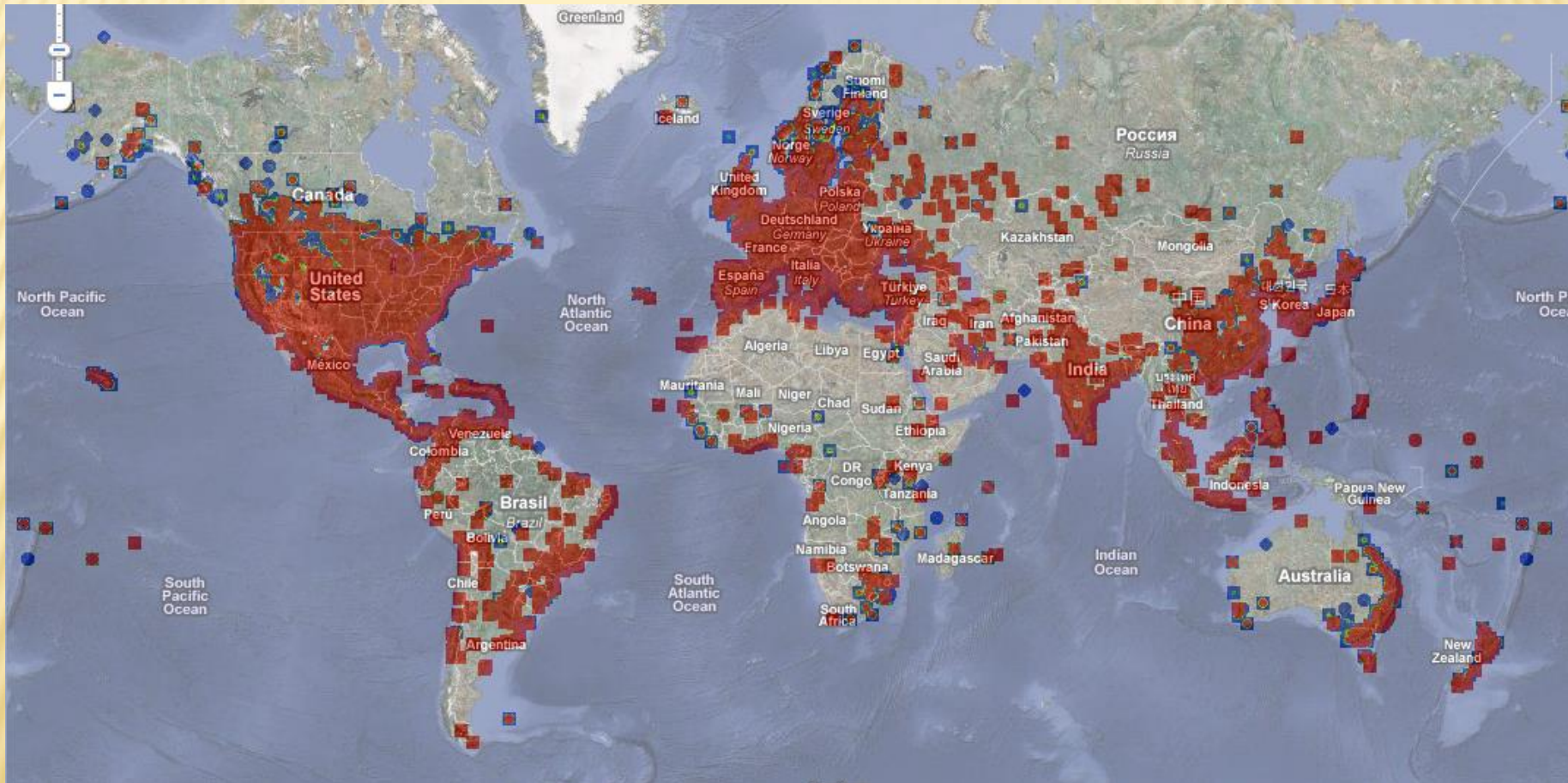
- ✘ Universal, world wide or continuous distribution
- ✘ Members of a species present all over the world
- ✘ Eurytopic species – animals with wide range of tolerance and adaptations to a wide variety of environmental conditions.
- ✘ Stenotopic species – found in restricted regions with limited adaptations to environmental conditions.
- ✘ Egs. Man, Green Mussel, Brine Shrimp, Bats, Cuckoos, Hawks, etc



# HUMAN DISTRIBUTION



# CUCKOO DISTRIBUTION





# DISCONTINUOUS DISTRIBUTION

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- ✘ Disjunctive distribution
- ✘ Member of same or closely related species distributed in localized, widely separated and geographically unconnected regions
- ✘ Egs. PERIPATUS, LUNG FISHES, FLIGHTLESS BIRDS, POUCHED MAMMALS, PROSOMIANS, CAMELIDAE, ELEPHANTS, ETC.

# DISCONTINUOUS DISTRIBUTION

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## × REASONS

- × Migration of land animals across water to reach oceanic islands
- × Continental drift and submergence of land bridges
- × Extinction of animals in areas in between current distribution
- × Other factors – climate changes, predation pressure, natural calamities, diseases, new barriers formed

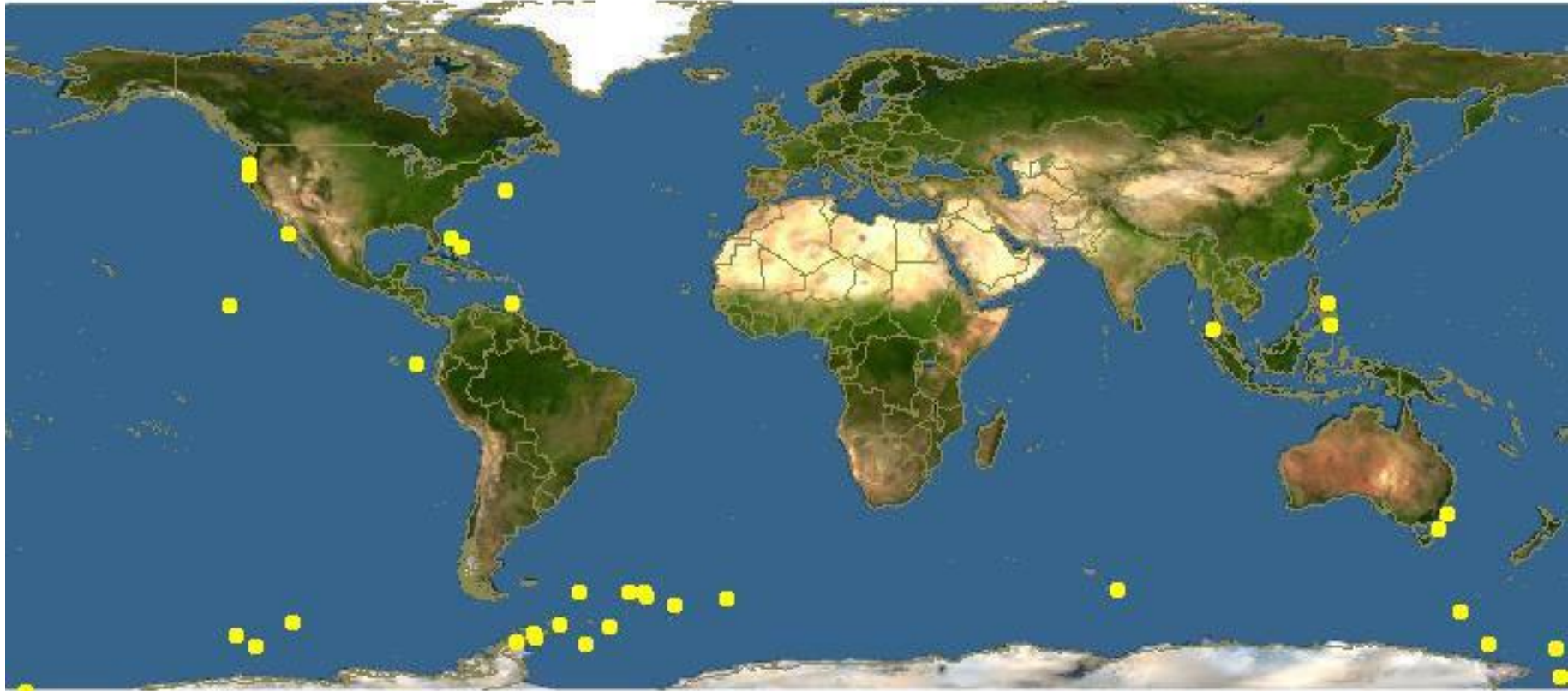


# PERIPATUS



# PERIAPTUS DISTRIBUTION

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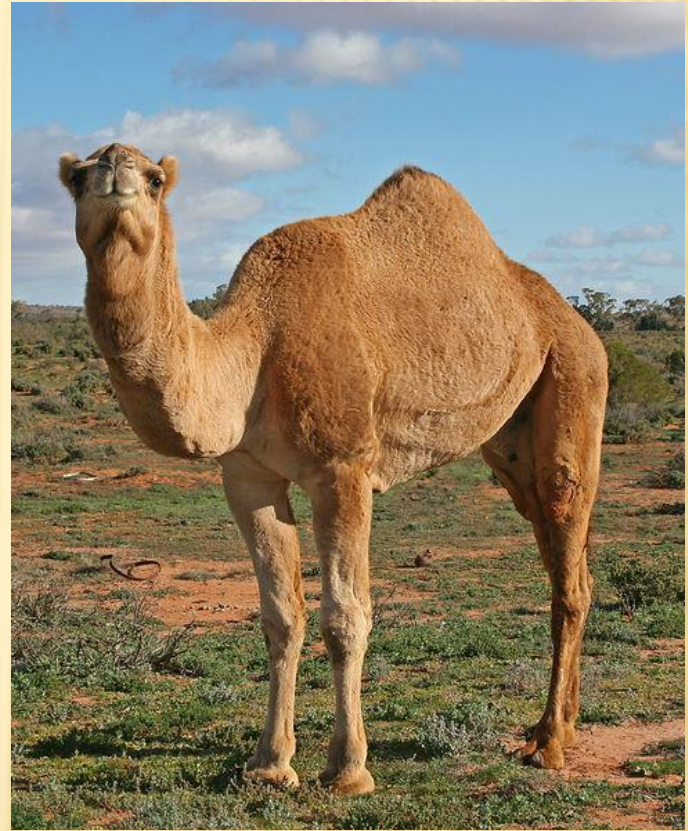




**BACTRIAN CAMEL- STEPPES OF CENTRAL ASIA**



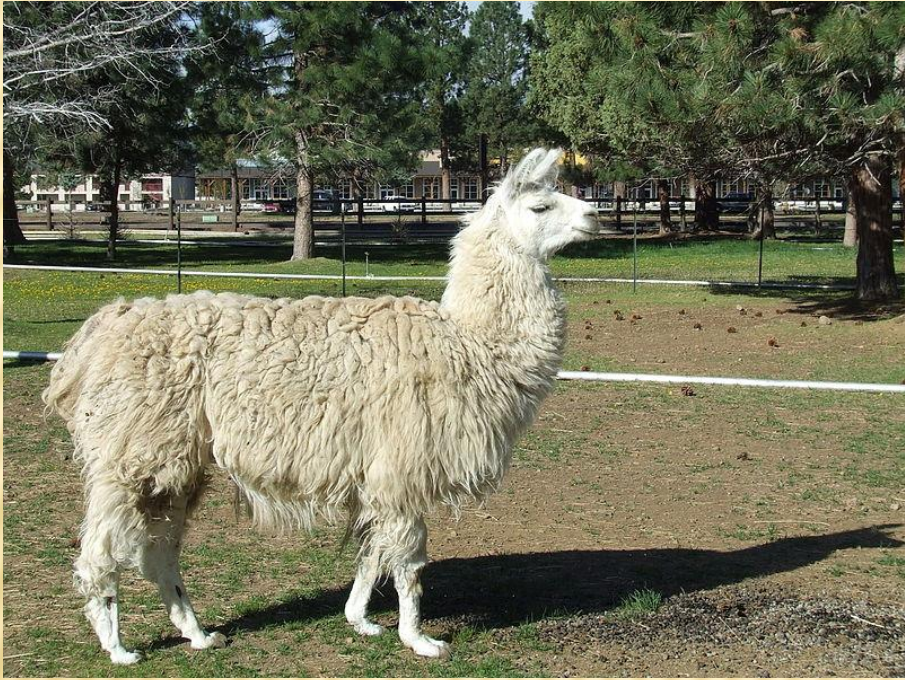
**CAMEL – AFRICA & ASIA**



**CAMELIDAE**



**LLAMA- SOUTH AMERICAN**



**GUANACO – SOUTH AMERICAN**



**CAMELIDAE**



**APLACA - SOUTH AMERICAN**

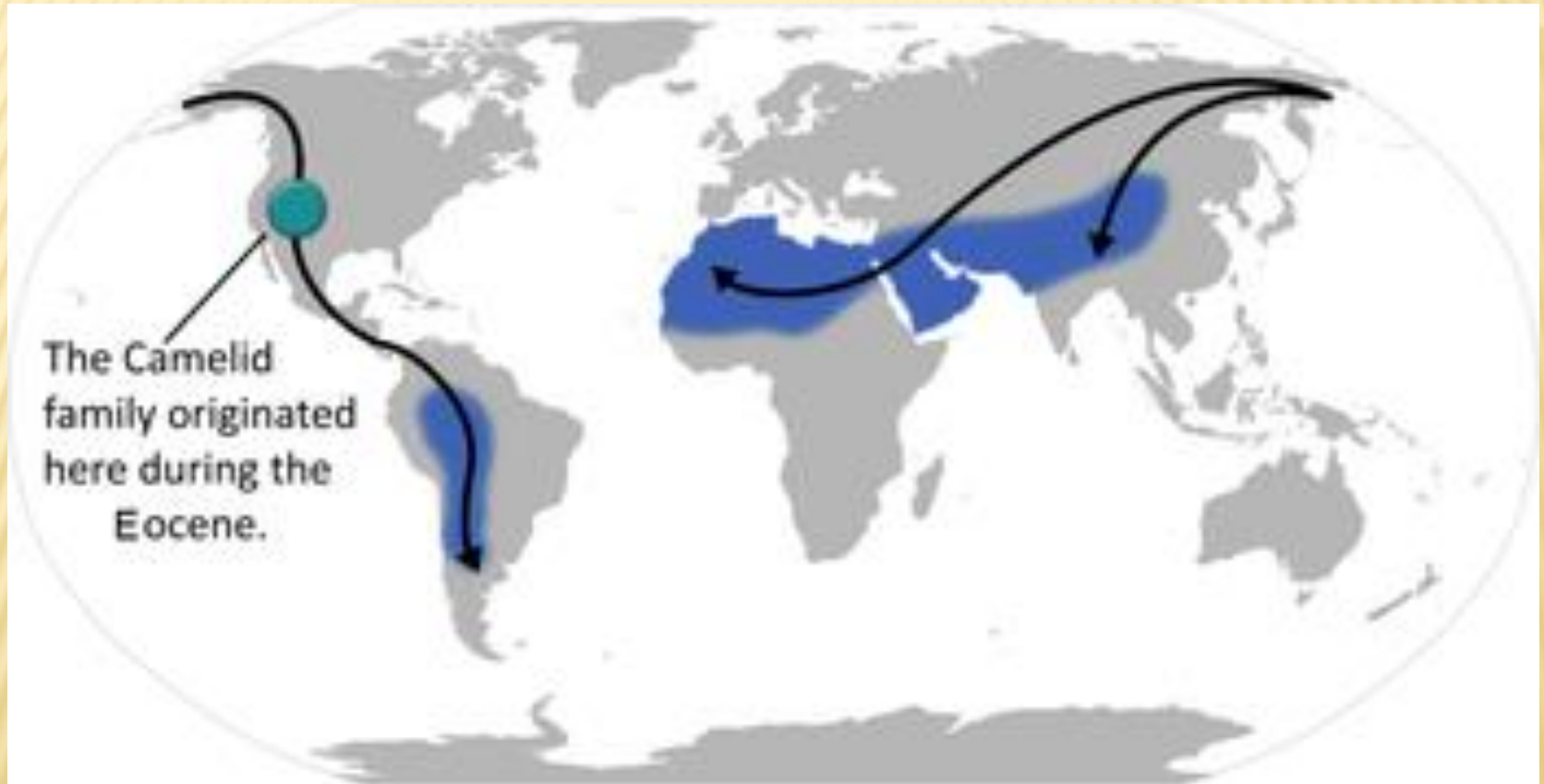


**VICUGNA - SOUTH AMERICAN**



**CAMELIDAE**

# CAMELID ORIGIN & MIGRATION





# LUNG FISHES



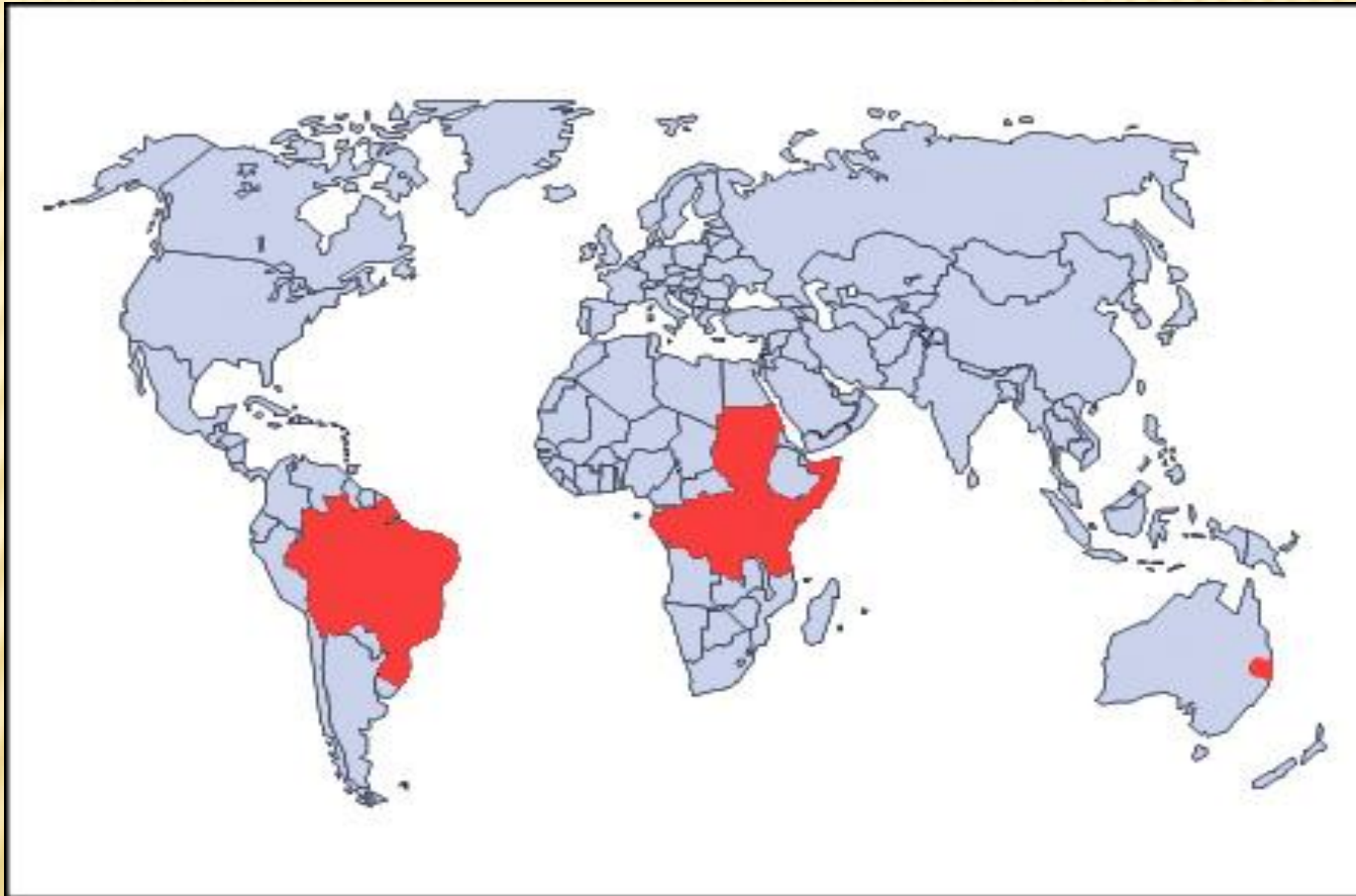
**Australian lungfish**  
(*Neoceratodus forsteri*)

**South American lungfish**  
(*Lepidosiren*)



**African lungfish**  
(*Protopterus*)

# LUNG FISHES - DISTRIBUTION

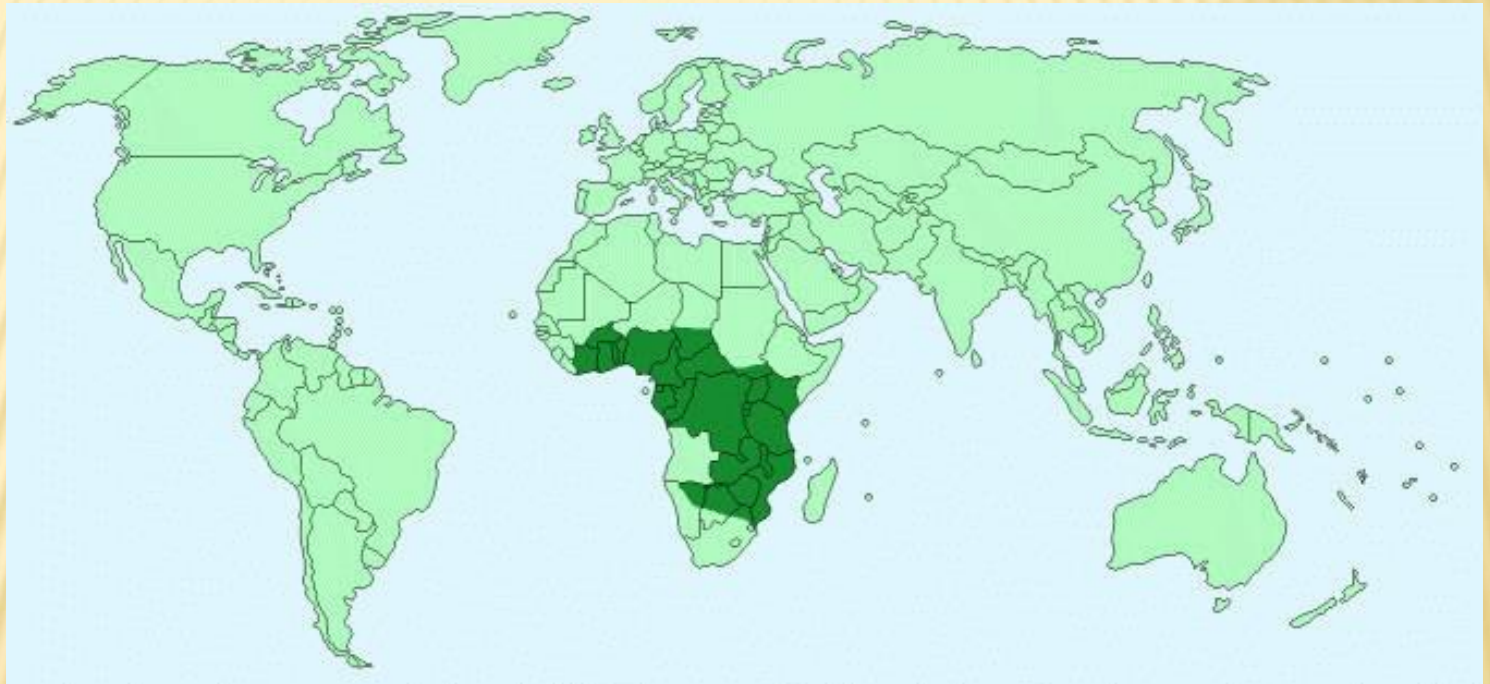




# DISTRIBUTION ASIAN ELEPHANTS



# DISTRIBUTION- AFRICAN ELEPHANTS





**AFRICAN FOREST**



**AFRICAN GRASS**



**AFRICAN ELEPHANT**

# ASIAN ELEPHANT

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# DISTRIBUTION OF NON HUMAN PRIMATES

Sketch of current distribution of non-human primates

New world primates

prosimians  
monkeys  
(e.g. cebus, tamarins, howlers;  
some with prehensile tails, e.g.  
squirrel monkeys.)

African primates

prosimians  
monkeys (e.g. baboons  
and vervets)  
apes (gorilla, chimpanzees)

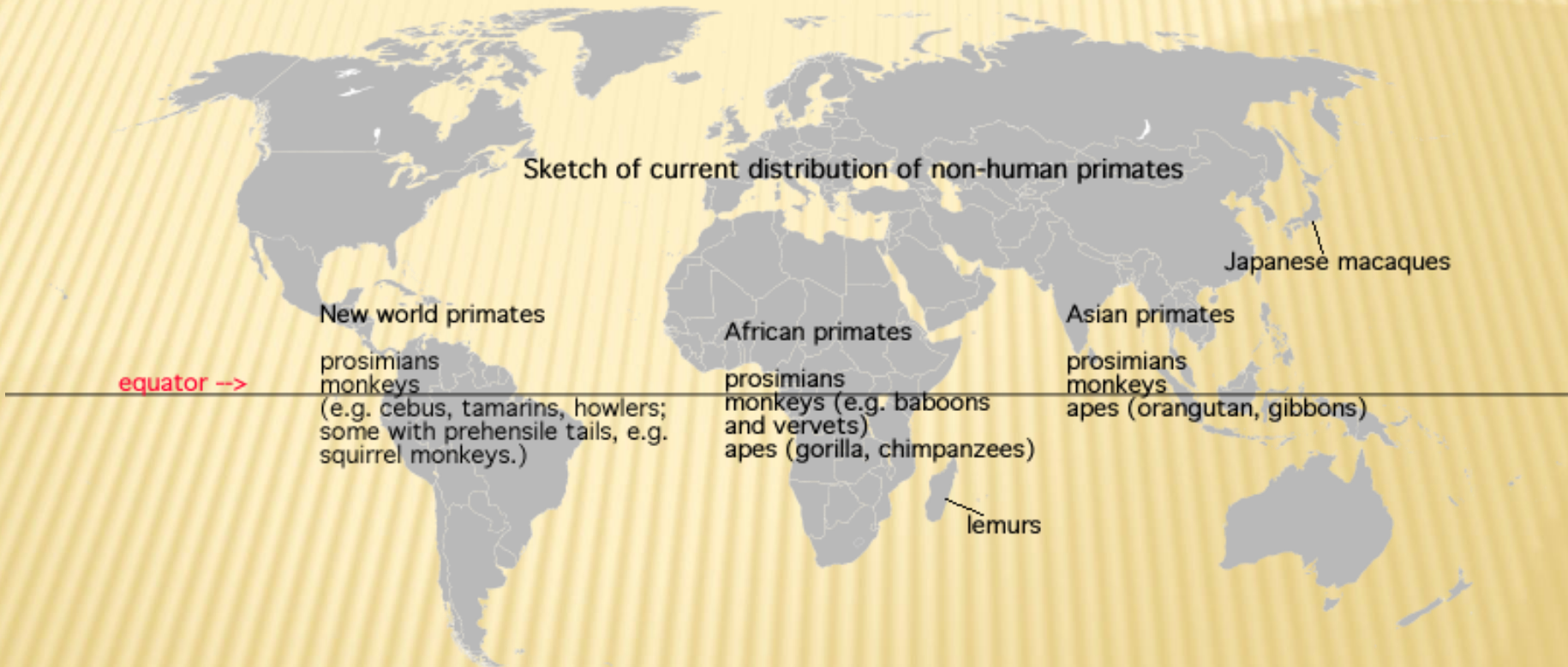
Asian primates

prosimians  
monkeys  
apes (orangutan, gibbons)

Japanese macaques

lemurs

equator -->



# PRIMATES

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## × GREAT APES

1. Humans
2. Chimpanzees & bonobos
3. Gorillas
4. Orangutans

## × LESSER APES

Gibbons



# PRIMATES

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## × MONKEYS

### 1. OLD WORLD MONKEYS

Baboons

Macaques

### 2. NEW WORLD MONKEYS

Marmosets

Howler monkeys

Woolly monkeys

Spider monkeys

# PRIMATES

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## × PROSOMIANS

1. Tarsiers
2. Lemurs
3. Lorises



## CHIMPANZEES



## BONOBOS



# GREAT APES



## GORILLAS



## ORANGUTAN



# GREAT APES



# LESSER APES - GIBBONS



BABOONS



LION TAILED MACAQUE



**OLD WORLD MONKEYS**



## HOWLER MONKEY



## WOOLLY MONKEY



NEW WORLD MONKEY

# NEW WORLD MONKEY- SPIDER MONKEY





**GALAGO**



**LEMURS**



**PROSOMIANS**

## TARSIERS



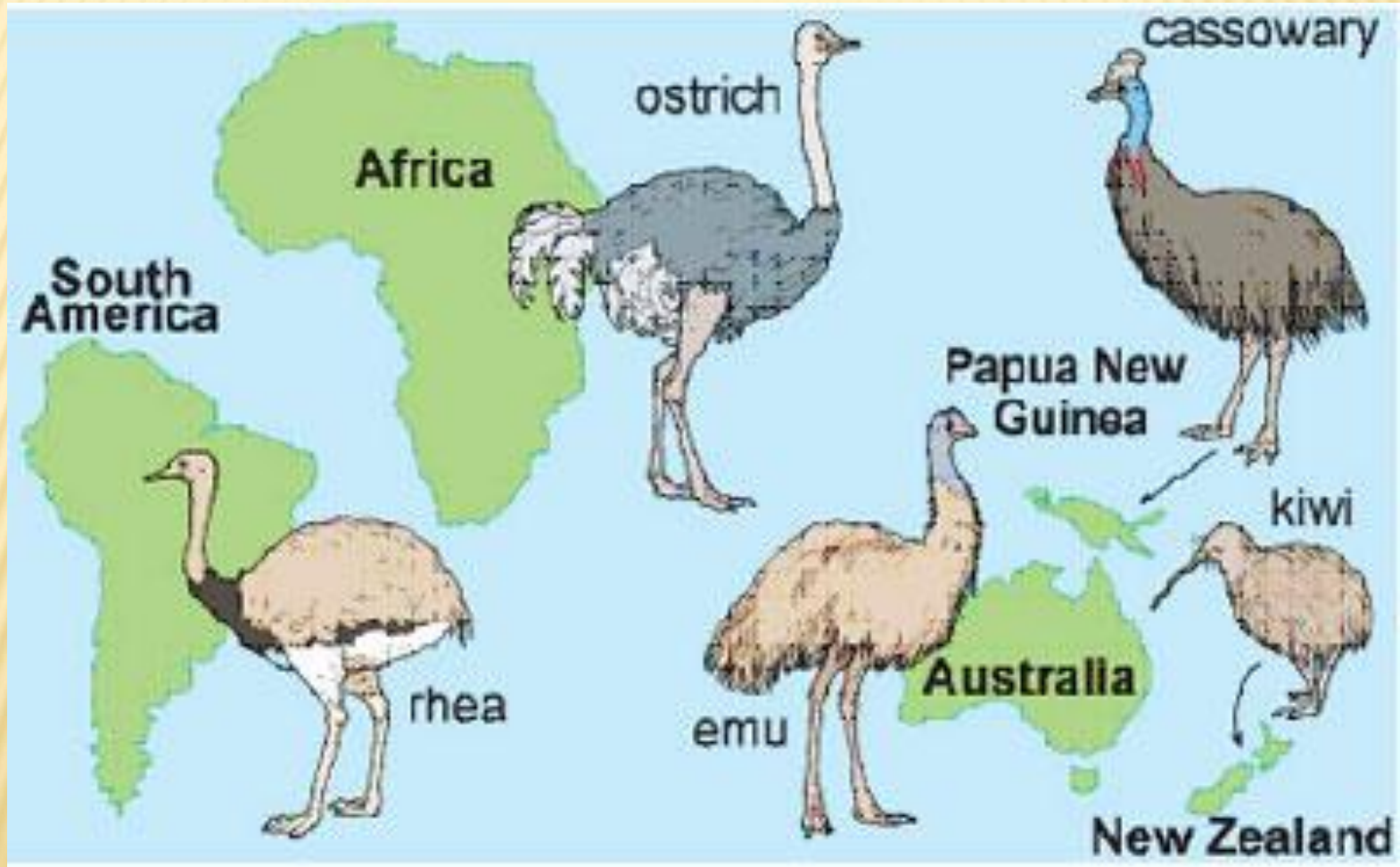
## LORIS



## PROSOMIANS



# FLIGHTLESS BIRDS



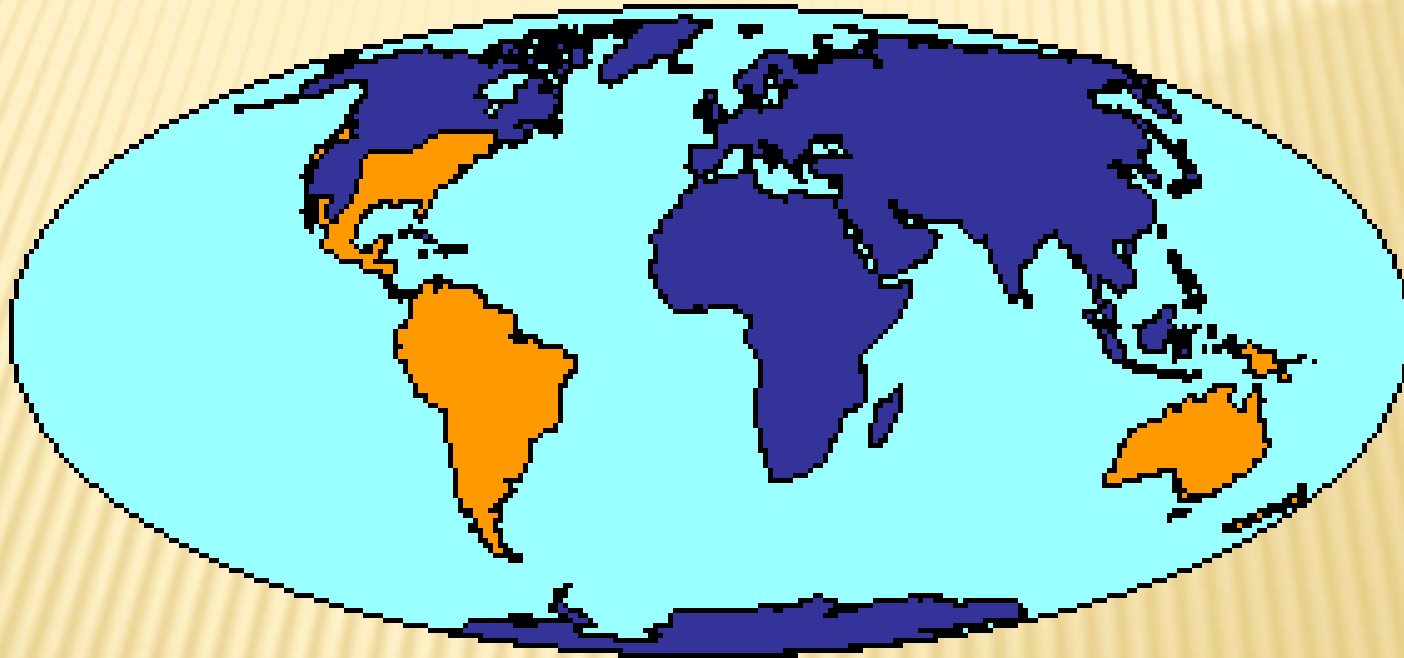
# MARSUPIALS – POUCHED MAMMALS



Top: Musky Rat-kangaroo , Brown Dorcopsis, Bilby. Bottom: Tammar Wallaby, Kangaroo, Tree Kangaroo, Koala.



# DISTRIBUTION OF MARSUPIALS



■ Distribution of marsupials today

# ISOLATED DISTRIBUTION

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- ✘ DISTRIBUTION ANIMALS EXCLUSIVELY IN ISOLATED REGIONS OF EARTH
- ✘ OFTEN LIVING FOSSILS
  1. SPHENEDON OF NEW ZEALAND
  2. DUCK BILLED PLATYPUS OF AUSTRALIA, TASMANIA & NEW GUINEA
  3. OPOSSUMS OF AMERICA

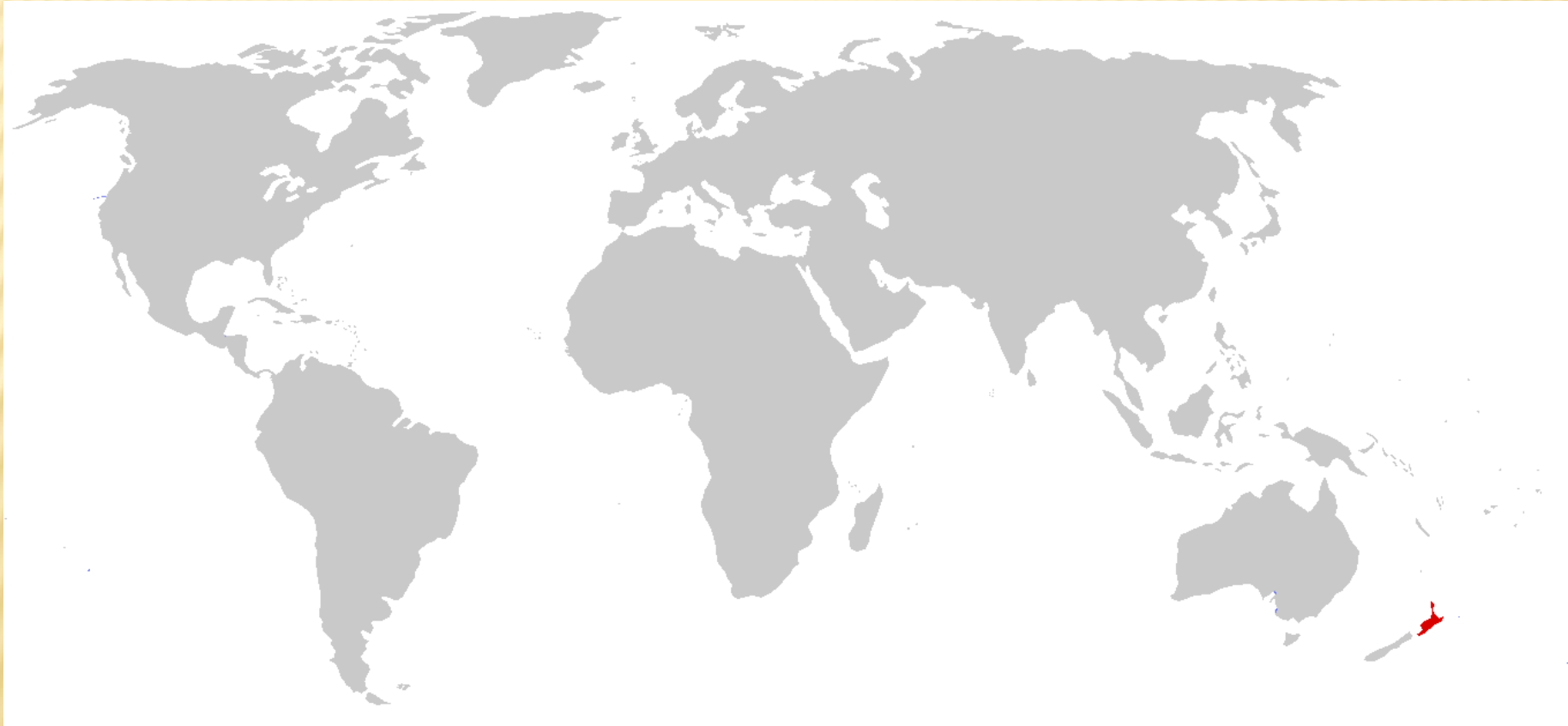


# SPHENODON

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# DISTRIBUTION OF SPHENODON





DUCK BILLED PLATYPUS



OPOSSUM



EXAMPLES

# BIPOLAR DISTRIBUTION

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- ✘ DISTRIBUTION OF ANIMALS EXCLUSIVELY IN POLAR REGIONS- ARTIC & ANTARCTIC
- ✘ NO REPRESENTATIVES IN BETWEEN REGIONS
- ✘ CHALLENGER EXPEDITION 1872-76 BROUGHT OUT BIPOLAR DISTRIBUTION



# EXAMPLES OF BIPOLAR DISTRIBUTION

- ✘ CNIDARIA – Lampra, Myriothela, Grammaria
- ✘ MOLLUSCA – Limacina, Clione
- ✘ UROCHORDATA – *Didemus albidum*
- ✘ PISCES – Oncorhynchus (Pacific Salmon) & *Lamna cornbica* (Shark)



**THANK YOU**