



**ZOOGEOGRAPHICAL
REGIONS**

Lecture 5

**AUSTRALIAN
REGION**

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Subject: Zoology

Course Title: Zoogeography

&

Paleontology

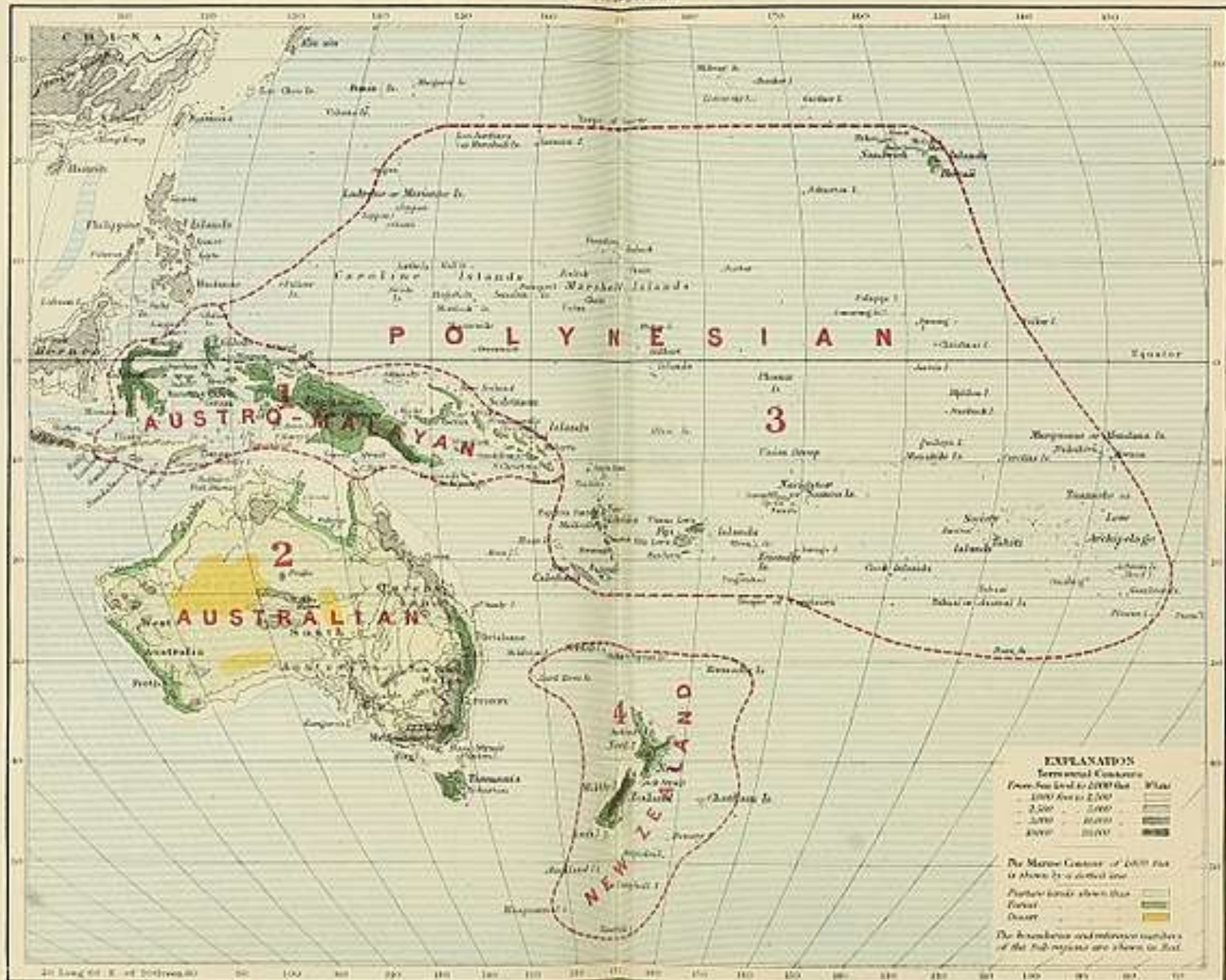
M.Sc. II (Evening) Semester III

AUSTRALIAN REGION

- **EXTENT:** The Australian Region covers Australia, Tasmania, New Guinea and a number of smaller islands of Indonesian archipelago.
- New Zealand and some Pacific islands are also included in this region but many zoogeographers prefer to treat them separately as ancient island and oceanic island respectively.

AUSTRALIAN REGION

Scale 1:100,000 miles



EXPLANATION

Topographical Contours
From Sea Level to 10,000 feet

Elevation (feet)	Symbol
1000 to 2500	Lightest shading
2500 to 5000	Light shading
5000 to 7500	Medium shading
7500 to 10,000	Dark shading
10,000 to 15,000	Darkest shading

The Marine Contour of 1000 feet is shown by a dotted line.
Further levels shown than Forest
Desert

The boundaries and reference numbers of the sub-regions are shown in Red.

PHYSICAL FEATURES AND CLIMATE

- Australian region is partly tropical and partly temperate in character.
- The region is unique in having no land connection with any other region.
- New Guinea and northern part of Australia are tropical and covered with luxuriant tropical rain forests.
- Southern Australia has temperate climate and is covered with Eucalyptus and hardwood forests.
- The interior of Australian continent consists of hot plains and deserts.

ZOOLOGICAL CHARACTERISTICS

- The vertebrate fauna of Australian region is very poor, it lacks variety as well as the number of families.
- It is characterized by the absence of higher placental mammals and presence of primitive forms.
- Due to presence of primitive forms, Australian region is often referred to as the **Veritable Museum of Archaic Animals.**

PRIMITIVE FAUNA OF AUSTRALIAN REGION

- Primitive forms include:
- **Mammals** such as **Monotremes** (egg-laying mammals) and **Marsupials** (pouched mammals).
- **Birds** such as cassowaries, emus, tooth-billed pigeons and birds of paradise.
- **Reptiles** such as scale-footed lizard.
- **Fish** like *Neoceratodus* (lung-fish)
- Freshwater mussel *Trigonia* and **mountain shrimp** (Anaspids)

WHY AUSTRALIA INHABITS SUCH A STRANGE ARCHAIC FAUNA?

- The **prolonged physical isolation** of the continent provided refuge to its primitive forms and prevented the higher and more aggressive placental mammals from reaching this lone continent

MAMMALIAN FAUNA

- Australian region has **134** of terrestrial vertebrates of which **30** are unique to this region.
- There are **nine** families of **mammals** (excluding bats), of these only **one** family is of placental mammals (the murid mouse).
- Other **eight** families which are **unique** to this region contain only the **Monotremes** and **Marsupials.**

MARSUPIALS

- The placental mammals like rabbits, foxes, rats and mice are introduced by humans.
- The most conspicuous **Marsupials** (the pouched mammals) of the region are kangaroos, wallabies, bandicoots, phalangers, wombats, etc.
- Marsupials exhibit an excellent example of **Parallel Radiation** occupying all types of ecological niches as occupied by placental mammals in other parts of the world. Thus there are all types of marsupials like herbivores, insectivores, arboreal, fossorial, etc.

MARSUPIALS

WALLABY



RED
KANGAROO



WOMBAT

MONOTREMES

- Two unique families of **monotremes** are represented by :
 - i) Duck-billed *Platypus*
 - ii) Spiny anteater *Echidna*
- Both are **egg-laying** mammals.

MONOTREMES



**SHORT-BEAKED
ECHIDNA**

Tachyglossus aculeatus



**DUCK-BILLED
PLATYPUS**

Ornithorhynchus anatinus

AVIAN FAUNA

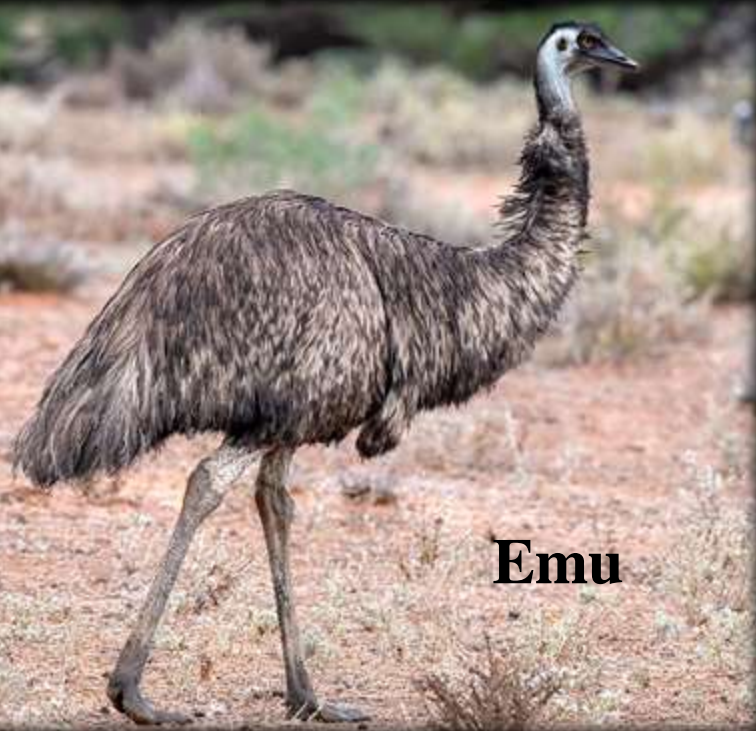
- The avian fauna of Australian region is also very peculiar and rich.
- **Ten** families are **unique** and include **flightless birds**, birds of paradise, lyre birds, honey suckers, bower birds and tooth-billed pigeon.
- Parrots and pigeons exhibit a great diversity.
- **Three** exclusive sub-families of parrots (cockatoos, lorries and pygmy parrots) are unique to this region.
- Trogons, cuckoos, kingfishers and honey suckers have a wide range.



Lyre bird



Cassowary



Emu



Cockatoo

REPTILIAN FAUNA

- Australian reptilian fauna is moderately varied and only two families are exclusive:
 - i) Carettochelyidae - fly-river turtle
 - ii) Pygopodidae - scale-footed lizard
- Among the large lizards, **Komodo Dragon** (a species of varanus), is notable.
- Crocodiles are present in tropical parts of this region.



Scale-footed lizard



Fly-river turtle



Komodo dragon



Crocodile

AMPHIBIAN FAUNA

- Amphibians are represented by a few species.
- Tailed amphibians are absent.
- Common frogs and tree frogs are represented by more than **100** species.
- Australia being the only region where common toad is absent.

FISH FAUNA

- The freshwater fish fauna of Australian region is very poor.
- Of the three living genera of lungfishes, one the *Neoceratodus*, is found in the rivers of Queensland.



Neoceratodus

AFFINITIES

- The whole Australian region is characterized by the presence of many primitive forms, especially the unique mammals and flightless birds.
- Fauna of this region is also remarkable for its poverty of freshwater fishes, amphibians and reptiles.

- Some species of frogs, turtles and marsupials resemble with those of Neotropical region.
- Many birds and reptiles show a close affinity with the Oriental region.
- Australian fauna shows no affinity with the Ethiopian region.