

ZOOGEOGRAPHY

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

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A photograph of a dense forest with tall, slender trees and a path leading into the distance. The scene is bathed in soft, green light, creating a serene and natural atmosphere. The text "ZOOGEOGRAPHICAL REALMS" is overlaid in a large, red, serif font across the middle of the image.

ZOOGEOGRAPHICAL REALMS

INTRODUCTION

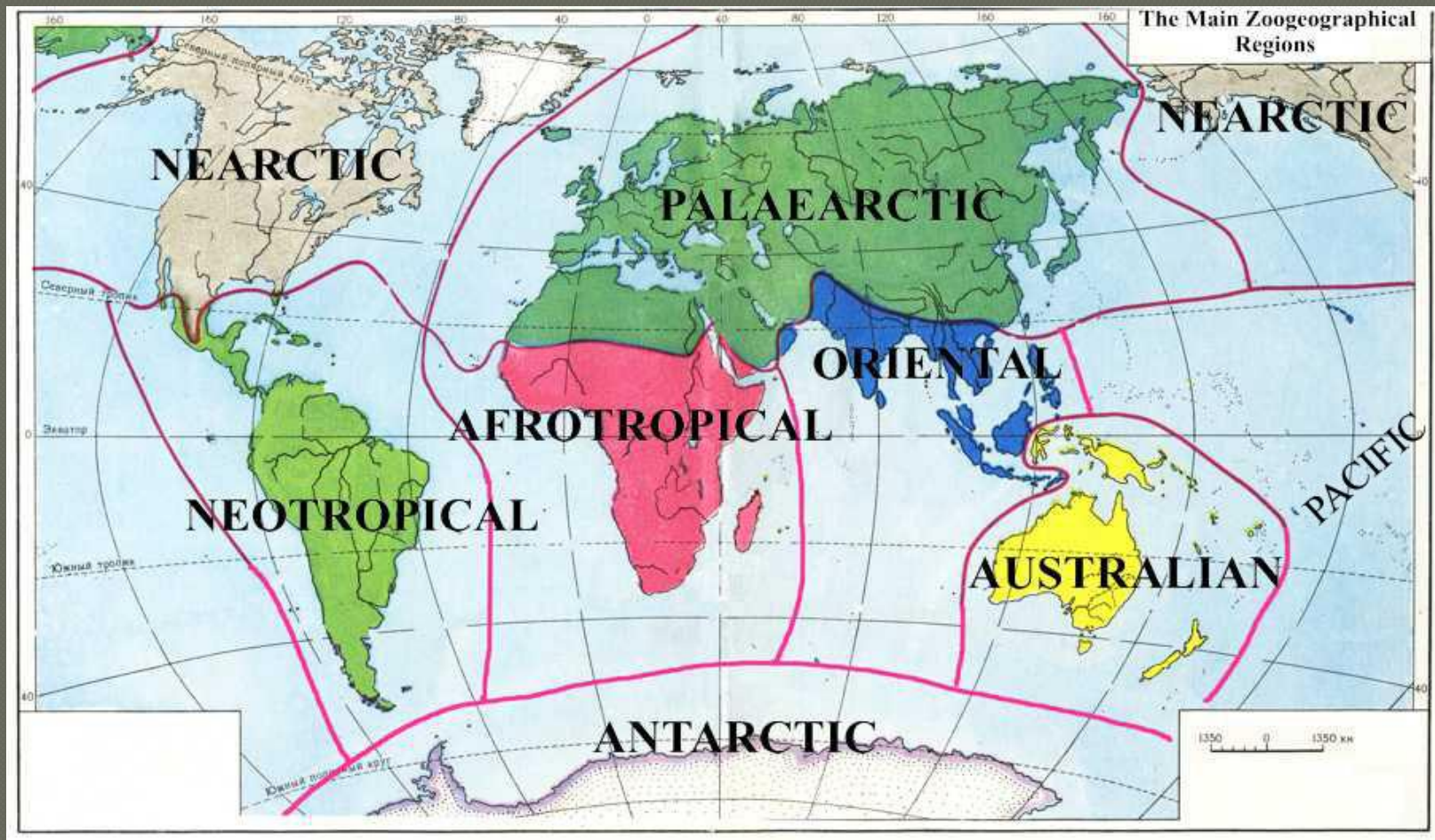
Based on faunal peculiarities
and the patterns of animal
distribution, the earth surface
divided into
ZOOGEOGRAPHICAL REALMS.

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- ◉ The term “Realm” – Lydekker
 - ◉ Scalter (1867) – 6 Realms – based on Birds distribution
 - ◉ Alfred Russel Wallace (1876) modified Scalter’s classification
 - ◉ Heilprin
 - ◉ Darlington

ZOOGEOGRAPHICAL REALMS

- PALEARCTIC REALM
- ETHIOPIAN REALM
- ORIENTAL REALM
- AUSTRALIAN REALM
- NEARTIC REALM
- NEOTROPICAL REALM

ZOOGEOGRAPHICAL REALMS



ZOOGEOGRAPHICAL REALMS

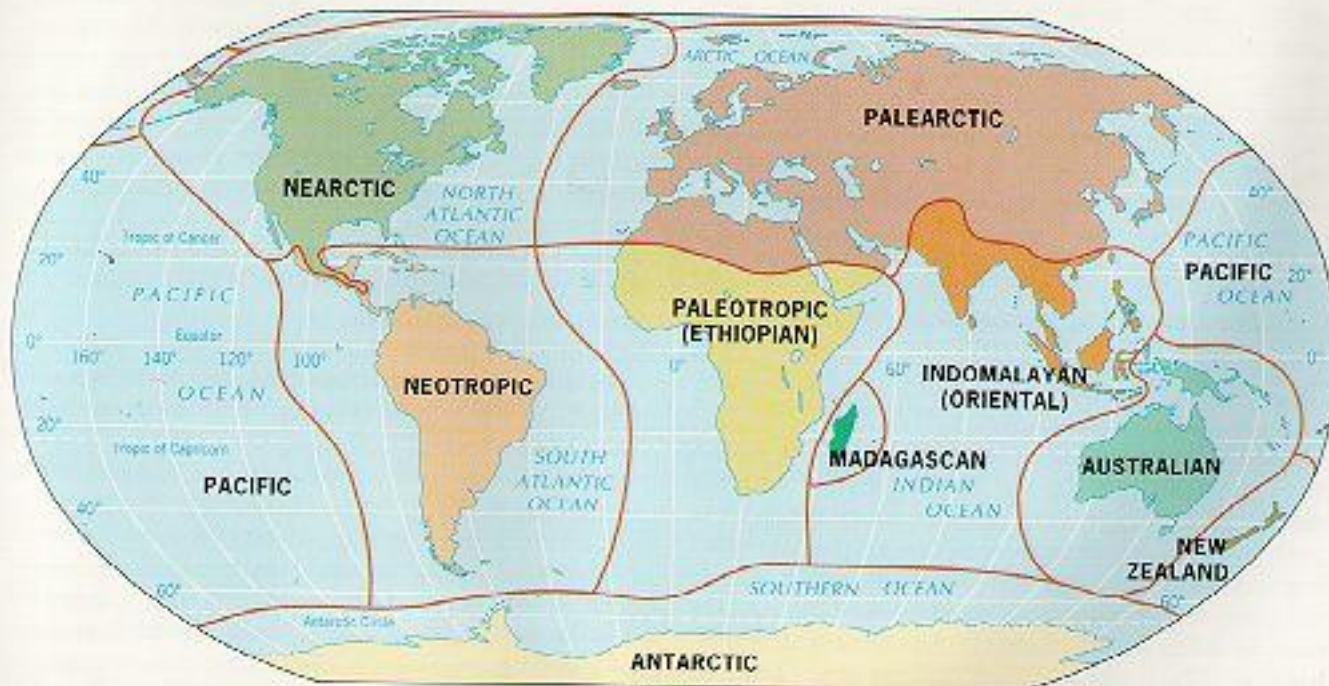


FIGURE 27-4 World zoogeographic realms.

PALEARCTIC REALM

- ▶ LARGEST OF ALL REALMS
 - ▶ EUROPE, NORTH AFRICA, ASIA, MIDDLE EAST
 - ▶ BOUNDARIES – EAST, WEST & NORTH ---- SEAS
 - ▶ SOUTH ---- ETHIOPIAN & ORIENTAL REALM
 - ▶ SUB REGIONS – EUROPEAN, MEDITERRANEAN, SIBERIAN & MANCHURIAN
- 

SUBREGIONS

- ▶ EUROPEAN- CENTRAL & NORTHERN EUROPE
 - ▶ MEDITERRANEAN- AFRICA & ASIA
 - ▶ SIBERIAN - NORTH ASIA
 - ▶ MANCHURIAN - MANCHURIA, MONGOLIA, KOREA & JAPAN
- 

PALEARCTIC REALM



PALEARCTIC REALM – Faunal Characteristics

- ▶ Similarity between Palearctic and Nearctic Regions
- ▶ Animals – 135 families of terrestrial vertebrates & 13 families of freshwater fishes
- ▶ Terrestrial vertebrates – 10 Amphibian families; 24 Reptilian families, 68 Avian families & 33 Mammalian families
- ▶ Poor vertebrate diversity
- ▶ Several mammalian sps originated in Palearctic region spread to Nearctic region during ice ages – Brown Bear, Red Deer, Elk, Bison & Reindeer.

ENDEMIC BIRDS



ACCENTOR



ENDEMIC BIRDS



GROUSE



AUKS

ENDEMIC FAUNA



WAXWINGS



MOUSE-LIKE HAMSTERS

RED PANDA



SIBERIAN CITY



Geoff Mackley

SIBERIA



SIBERIA



SIBERIA SUMMER



NEARCTIC REALM

- ◉ CANADA, USA, MEXICO & GREENLAND
- ◉ Physical features similar to PALAEARCTIC REALM
- ◉ Deciduous & Coniferous forests
- ◉ Climate temperate
- ◉ Asia & N. America - Bering Strait
- ◉ S. America & N. America - Isthmus of Panama

NEARCTIC REALM



FAUNAL CHARACTERISTICS

- ◉ 120 FAMILIES OF VERTEBRATES
- ◉ 24 - FRESH WATER FISHES
- ◉ 14 AMPHIBIANS
- ◉ 21 REPTILIAN FAMILIES
- ◉ 49 AVIAN
- ◉ 26 MAMMALIAN

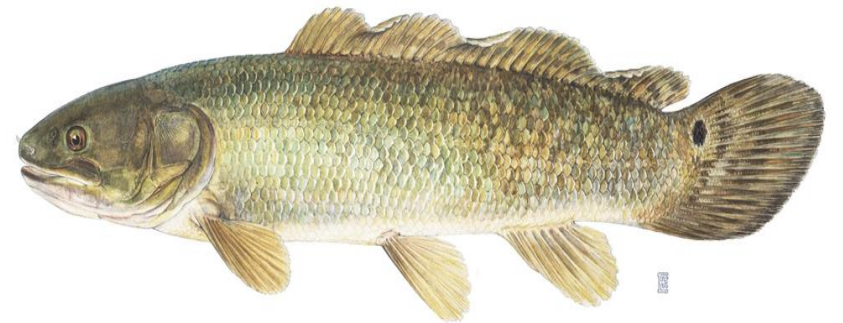
FAUNAL CHARACTERISTICS

- Megafauna - horses, camels, mammoths, mastodons, ground sloths, sabre-tooth cats, cheetah - extinct at the end of Pleistocene epoch.
- Climate change - massive hunting by newly arrived human being - extreme scarcity of prey
- Brown Bear, Elk & Bison - entered with human beings - radiated and filled empty niches left by newly extinct North American megafauna.

ENDEMIC FISHES



GARPIKE



BOWFIN

ENDEMIC BIRD FAMILY



Wrenit
Chamaea fasciata

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GILA MONSTER



Photo © Randy Babb

ENDEMIC MAMMALS



POCKET GOPHER

POCKET MOUSE

ENDEMIC MAMMALS



KANGAROO RAT



PRONG HORNS

- TROPICAL MEXICO, NORTH OF SOUTH AMERICA INCLUDING WEST INDIES, ANTILLES
- TROPICAL CLIMATE
- RAIN FORESTS, SAVANNAHS, DESERTS, SUB-DESERTS

NEOTROPICAL REALM



NEOTROPICAL REALM

- 155 TERRESTRIAL VERTEBRATES
- 39 ENDEMIC FAMILIES
- 31 Bird Families are ENDEMIC

FAUNAL CHARACTERISTICS

RHEA



TINAMOUS



BIRDS

CURASSOWS



TOUCANS



BIRDS

HUMMING BIRDS



WRENS



UNIQUE BIRDS

- ANTEATERS, SLOTHS, ARMADILLOS
- NEW WORLD MONKEYS
- CAPYBARAS, GUINEA PIGS, CHINCHILLAS
- AMERICAN OPOSSUMS
- SHREW OPOSSUMS

MAMMALS

SHREW OPOSSUM



AMERICAN OPOSSUM



MAMMALS

CAIMAN

CAIMANS
NEW CORAL SNAKES

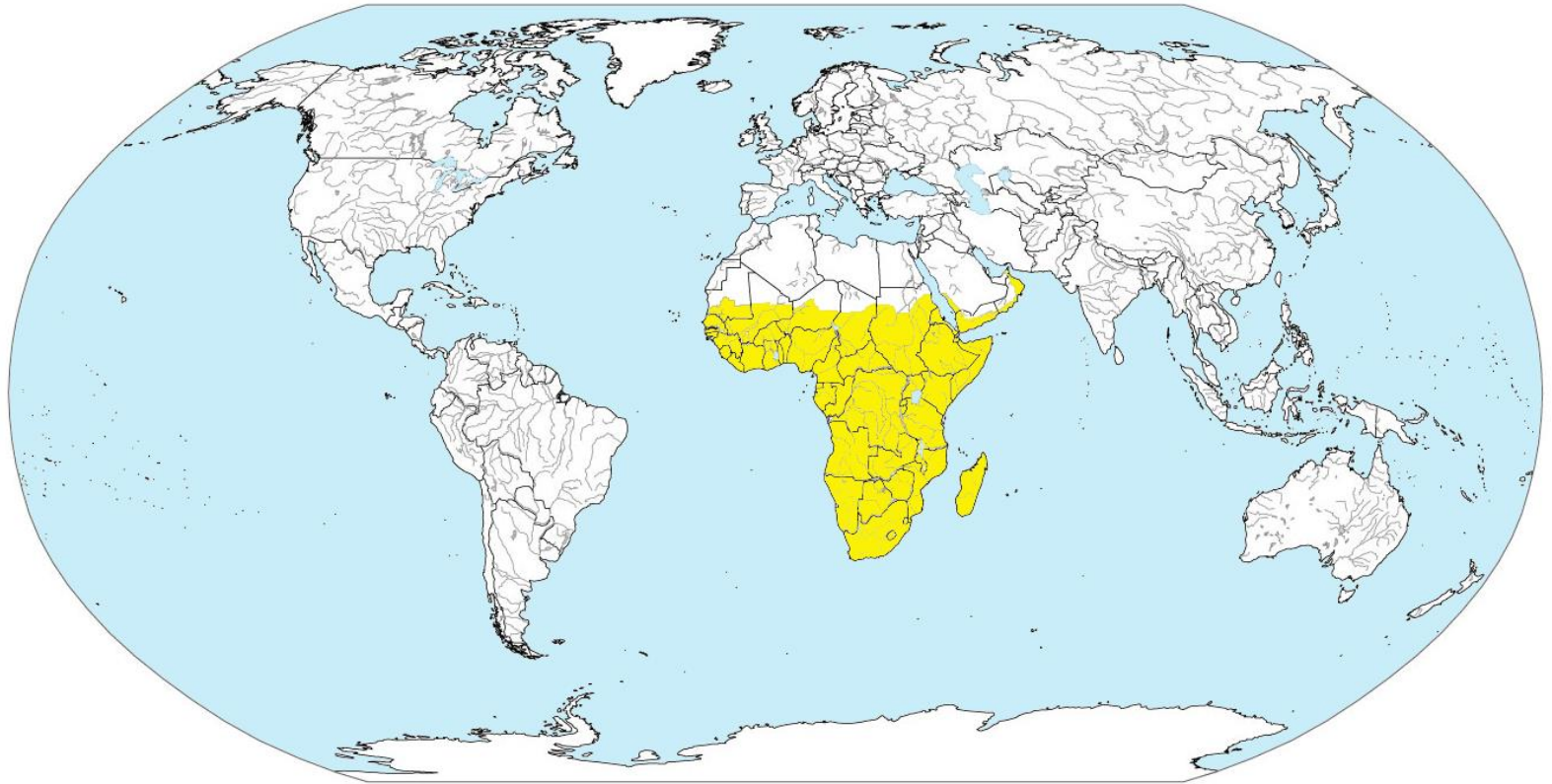


REPTILES

ETHIOPIAN REALM

- MADAGASCAR, AFRICA SOUTH OF SAHARA
- SOUTH ARABIAN PENINSULA
- TROPICAL CLIMATE
- RAIN FORESTS, GRASS LANDS, DESERTS
- EAST AFRICAN GREAT LAKES – VICTORIA, MALAWI, TANGANAYIKA – CENTRES OF BIODIVERSITY

ETHIOPIAN REALM



FISHES

- W.African Coastal River Region
- 322 W African fish sps-
- 247 restricted & 129 restricted to smaller ranges
- Central River Fauna
- 194 fish sps
- 119 endemic
- 33 restricted to small areas

BIRDS

- Ostriches
- Sunbirds
- Secretary bird
- Guinea fowl
- Mouse birds
- Passerines - Rock jumpers, Rock fowls

FAUNAL CHARACTERISTICS

MOUSE BIRDS



SECRETARY BIRD



ENDEMIC BIRDS

SUN BIRD



GUINEA FOWLS



ENDEMIC BIRDS

ROCK JUMPERS



ROCK FOWL



ENDEMIC BIRDS

ENDEMIC ORDERS

- Tubulidentata (Aardvarks)
- Afrosoricida (tenrecs and golden moles)
- Macroscelidea (elephant shrews)

ENDEMIC LARGE MAMMALS

- 2 Sps of Gorilla
- 2 sps of Chimpanzee

Mammals

CHIMPANZEE



GORILLA



MAMMALS

AARDVARK



ELEPHANT SHREW



MAMMALS

GOLDEN MOLE



TENREC

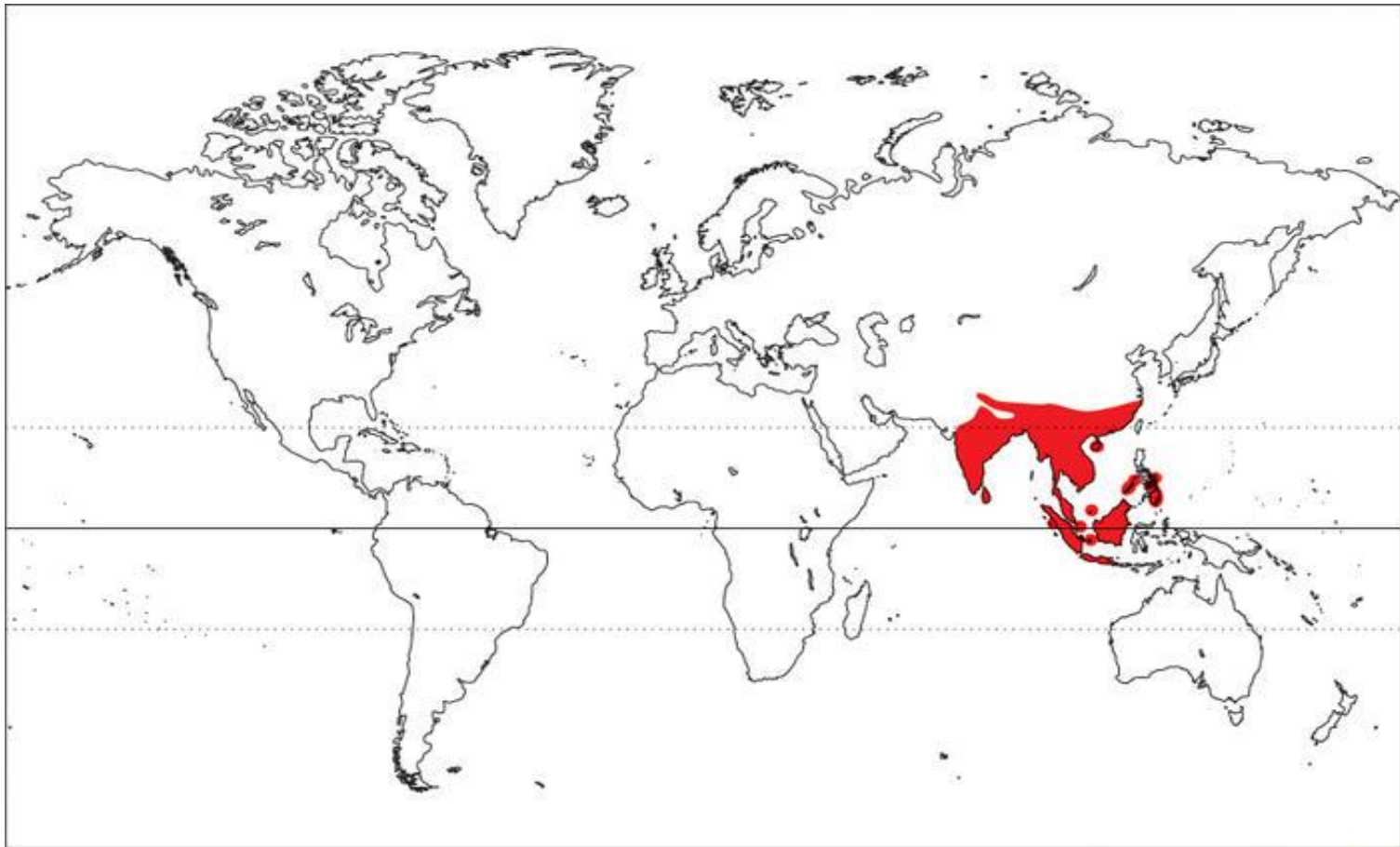


MAMMALS

ORIENTAL REALM

- PAKISTAN, INDIA, SRILANKA, SOUTH EAST ASIA, PHILLIPINES, INDONESIA, SUMATRA, JAVA & BORNEO
- COVERED WITH TROPICAL AND SUB TROPICAL MOIST AND BROAD LEAVED FORESTS

ORIENTAL REALM



FAUNAL CHARACTERS

- ENDEMIC FAMILIES - COLUGOS, TREE SHREWS, KITTI'S HOG-NOSED BATS, TARSIERS, GIBBONS, ETC
- LARGE MAMMALS INCLUDE TIGERS, LEOPARDS, WATER BUFFALOS, ASIAN ELEPHANTS, INDIAN RHINOCEROS, JAVAN RHINOCEROS, MALAYAN TAPIRS, ORANGUTANS, GIBBONS, ETC

BIRDS

- **THREE ENDEMIC BIRD FAMILIES - IRENIDAE, MEGALAIMIDAE, RHABDORNITHIDAE**
- **CHARACTERISTIC BIRDS – PHEASANTS, OLD WORLD BABBLERS, FLOWER PECKERS**

SUB REGIONS

- FOUR SUB REGIONS
 1. INDIAN SUBREGION
 2. CEYLONESE SUBREGION
 3. INDO- CHINA SUBREGION
 4. INDO-MALAYAN SUBREGION

ENDEMIC MAMMALS

COLUGO



TREE SHREW



ENDEMIC MAMMALS

KITTI'S HOG-NOSED BAT



TARSIERS



LARGE MAMMALS

MALAYAN TAPIR



WATER BUFFALO



LARGE MAMMALS

INDIAN RHINOCEROS



JAVAN RHINOCEROS



LARGE MAMMALS

TIGER



LEOPARD



AUSTRALIAN REALM

- AUSTRALIA, NEW GUINEA, TASMANIA & INDONESIAN ISLANDS EAST OF WALLACE'S LINE (CELBES ,TIMOR,ETC) AND ALSO NEW ZEALAND
- MIXTURE OF TROPICAL AND TEMPERATE ZONES
- HOME TO UNIQUE ANIMALS

FAUNA

- ◉ MARSUPIALS – KANGAROOS, POSSUMS & WOMBAT
- ◉ MONOTREME MAMAMLS- ECHIDNA & DUCK BILLED PLATYPUS

SUB REGIONS

1. AUSTRO-MALAYAN SUBREGION- ISLANDS OF MALAY ARCHIPELAGO, NEW GUINEA & SOLOMON ISLANDS
2. AUSTRALIAN SUB REGION- AUSTRALIA & TASMANIA
3. POLYNESIAN SUBREGION – ISLANDS OF POLYNESIA & SANDWICH ISLANDS

MARSUPIALS



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

MONOTREMES

ECHIDNA



DUCK BILLED PLATYPUS



MARSUPIALS

WOMBAT



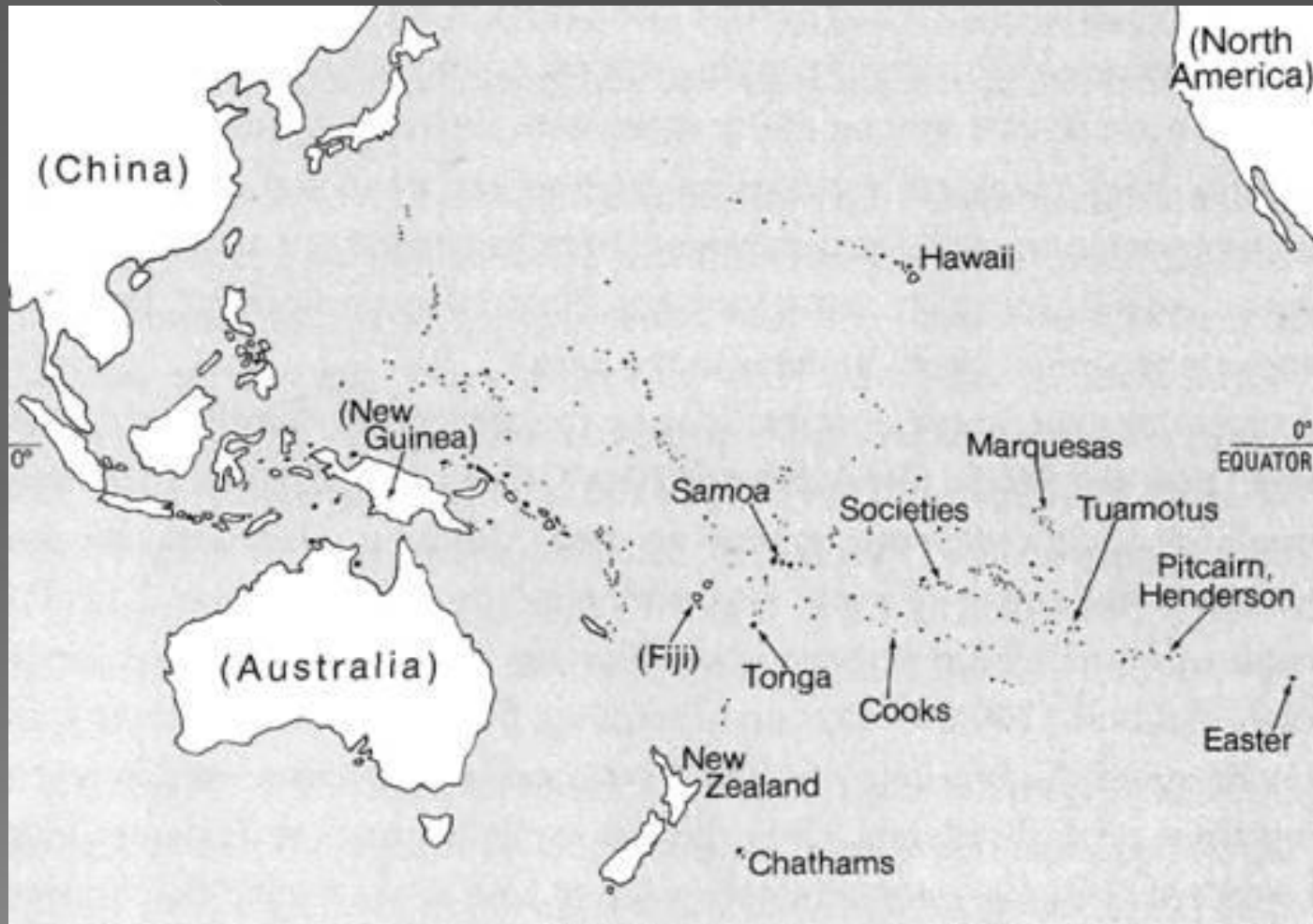
POSSUMS



MALAYAN ARCHIPELAGO



ISLANDS OF POLYNESIA





THANK YOU