

LECTURE 10

KEY TERMS

- **Plesiadapiformes**
 - First primates (near K-T boundary)
 - Small and arboreal
 - ["squirrel-like" most likely became extinct by rodents]
- **Prosimians**
 - First true primates (Eocene)
 - Not monophyletic
 - [Long snout, small brain]
- **Anthropoids**
 - Larger primates
 - Diurnal
 - [Most likely switched from a nocturnal to a diurnal predator]
- **Homo**
 - Homo habilis
 - [Oldest homo]
 - Homo erectus
 - [lost long finger digits]
 - East Africa
 - Intercontinental distribution
 - Large
 - Body proportions humanlike
 - Large brain
 - Humanlike nose
 - Small teeth
 - Homo ergaster
 - [females are larger, less sexually dimorphic, human like, delayed tooth eruption therefore had a longer child stage]
 - Homo heidelbergensis
 - Africa and Europe
 - 500,000 – 300,000 years ago
 - Homo neanderthalensis
 - [larger occipital region, receding forehead, lots of injuries from fighting]
 - Germany
 - Stocky
 - Distinct facial characteristics
 - Large brain
 - Strong
 - Teeth with heavy wear
 - Stone toolmakers
 - Societies
 - Homo sapiens
 - [cave paintings, very competitive]
 - African origin
 - 100,000 – 200,000 years ago

-40,000 years ago

-Coincident with extinction of *H. neanderthalensis* and *erectus*

-Homo floresiensis

-Hobbit

-Small brain

-Stone tools

-Flores (Indonesia)

- **Australopithecus**

[sexually dimorphic]

-Bipedal

-Lucy (*A. afarensis*) [most pre-homo prominent fossil, small but fully grown, growth plates sealed, ape like features, more arboreal]

-Still possessed apelike features

-Lots of *Australopithecus* fossils (see Fig. 24-13)

-*A. garhi* "missing link" between *Australopithecus* and *Homo* [first to eat meat and use tools]

-*A. africanus* arboreal [latest surviving]

-*Australopithecus* may not be the direct ancestor of *Homo*

-*Kenyanthropus* [possible close ancestor]

- **Ardipithecus**

-Ethiopian specimens

-4.4 mya

-Primitive

-Possibly bipedal

[chimp-like characters]

NEED TO KNOW

1. What are the four social systems of primates?

1) Female transfer systems- Females leave the group from which they were born, females not closely related, social group size small (chimps)

2) Male transfer systems- Male dispersal from birth place, females closely related, larger group size (baboons)

3) Monogamous species- Minimal sexual dimorphism (gibbon)

4) Solitary species- Guard territories, resources, and mates (orangutans)

2. What are the three ecological factors that are important in shaping the social systems of primates?

1) Distribution of food resources- Whether to defend resources based on how common they are

2) Group size- More resources=Larger Group

3) Predation- The larger the group, the more defense, but also more predators. Greater number lowers individual's chance of getting picked off.

3. Know the types of social relationships among primates

1) Adult-Juvenile Associations- Young are born helpless and dependent on adults-weaning (people)

2) Female Kinship Bonds- Several males and females- females will bond together and protect their own kin, and males will join.

3) Male-Male Alliances- Common in female transfer systems while females move around

4) Male-Female Friendships- Nonrandom association- hangout together but are not mates (baboons)

4. Know the three main groups of primates

Hominoidea: two groups

1. Hominidae (apes and everyone else)

2. Hylobatidae (gibbons)

-Humans, chimps, gorillas, orangutans, and gibbons

-Asia and Africa

-Critically endangered

-Diverged from Old World Monkeys

~23 mya

brachiate through trees - swing w/ arms - not mobile on ground back legs stubby

-Human & chimp split ~5 mya

orangutans - sex dimorphic

5. Who are the hominoid apes?

Refers to all "non-human" hominoids

6. Know the major players in human evolution (Homo, Australopithecus, Ardipithecus).

Homo sapiens

Homo neanderthalensis - hybridization of Neanderthals & humans

Homo floresiensis

Homo heidelbergensis (ancestor of Neanderthals)

Homo erectus - delayed tooth eruption so longer developmental stage

Homo habilis

Australopithecus

Kenyanthropus

Ardipithecus

7. Which genera came first? Be familiar with each species listed in class (characteristics, importance for human evolution)