

Chapter 13: Human Evolution

1. Introduction:

Human evolution refers to the gradual development of humans from their ancient ancestors over millions of years. It is a part of biological evolution where humans evolved from primates.

2. Theories of Evolution:

1. Lamarck's Theory of Inheritance:

- **Key Concept:** Inheritance of acquired characteristics.
- **Explanation:**
 - Organisms acquire traits based on the use or disuse of organs.
 - Example:
 - **Use of Organs:** The long neck of a giraffe evolved as ancestors stretched to reach leaves.
 - **Disuse of Organs:** Vestigial organs in humans, like wisdom teeth and the appendix, became functionless.

2. Darwin's Theory of Natural Selection:

- **Key Concept:** Survival of the fittest.
 - **Explanation:**
 - Organisms with favorable traits survive and reproduce.
 - Example: **Peppered Moth Adaptation:**
 - Light-colored moths were common before industrialization.
 - After industrialization, dark-colored moths became more common as they were camouflaged against polluted, dark tree barks.
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3. Human Ancestors and Evolution:

Humans evolved from primates over millions of years, undergoing significant physical and behavioral changes.

Ancestor	Characteristics
Australopithecus	First bipedal primates, small brain capacity.
Homo habilis	Used simple tools, slightly larger brain.
Homo erectus	More upright posture, used fire and tools.
Neanderthals	Larger brain than modern humans, adapted to cold.
Cro-Magnon	Early modern humans, skilled hunters, used tools.

Homo sapiens sapiens	Modern humans, advanced brain, complex language.
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4. Evolutionary Trends in Humans:

- **Bipedalism:** Evolved for efficient walking and running.
 - **Cranial Capacity:** Increased over time, leading to advanced cognitive abilities.
 - **Reduction of Canine Teeth:** As diet changed, canines became smaller.
 - **Forehead and Brow Ridges:** Smoother forehead, reduced brow ridges in modern humans.
 - **Development of Chin:** Modern humans have a well-developed chin.
 - **Reduction in Body Hair:** As humans adapted to different climates.
 - **Height and Posture:** Taller stature and upright posture in modern humans.
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