

SEGMENT TWO, LECTURE ONE: INTRODUCTION

This year marks the bicentennial of the birth of Charles Darwin (and Abraham Lincoln!) on 12 Feb. 1809. Darwin and other evolutionary biologists study:

1) Patterns of evolution (observed scientific facts of the natural world).

Similar anatomy of structures with different functions (Fig. 22.17, p. 463).

Vestigial structures—remnants of once-important features.

Homologous molecules (genes etc.)—“universal” genetic code.

Fossil evidence (Figs. 22.15-16, p. 462).

How life is distributed on earth.

2) Processes of evolution (mechanisms that cause evolution).

Natural selection (Discovered by Charles Darwin).

Mutation (Radiation-induced mutations were discovered by H. Joseph Muller).

Gene flow.

Genetic drift.

Ecology is the scientific study of the interactions between organisms and their environments. The evolution of organisms proceeds in an environment of living and nonliving components, providing a context for the processes of evolution.