

History of Science 180
Freshman Honors Seminar-History of Science, Technology and Medicine
Fall 2004

Instructor: Victor Hilts
Topic: The Victorian Evolutionists

In 1859, Charles Darwin published his epoch-making *Origin of Species*, which argued that the diversity of biological species found around the globe could be explained by a mechanism that he called "natural selection." Darwin's book was the most important contribution to a wave of evolutionary thinking in the mid nineteenth century that had far-reaching implications not only for the history of biology but also for many other important issues. In this undergraduate honors seminar, students will read the writings of some of the most important evolutionary thinkers of Darwin's own time, including selections from Charles Darwin, Alfred Russell Wallace, Herbert Spencer, Thomas Henry Huxley, Francis Galton, and Edward B. Tylor. Examination of these writings will focus both upon their place within the history of scientific thought and upon their broader role as shapers of an evolutionary view of Nature and the place of humans within Nature. No background in history of science or general history is presumed.

This seminar will consist primarily of readings and discussion, but there will be one small writing project at the end of the semester that will involve either library or Internet research. The University Bookstore has copies for purchase of Charles Darwin's Autobiography, Charles Darwin's Origin of Species (first edition), and Loren Eiseley's Darwin's Century. Additional reading will be distributed during the semester.

Since seminar discussion is a major element of this class, one-half (50 percent) of the grade will depend upon class participation. The first written assignment (due Sept. 29) will count for 10 percent, the second written assignment (due Oct. 27) for 20 percent, and the final written assignment (due Dec. 15) for 20 percent. There is no final examination in this course.

Week 1 (Sept. 8). Charles Darwin's Place in History. Course Introduction

Week 2 (Sept. 15). Charles Darwin on himself. Reading and discussion of Charles Darwin's Autobiography, Nora Barlow edition, pp. 11-15 and pp. 21-145.

Week 3 (Sept. 22). Before Darwin. Reading and discussion of selections (to be distributed) on natural theology, on the evolutionary theories of Lamarck, and on Thomas Malthus' theory of population. Read Loren Eiseley, Darwin's Century, chaps. 2, 6, and 7, and examine Charles Darwin's "An historical Sketch of the progress of Opinion on the Origin of Species," in your copy of Origin of Species, pp. 53-63.

- Week 4 (Sept. 29). The theory of natural selection. Reading and discussion of the introduction, first four chapters, and final chapter of The Origin of Species by Means of Natural Selection (pp. 65-172 and pp. 435-460). First written assignment. Write out a 1-2 page summary of one of Darwin's four chapters. Each member of the seminar will be assigned one of the five chapters. It is likely that this week's discussion will carry over into the following week.
- Week 5 (Oct. 6). Defending Darwin in the 1860s. Readings and discussion of selections (to be distributed) from Thomas Henry Huxley and Asa Gray. Also read Charles Darwin, The Origin of Species, chap. 6 and Loren Eiseley, Darwin's Century, Chap. 9.
- Week 6 (Oct 13) Charles Darwin on the theory of evolution applied to man. Reading and discussion of selected pages (to be distributed) from Darwin's Descent of Man and Darwin's Emotions in Man and Animals.
- Week 7 (Oct. 20). Charles Lyell, Thomas Henry Huxley, and Alfred Russell Wallace on Man's Place in Nature. Reading and discussion of selected pages (to be distributed) from Thomas Henry Huxley Man's Place in Nature and Charles Lyell, The Antiquity of Man, and also of two articles by Alfred Russell Wallace that argue that evolution cannot explain the development of human nature. Also read Loren Eiseley, Darwin's Century, chap. 11.
- Week 8 (Oct. 27) Debates about instinct and Intelligence in man and animals. Reading and discussion of Darwin's chapter seven on instinct in The Origin of Species, and of pages (to be distributed) from C. Lloyd Morgan on instinct. Second written assignment. In 3-5 pages, describe the major issues that arose when Darwin and others attempted to explain how evolution could explain human nature. In your account, try to explain why Darwin and Wallace divided on this issue.
- Week 9 (Nov. 3) Evolution and "social Darwinism." Reading and discussion of selections (to be distributed) from Herbert Spencer. Also reading of chapter (to be distributed) from Richard Hofstadter, Social Darwinism in American Thought and an essay entitled "The Gospel of Wealth" by Andrew Carnegie.
- Week 10 (Nov. 10) Evolution, Anthropology, and the development of Civilization. Reading and discussion of selections (to be distributed) from the writings of the British anthropologist Edward B. Tylor and from the American anthropologist Franz Boas.
- Week 11 (Nov. 17). No class meeting the day before Thanksgiving. Individual consultations in my office.
- Week 12 (Nov. 24) Nature, Nurture, and Heredity. Reading and discussion of Francis Galton's first paper on hereditary genius and of the rejoinder by the American sociologist, Lester Ward. Both papers to be distributed.

Week 13 (Dec. 1) Evolution and heredity in the nineteenth century. Reading and discussion of arguments advanced by Darwin and Galton in their controversy over pangensis and by Herbert Spencer and August Weismann in their controversy on the inheritance of acquired characteristics. Readings to be distributed. Also read Loren Eiseley, Darwin's Century, chap. 8.

Week 14 (Dec. 8) Evolution and Eugenics. Reading and discussion of articles by Francis Galton and his disciple Karl Pearson on evolution, eugenics, and the future of mankind. Selections to be distributed.

Week 15 (Dec. 15) Should evolution be taught in the schools? Reading and discussion of selections (to be distributed) from the transcripts of the Scopes Trial. Third written assignment. Find information in the library or on the internet (or both) about one or more controversies that have arisen since the Scopes trial over whether Darwin should be taught in the schools. In a paper that is no longer than 5-6 pages, describe how you think that Charles Darwin might have answered modern critics of evolutionary theory if he were to have lived into our own times.