Department of History, UNCG Fall 2004

History 311-01. Darwin and the Theory of Evolution

(Tuesday & Thursday 11:00-12:15, McIver 226)

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Office hours: Tu & Th 3:30-4:30, Wed 11:00-12:00 & 1:00-2:00, or by appointment. I'm available many other times, and I encourage you to come see me if you're having trouble, want to clarify things, or just want to talk.

The centerpiece of this course is Charles Darwin's epoch-making book, *On the Origin of Species* (1859), which succeeded in making the idea of organic evolution generally acceptable first to the scientific community and then, gradually, to a wider public. The first questions to be addressed will be, What is Darwin's theory? What does it try to explain? What is his evidence? With Darwin's theory as our benchmark, we will then drop back historically to pick up the various strains of thought and evidence that led people to ask questions about the origin and variability of species and to propose the explanations they did. Special attention will be paid to a few of Darwin's contemporaries who advanced ideas similar in some regards to his, such as Alfred Russel Wallace, generally regarded as the "codiscoverer" of the theory of evolution by natural selection. Our historical survey will end with a look at Darwin's explanation of human evolution and Wallace's critique thereof.

Aside from conveying a certain amount of information about one of the most important developments in the history of Western science, the purpose of this course is to give the student a sense of the historical character of the growth of scientific ideas, to appreciate how certain questions arise and why certain answers are proposed and found acceptable (or not) by the community of scientists. Most of the readings will be from primary sources--that is, the original works of the scientists themselves. Much of the work in the course will consist of a close reading of these texts in an attempt to figure out what they were saying, what their central problems were, and what kind of evidence they had. A means to that goal will be extensive writing, much of it revised.

The required books for the course are Charles Darwin, *On the Origin of Species*. A Facsimile of the First Edition [of 1859] (Cambridge & London: Harvard University Press, 1964); John C. Greene, *The Death of Adam: Evolution and Its Impact on Western Thought* (Ames, Iowa: Iowa State University Press, 1959); and Jonathan Miller & Borin Van Loon, *Darwin for Beginners* (N.Y.: Pantheon Books, 1982). Additional required and recommended reading is on reserve in Jackson Library, most of which is also accessible on-line as "E-Reserves" (designated "**R**" in the syllabus). See a separate sheet for information about this service. You can (and should) print them out, either in the Library (at its expense) or on you own printer. All readings are also available in hard copy at the Reserve Desk in Jackson Library. In other words, there is never a good excuse for not having gotten hold of the readings. *You should do the assigned readings before the corresponding class, and bring the readings with you to class.*

Written work for the course consists of two revised essays, three "formal" writing exercises, and a dozen or so short "informal" in-class or at-home writing exercises based on the readings. I will look at and (usually) comment on the informal exercises, marking them in a check-plus, check, check-minus fashion. Each of the essays will count 32%, each of the formal writing exercises 12% of

your raw final grade. Adjustment will be made on the basis of class participation (including the in-class and at-home writing exercises) and attendance (*more than three absences are considered excessive, and may lead to your being dropped from the roll*) up to a maximum of a whole letter grade. *Students who miss the first two class periods will be dropped from the roll.*

The in-class and take-home writing exercises will typically ask you to respond to the pertinent readings or issues. In reading *primary sources*, you should regularly ask the following questions: (1) What particular problem is the author addressing? (2) What are the author's (usually tacit) assumptions? (3) How good is the evidence adduced? A good way of generating insights is to ask what I informally call the "zen question": Are you surprised by *not* finding something you expected? In reading *secondary sources*, ask yourself what the author's intentions and possible biases are. How well does the evidence support the author's points?

The formal writing exercises consist of preassigned questions to which you will submit double-spaced *typed* answers of about two pages in length. On the day you submit them we will discuss the content of the questions in class. *Late submissions will not be accepted.* I will read them over and return them with comments on content and style. *These questions should* ***not*** *also be used as essay topics*.

Essays should be five double-spaced *typed* pages. They will be marked for content and style and returned to you for revision. The final grade on each essay will be that of the revised version. The syllabus gives the dates for submission. *Unexcused late submissions are subject to a penalty of up to a full letter grade*. ***It is essential that you hand in the first version with your revision!*** Further details will be gone over in class. I will hand out a set of essay "Guidelines" that I expect you to read and follow. Note that I have handed out a separate list of study questions to guide your reading and thinking; these questions can also provide suggestions for possible essay topics.

I expect students to have read and understood the section of the *Policies for Students* handbook relating to the UNCG Academic Integrity Policy. Submission of written work implies your acceptance of its provisions.

Student Learning Goals

By the end of the semester, students will have a knowledge and understanding of

·Darwin's theory of evolution, including its scope and evidentiary base

·The historical sources of questions leading up to evolutionary answers, including the most prominent pre-Darwinian theories

·Theological issues relating to the understanding of the natural world

·Similarities and differences between Darwin's way of thinking and that of other relevant naturalists

·Darwin's handling of the problem of human evolution and Wallace's response thereto

Research Goals

By the end of the semester, students will be able to

· Distinguish primary from secondary sources

· Identify research problems

· Interpret primary sources

·Develop a logical and persuasive argument based on primary sources

·Communicate that argument in good English prose

· Know how to use a generally recognized system of citations and bibliographic entries

Schedule of Topics and Readings

Introduction and Discussion (Aug. 17): *What do you know or believe about the theory of evolution?*

Darwin's Theory of Evolution I (Aug. 19): Darwin, *On the Origin of Species*, 1-15, (skim 15-29), 29-36, (skim 36-43), 44-52, 60-73, 80-90, 109-116, 126-130.

Darwin's Theory of Evolution II (Aug. 24): *Origin*, 171-206.

Darwin's Theory of Evolution III (Aug. 26): *Origin*, 341-354, 388-410, (skim 411-456), 456-458.

Darwin's Theory of Evolution IV (Aug. 31): *Origin*, 459-490; "Extract from an Unpublished Work on Species, by C. Darwin, Esq. Consisting of a Portion of a Chapter Entitled, 'On the Variation of Organic Beings in a State of Nature; on the Natural Means of Selection; on the Comparison of Domestic Races and True Species'" (**R**), pp. 46-53 of Darwin and Wallace, "On the Tendency of Species to Form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection" (**R**).

Discussion (Sept. 2): Submit answer to first formal writing exercise: *Summarize Darwin's theory of evolution. What general classes of facts does it explain? What kind of evidence does he have?*

Natural Theology and Design (Sept. 7): Greene, *Death of Adam*, 1-13; recommended: Gillispie, *Genesis and Geology* (**R**), 3-20, 29-40; *handout*.

Cosmology and the Laws of Nature (Sept. 9): Greene, 14-42; *handout*.

Linnaeus (Sept. 14): Greene, 128-137; *handout*.

Buffon I (Sept. 16): Greene, 54-59, 138-155, 156-157; Eiseley, *Darwin's Century* (**R**), 39-45; recommended: Wilkie, "Buffon, Lamarck, and Darwin" (**R**), 262-287.

Buffon II (Sept. 21): Buffon, *Natural History, General and Particular*: "Of Animals Common to Both Contintents" (**R**), 132-139, 149-151; "Of the Degeneration of Animals" (**R**, Pts. A & B), 392-452. [Note that the old-style "s," which looks at first glance like an "f," lacks the full "crossbar" of the latter.] Discussion of essays; "Guidelines" handed out.

Discussion (Sept. 23): Submit answer to the second formal writing exercise: *To what extent was Buffon an "evolutionist"? What was Buffon's significance to the history of evolutionary*

thought?

Erasmus Darwin (Sept. 28): Greene, 166-169; E. Darwin, *Zoonomia* (**R**, Pts. A & B), vol. 1, 1-3, 478-510, (skim 510-533); *handout.*

Lamarck I (Sept. 30): Greene, 155-166; recommended: Wilkie, "Buffon, Lamarck, and Darwin" (**R**), 288-302; FIRST ESSAY DUE

Lamarck II (Oct. 5): Lamarck, *Zoological Philosophy* (**R**, Pt. A), 1-13, 56-59, 66-72, 82-83, 102-105; *handout*.

Lamarck III (Oct. 7): *Zoological Philosophy* (**R**, Pt. B), 106-133, 173-180, 236-240, 243-245; FIRST ESSAY RETURNED.

October 12: Fall Break

Extinction: Assumptions and Evidence (Oct. 14): Greene, 43-48, 88-127; strongly recommended: Rudwick, *Meaning of Fossils* (on reserve), 101-163; *handouts*, including Lyell reading;FIRST REVISED ESSAY DUE

Lyell, Uniformitarian Geology, and Lamarck (Oct. 19): Greene, 54-59, (skim 59-70), 70-85; Lyell, *Principles of Geology* (**R**, Pt. A), vol. 1, 75-77; vol. 2, 1-17; recommended: Eiseley, *Darwin's Century* (**R**), 97-108; *handout*.

Lyell and the Species Question I (Oct. 21): Greene, 249-256; Lyell, *Principles of Geology* (**R**, Pt. B), vol. 2, 18-53, 62-65; recommended: Eiseley, *Darwin's Century* (**R**), 108-115.

Lyell and the Species Question II (Oct. 26): Lyell, *Principles of Geology* (**R**, Pt. C), vol. 2, 66-67, 70-71, 123-126, 141-143, 154-161, 172-184. Submit answer to third formal writing exercise: *What was Lyell's significance to the history of evolutionary thought (in general) and to Darwin (in particular)? **N.B.*:** **I expect to see evidence that you've read the primary sources!**

William Wells (Oct. 28): "An Account of a Female of the White Race of Mankind, Part of Whose Skin Resembles That of a Negro" (**R**); Eiseley, *Darwin's Century* (**R**), 119-125.

Edward Blyth (Nov. 2): "An Attempt to Classify the 'Varieties' of Animals" (**R**); recommended: Eiseley, *Darwin and the Mysterious Mr. X* (on reserve), 45-80.

Robert Chambers I (Nov. 4): *Vestiges of the Natural History of Creation* (**R**, Pts. A & B), 145-158, 164-169, 175-205, 218-227, 230-235, 387-390; Eiseley, *Darwin's Century* (**R**), 132-140; *handout*

Robert Chambers II (Nov. 9): *Explanations* (**R**), 110-121, 142-143, 148-153, 158-171, 175-179.

Alfred Russel Wallace (Nov. 11): "On the Law Which Has Regulated the Introduction of New Species" (**R**); "On the Tendency of Varieties to Depart Indefinitely from the Original Type" (**R**), pp. 53-62 of Darwin and Wallace, "On the Tendency of Species to Form Varieties; and on the Perpetuation of Varieties and Species by Natural Means of Selection" (**R**).

The Origin of Species Revisited (Nov. 16): Miller, *Darwin for Beginners*, 3-125; Darwin's "Autobiography" (**R**; from *The Life and Letters of Charles Darwin*, vol. 1), 65-73; Darwin,

"An Historical Sketch of the Progress of Opinion on the Origin of Species" (**R**); recommended: Greene, 261-294; SECOND ESSAY DUE.

Wallace's Apostasy (Nov. 18): Wallace, "The Limits of Natural Selection as Applied to Man" (**R**, from *Contributions to the Theory of Natural Selection* [1870]).

The Descent of Man I (Nov. 23): Darwin, *The Descent of Man* (**R**, Pts. A & B), vol. 1, 9-35, 70-74, 104-106, 185-191, 213; Greene, 308-327; recommended: review Greene, 175-199; *handout*; SECOND ESSAY RETURNED.

November 25: Thanksgiving

The Descent of Man II (Nov. 30): *Descent of Man* (**R**, Pts. A & B), vol. 1, 107-119, 135-138, 154-157; vol. 2, 385-405.

Final Discussion (Dec. 2): *What were the relative contributions of facts and ideas to the historical development of evolutionary theories? What was it that needed to be explained? What do you see as the major strengths and weaknesses of Darwin's theory?*; course evaluation administered; SECOND REVISED ESSAY DUE.

[Monday, Dec. 6: last day of classes]

[Tuesday, Dec. 7: Reading Day]