

# **Evolution and society, 1700–2000. Biology, politics and religion**

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HILARY TERM 2012

Tuesdays 2–4pm

Colin Matthews Room, Faculty of History,  
Old Boys' High School, George Street

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## **Week 1**

### **The philosophy and politics of evolution in eighteenth-century Europe**

For several decades, historians have been looking for precursors of Darwin in the century before 1859. This selective and often anachronistic reading of eighteenth-century theories on the history of life and of mankind has obscured important features of a debate of European dimensions. After the French Revolution, accusations of atheism and political subversion effectively curbed a rich intellectual tradition favourable to a broad evolutionary interpretation of biological and cultural phenomena.

Pietro Corsi, "Before Darwin: Transformist Concepts in European Natural History", in *Journal of the History of Biology*, 38, 2005, pp. 67-83

Robert J. Richards, *The meaning of evolution: the morphological construction and ideological reconstruction of Darwin's theory*, Chicago, University of Chicago Press, 1992.

Benoit de Maillet, *Telliamed or Conversations between an Indian Philosopher and a French Missionary on the Diminution of the Sea*, translated and edited by Albert V. Carozzi, Urbana, University of Illinois Press, 1968

## **Week 2**

### **Jean-Baptiste Lamarck (1744-1829): the physics of evolution**

Far from being the founder of modern evolutionary theories, Lamarck summed up and reinterpreted contemporary debates on life in the terms of a rigidly deterministic physics, capable of explaining – in his eyes at least – all biological phenomena, from

the formation of life forms through spontaneous generation, to the development of human intellectual faculties and culture. Lamarck's work and teaching exercised a deep influence in early nineteenth-century Europe, though his original ideas were often reinterpreted to fit vitalist and spiritualist concerns.

Richard W. Burckhardt, *The Spirit of System: Lamarck and Evolutionary Biology*,  
Cambridge, MA, Harvard University Press, 1995

Pietro Corsi, *The Age of Lamarck. Evolutionary Theories in France, 1790-1830*, University of California Press, Berkeley and Los Angeles 1988

Jean-Baptiste Lamarck, *Zoological philosophy: an exposition with regard to the natural history of animals*, translated by Hugh Elliot, with introductory essays by David L. Hull and Richard W. Burckhardt, Chicago, University of Chicago Press, 1984.

### Week 3

#### Evolutionary theories in Europe before Charles Darwin

As would happen a few decades later to Charles Darwin, Lamarck would not have been pleased to see the plurality of theories attributed to him: European Lamarckism, (as European Darwinism) had something to do with the original doctrines put forward by its author, at the price of deeply betraying his intellectual and scientific priorities. Many naturalists and thinkers active on the Continent thought that the key issue was the development of an explanation of the history of life on earth in terms of natural laws. The question of man was also central to societies actively engaged in colonial conquests. Thus, "Lamarckian" came to signify a broad allegiance to often rather vague evolutionary tenets.

Pietro Corsi, 'The revolutions of evolution: Geoffroy and Lamarck, 1825-1840', *Bulletin du Musée d'Anthropologie préhistorique de Monaco*, May 2012, 36 pp., online, History Faculty webpage

Pietro Corsi, "The Importance of French Transformist Ideas for the Second Volume of Lyell's *Principles of Geology*", in *The British Journal for the History of Science*, vol. 9 (1978), pp.222-244 (on line)

Bont, R. de, *A Serpent without Teeth. The Conservative Transformism of Jean-Baptiste d'Omalius d'Halloy (1783-1875)*, «Centaurus», XLIX, n. 2 (2007), pp.114–137

Gliboff, S., *Evolution, revolution, and reform in Vienna: Franz Unger's ideas on descent and their post-1848 reception*, «Journal of the history of biology», XXXI, 2 (1998), pp. 179-209

Gliboff, S., *H. G. Bronn and the History of Nature*, «Journal of the history of biology», XL, 2 (2007), pp. 259-294

### Week 4

## Species without Darwin: Evolution and society in England, 1830-1859

Lamarck's ideas were well known in England since the beginning of the Nineteenth-Century, and young Charles Darwin knew about them. Yet, he thought they were wrong. Charles Lyell's critique of Lamarck, published in the second volume of his *Principles of Geology* (1832) convinced many physicians, racial anthropologists, radical naturalists, economists, writers and theologians that Lamarck might have been wrong, but that the development of an evolutionary theory was a key "philosophical necessity" of the age. When Darwin published *On the Origin of Species* in the fall of 1859, public opinion was more than ready to discuss his work.

Charles Lyell, *Principles of Geology*, vol. 2, 1832,, first 11 chapters, in <http://www.lamarck.cnrs.fr/?lang=en>

Pietro Corsi, *Science and Religion. Baden Powell and the Anglican Debate, 1800-1860*, Cambridge University Press, Cambridge 1988, Part IV

J. A. Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation*, Chicago, The University of Chicago Press, 2003, chs. 3, 5, 7, 13

D. Ospovat, "Perfect adaptation and [teleological](#) explanation: approaches to the problem of the history of life in the mid-nineteenth century, *Journal of the History of Biology*, 2 (1978), pp. 33-56.

### Week 5

#### The formation and development of Darwin's theory of natural selection

Darwin's theory of natural selection is not the sum of debates on post-Lamarckian evolutionary theories current in the period 1830-1850. He certainly commented upon them, and shared several assumptions, such as the doctrine of the inheritance of acquired characteristics. Yet, Darwin's path to evolution has to be examined in its own terms, by paying attention to his observations, collections and experiments. His key theory of natural selection changed over time, as did his view of speciation and inheritance. Written in plain, accessible style, *On the Origin of Species* is in fact a complex book, at times seemingly contradictory, and it is not surprising that contemporaries felt authorised to read it according to their own views.

Dov Ospovat, *The development of Darwin's theory: natural history, natural theology, and natural selection, 1838-1859*, Cambridge, Cambridge University Press, 1981

D. Khon, "Theories to work by: rejected theories, reproduction, and Darwin's path to natural selection", in *Studies in the History of Biology*, 4 (1980), pp. 67-170.

### Week 6

## Reading Darwin after 1859: Europe and the United States

More than a question of “reception”, the diffusion of Darwin’s theories in Europe and the United States was a question of interpretation, at times amounting to distortion. The presence of local evolutionary traditions – in France and Italy, Russia and Germany – and indeed the United Kingdom – deeply influenced the way in which naturalists, philosophers or theologians read Darwin’s work. The question of man’s place in nature, the political application of the concept of the struggle for existence, the attempts to “domesticate” Darwin’s evolutionary theories to fit religious traditions or political philosophies pervaded reviews and books commenting, extolling or attacking Darwin’s work. The case of the German naturalist, philosopher and evolutionary thinker Ernst Haeckel well illustrates the complex intellectual, social and political articulations of evolutionary theories in the second half of the Nineteenth-century.

James Moore, *The Post-Darwinian Controversies: A Study of the Protestant Struggle to Come to Terms with Darwin in Great Britain and America, 1870-1900*, Chicago, Chicago University Press, 1981

Mario Di Gregorio, *From here to eternity: Ernst Haeckel and scientific faith*, Göttingen, Vandenhoeck and Ruprecht, 2005

Daniel Gasman, *Haeckel’s monism and the birth of fascist ideology*, New York P. Lang, 1998

## Week 7

### From eclipse to triumph: the fall and rise of Darwin’s theory, 1880-1950

Contemporary naturalists had many difficulties with Darwin’s key concepts. Some felt his reliance on natural selection excessive: others reproached him of the contrary fault. His theory of inheritance, “pangenesis” was harshly judged; his non-teleological view of the history of life (in spite of some hesitation) displeased many, as did his concept of struggle for existence, at time substituted by the opposite concept of “cooperation for life”. The growth of Mendelian genetics and laboratory life sciences condemned Darwin’s work to a sort of marginality. Yet, field naturalists, geneticists and palaeontologists active in the 1930s and 1940s elaborated a theory of evolution that vindicated Darwin’s theoretical achievement – not without the risk, at times, of anachronistically modernizing his work.

Peter J. Bowler, *The eclipse of Darwinism: anti-Darwinian evolution theories in the decades around 1900*, Baltimore, Johns Hopkins University Press, 1983

Ernst Mayr and William B. Provine, *The evolutionary synthesis: perspectives on the unification of biology*, Cambridge, Mass., Harvard University Press paperback ed., 1998.

Daniel P. Todes, *Darwin without Malthus: the struggle for existence in Russian evolutionary thought*, New York, Oxford University Press, 1989

Richard Weikart, *From Darwin to Hitler, Evolutionary Ethics, Eugenics and Racism in Germany*, New York, Palgrave MacMillan, 2004

## Week 8

### Evolutionary debates today: science, politics and religions

The theory of evolution is today a family of sophisticated theoretical assumptions and experimental protocols. Practitioners of different disciplines – from genetics to palaeontology, from systematics to anthropology, from psychology to medicine – share several common beliefs but often disagree on many substantial points. The philosophical, theological and political implications of evolution in general and of some brands of it in particular, are discussed with increasing passion throughout contemporary societies. Creationists and Intelligent Design commentators are seeking to put back the clock one hundred and fifty years, and our final session will probably look very much like the first ones, dealing with the theology and the politics of evolution.

G. Edelman, *Neural Darwinism. The Theory of Neuronal Group Selection*, New York, Basic Books 1987

S.J. Gould, “Darwinian Fundamentalism”, *The New York Review of Books*, June 12, 1997

R. Numbers, *The Creationists: From Scientific Creationism to Intelligent Design*, Cambridge, MA: Harvard University Press, 2006

### Bibliography

Benoit de Maillet, *Telliamed or Conversations between an Indian Philosopher and a French Missionary on the Diminution of the Sea*, translated and edited by Albert V. Carozzi, Urbana, University of Illinois Press, 1968

Peter J. Bowler, *The eclipse of Darwinism: anti-Darwinian evolution theories in the decades around 1900*, Baltimore, Johns Hopkins University Press, 1983

Janet Browne, *Charles Darwin. A biography*, 2 vols., Princeton, Princeton University Press, 1996 and 2002

Richard W. Burckhardt, *The Spirit of System: Lamarck and Evolutionary Biology*, Cambridge, MA, Harvard University Press, 1995

Pietro Corsi, “The Importance of French Transformist Ideas for the Second Volume of Lyell’s *Principles of Geology*”, in *The British Journal for the History of Science*, vol. 9 (1978), pp.222-244

Pietro Corsi, *The Age of Lamarck. Evolutionary Theories in France, 1790-1830*, University of California Press, Berkeley and Los Angeles 1988

Pietro Corsi, *Science and Religion. Baden Powell and the Anglican Debate, 1800-1860*, Cambridge University Press, Cambridge 1988

Pietro Corsi, “Before Darwin: Transformist Concepts in European Natural History”, in *Journal of the History of Biology*, 38, 2005, pp. 67-83

Pietro Corsi, 'The Revolutions of Evolution: Geoffroy and Lamarck, 1825-1840',  
*Bulletin du Musée d'Anthropologie préhistorique de Monaco*, May 2012, 36 pp.

<http://darwin-online.org.uk/> , edited by J. van Whye: newly opened website  
 consecrated to Charles Darwin. Darwin, *On the Origin of Species*, London,  
 J. Murray 1859 (available on the Darwin website, together with all of Darwin's  
 major and minor works)

Bont, R. de, *A Serpent without Teeth. The Conservative Transformism of Jean-Baptiste d'Omalius d'Halloy (1783-1875)*, «Centaurus», XLIX, n. 2 (2007),  
 pp.114–137

Adrian Desmond, *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London*, Chicago, Chicago University Press, 1898

Mario Di Gregorio, *From here to eternity: Ernst Haeckel and scientific faith*,  
 Göttingen, Vandenhoeck and Ruprecht, 2005

Gasman, Daniel, *Haeckel's monism and the birth of fascist ideology*, New York ,  
 P. Lang, 1998

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Gliboff, S., *H. G. Bronn and the History of Nature*, «Journal of the history of biology», XL, 2 (2007), pp. 259-294

Joy D. Harvey, *Almost a man of genius: Clémence Royer, feminism, and nineteenth-century science*, New Brunswick, Rutgers University Press, 1997

J. Hodge and G. Radick, *The Cambridge Companion to Darwin*, Cambridge,  
 Cambridge University Press, 2003

David Kohn, *The Darwinian heritage*, Princeton, Princeton University Press, 1985

[www.lamarck.net](http://www.lamarck.net), ed. by Pietro Corsi.

Jean-Baptiste Lamarck, *Zoological philosophy: an exposition with regard to the natural history of animals*, translated by Hugh Elliot, with introductory essays by David L. Hull and Richard W. Burkhardt, Chicago, University of Chicago Press, 1984.

Sven Lindqvist, *Exterminate all the Brutes*, London, Granta Books, 2002.

Ernst Mayr, *The growth of biological thought: diversity, evolution, and inheritance*, Cambridge, Mass., Belknap Press, 1982.

- Ernst Mayr and William B. Provine, *The evolutionary synthesis: perspectives on the unification of biology*, Cambridge, Mass., Harvard University Press paperback ed., 1998.
- James R. Moore and Adrian Desmond, eds., *C. Darwin. The Descent of Man*, London, Penguin Classics, 2004
- Adrian Desmond and James R. Moore, *Darwin's Sacred Cause: How a Hatred of Slavery Shaped Darwin's Views on Human Evolution*, Boston, MA, Houghton Mifflin Harcourt, 2009
- Dov Ospovat, *The development of Darwin's theory: natural history, natural theology, and natural selection, 1838-1859*, Cambridge, Cambridge University Press, 1981
- Robert J. Richards, *The romantic conception of life: science and philosophy in the age of Goethe*, Chicago, University of Chicago Press, 2002.
- Robert J. Richards, *The meaning of evolution: the morphological construction and ideological reconstruction of Darwin's theory*, Chicago, University of Chicago Press, 1992.
- J. A. Secord, *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation*, Chicago, The University of Chicago Press, 2003
- Daniel P. Todes, *Darwin without Malthus: the struggle for existence in Russian evolutionary thought*, New York, Oxford University Press, 1989
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