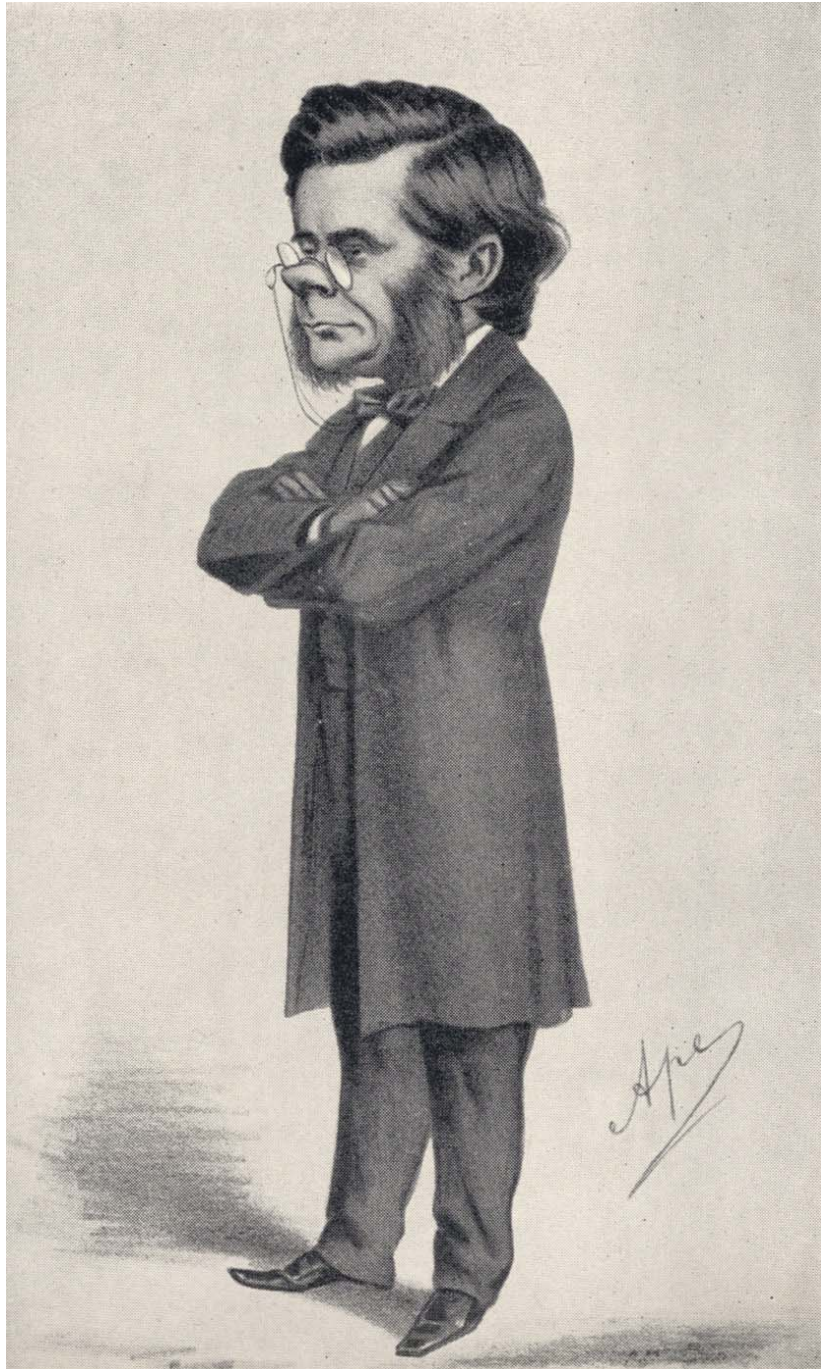


UNIVERSITY OF OXFORD
Faculty of History



Hilary Term 2011

**Science and Learned Culture
in Victorian Britain**

Science and learned culture in Victorian Britain

Lecture programme for Hilary Term 2011

Wednesdays, 9–10.30 a.m.

- Week 2* *Wednesday 26 January*
**Philosophies of science and the foundation
of scientific authority**
- Week 3* *Wednesday 2 February*
**Natural theology: the rise and fall of
a political compromise**
- Week 4* *Wednesday 9 February*
Darwin and natural selection
- Week 5* *Wednesday 16 February*
Science, criticism, and the crisis of faith
- Week 6* *Wednesday 23 February*
**The roots of human history: archaeology,
anthropology, and the evolutionary model**
- Week 7* *Wednesday 2 March*
Scholarship and the liberal ideal in education

*These six one-and-a-half-hour lectures will take place in Weeks 2–7
in the Faculty of History (Old Boys' High School), George Street.*

Faculty of History
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Pietro Corsi

This booklet can be found on the History of Science, Medicine, and
Technology website www.history.ox.ac.uk/hsmt
linked from the *Courses and reading lists* section

Science and learned culture in Victorian Britain

There are few periods in which science has been as prominent in public debate as it was in the nineteenth century. At the beginning of the century, the scientific spirit of the Enlightenment was seen as responsible for the tragedy of the French Revolution and the Napoleonic wars. Measures had to be taken in order to curb the political, social and religious ill-effects of the materialism fostered by the scientific movement. At the intellectual level, philosophers and scientists debated on the foundations of the scientific method. To some, induction and rigorous mathematical procedures were capable of achieving what was called ‘necessary truth’, that is, certain and reliable conclusions. Others objected that knowledge about natural objects could never attain the levels of certainty that mathematical reasoning was capable of. Scientific knowledge was at best ‘contingent’, capable of making sense of successions of phenomena at the local level, but unable to achieve universally valuable truths. At a general cultural level, natural theology was found to represent the appropriate antidote to atheism, since in any case the order of nature that scientific progress was unveiling bespoke a providential design. Yet, natural theology admitted of so many interpretations that the fortune of the genre was rapidly declining throughout the 1830s and the 1840s. Moreover, scientific progress could not always be construed as to support Natural Theology, let alone revealed religion. The controversy surrounding pre-Darwinian and Darwinian theories of evolution by natural selection is a particularly well known instance of a scientific confrontation that captivated the Victorian reading public and aroused deep concern in religious circles. Yet, already by the 1850s, naturalists and scientists in general claimed that their work had little to do with theology, and some expressed growing dissatisfaction with theological supervision of their research. Within the universities, the reforms introduced in the 1850s and the 1870s considerably weakened the hold the Anglican Church traditionally had on higher education. Philosophers, scientists and a few theologians campaigned for updating the university curriculum to include modern scientific and humanistic disciplines.

The purpose of these lectures is to set Victorian science in the context of broader movements in the intellectual, social, and economic history of the period. A central episode, inevitably, is the debate that followed the publication of Darwin’s *Origin of Species* in 1859, epitomized in the famous albeit largely mythical confrontation of 1860 between T. H. Huxley and Samuel Wilberforce, the Bishop of Oxford. And there is recurring reference to attempts to modernize both thought and public policy. The emphasis throughout is on those aspects of Victorian science that impinged most forcefully on the general intellectual affairs of the day. The increasingly abstruse ‘professional’ disciplines of mathematics and the physical sciences are therefore given less prominence than developments in geology and the life sciences, social theory and educational reform, all of which fired the imagination of the reading public. Emphasis is fi-

nally placed on the social and political dimension of the main scientific and cultural debates that characterized Victorian England. What emerges is a dynamic dialogue between society, general culture and at least the more accessible areas of science of which important traces have survived into our own day.

Lectures and reading

The summary of each lecture is followed by suggestions for reading. It cannot be stressed too strongly that the suggestions are no more than that. For essay writing, they are insufficient, and for general background reading, too numerous. They are certainly no substitute for the guidance of your tutor.

An obvious problem with these lectures is that there is no satisfactory general text covering all the material, even superficially. Nevertheless, certain works, many of them surprisingly elderly, do provide partial starting points. For a perceptive general introduction to Victorian cultural history, Walter E. Houghton's *The Victorian Frame of Mind 1830–1870* (New Haven and London, 1957) is still dependable, and T. W. Heyck's *The Transformation of Intellectual Life in Victorian England* (London, 1982), especially chapters 3–5, provides a brief overview. A. N. Wilson's *God's Funeral* (London, 1999) too is a good introductory read. A recent, masterly introduction to early Victorian England is Boyd Hilton, *A Mad, Bad, and Dangerous People? England 1783–1846* (Oxford, 2006). For more detailed studies, it is necessary to refer to journals, specialized monographs, or collections of essays, among which Bernard Lightman (ed.), *Victorian Science in Context* (Chicago and London, 1997), is especially useful.

Of a daunting literature on the Darwinian revolution a useful introduction is the collection of essays of generally high quality is David Kohn (ed.), *The Darwinian Heritage* (Princeton, N.J., 1985) and J. Hodge and G. Radick (eds.), *The Cambridge Companion to Darwin* (Cambridge, 2004). Other general books on Darwin's hypothesis and its origins and consequences include David R. Oldroyd's *Darwinian Impacts. An Introduction to the Darwinian Revolution* (Milton Keynes, 1980) and Dov Ospovat, *The Development of Darwin's Theory. Natural History, Natural Theology, and Natural Selection, 1838–1859* (Cambridge, 1981). Loren Eiseley's *Darwin's Century. Evolution and the Men who Discovered it* (New York, 1958) is still challenging. For an intellectual and political appreciation of evolutionary debates in England just before Darwin, Adrian Desmond, *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London* (Chicago, 1989) is particularly helpful. For the often neglected pre-darwinian theological debate on evolution, Part III of my book on Baden Powell (Cambridge, 1988) provides the relevant bibliographical information. Despite some questionable interpretations, Gertrude Himmelfarb's *Darwin and the Darwinian Revolution* (New York, 1959) remains an exceptionally rich source. Recent writing on Darwin, however, has tended to be overshadowed by the readable and reliable biographies by Adrian Desmond and James Moore – *Darwin* (London, 1991) – and Janet Browne – *Charles Darwin. Voyaging*

(London, 1995), and *Charles Darwin. The Power of Place* (London, 2002). Huxley has been similarly well served by Adrian Desmond: see Desmond's two volumes of biography, *Huxley. The Devil's Disciple* (London, 1994) and *Huxley. Evolution's High Priest* (London, 1997).

For a well-chosen selection of primary sources on the relations between science and religion, Tess Cosslett's *Science and Religion in the Nineteenth Century* (Cambridge, 1984) can be recommended. On this subject, John Hedley Brooke's *Science and Religion. Some Historical Perspectives* (Cambridge, 1991), especially chapters 6–8, is incomparable and is strongly recommended for purchase. Very important too is John Hedley Brooke and Geoffrey N. Cantor, *Reconstructing Nature. The Engagement of Science and Religion* [Gifford Lectures, 1995–6] (Edinburgh, 1998).

In these introductory notes, I have suggested readily available (usually paperback) items that provide a wide basic coverage. In this way, unfortunately, some of the most exciting modern literature in the field is ignored. If you are particularly interested in geology, for example, you will want to come to grips with the writings of Martin Rudwick, in particular his acclaimed book *The Great Devonian Controversy. The Shaping of Scientific Knowledge among Gentlemanly Specialists* (Chicago and London, 1985). Geology and natural history can also be well studied through the interesting collection of essays, edited by Nicholas Jardine, J. A. Secord, and E. C. Spary, *Cultures of Natural History* (Cambridge, 1996), while Victorian practices of reading and conversation about such subjects are fascinatingly treated in Secord's *Victorian Sensation* (Chicago, 2001), a magisterial study of the publishing and reception of Robert Chambers's *Vestiges of the Natural History of Creation* (1844). Finally, on religion, no serious work is possible without reference to Owen Chadwick's two volumes on *The Victorian Church* (London, 1966–70), and on Victorian social theory, John W. Burrow, *Evolution and Society. A Study in Victorian Social Theory* (Cambridge, 1966), remains indispensable.

January 2010

Pietro Corsi

The caricature on the front cover is of Thomas Henry Huxley. It is by Carlo Pellegrini ('Ape'), who began a famous series of portraits of public figures in Vanity Fair in 1862. The tradition was continued in a similar style in the same magazine by Leslie Ward ('Spy').

WEEK 2

Philosophies of science and the foundation of scientific authority

Around 1800, French *émigrés* to England and local conservatives agreed that the bloodshed of the French Revolution had been the consequence of man's arrogance: convinced that science could solve all human problems, the intellectual scientific *élite* had preached the masses that religion was a tale. The consequence of this foolishness were under everyone's eyes. Indeed, prominent representative of the French scientific movement had fallen victim of the mob they had themselves unleashed. Scientists not only lacked political common sense. They also lacked philosophical sophistication. Within the sciences, only mathematics and a few branches of physics were capable of attaining self-evident, necessary truth. The vast majority of men's scientific endeavours could only attain very limited knowledge of phenomena, 'contingent truth', in the language of the time. Scientists and political philosophers such as John Stuart Mill argued on the contrary that properly conducted, inductive procedures were capable of attaining self-evident, universal truths. An original viewpoint was put forward by the Cambridge polymath William Whewell, who denied that induction could ever achieve universal knowledge, without the help of 'Ideas' he progressively came to regard as intuitions of God's creative plan. Philosophers, theologians, scientists and the general cultivated public of nineteenth century England were fully aware that the debate on the epistemological foundations of modern science reflected diverging theological, social and political agendas.

Stephen Collini, 'From sectarian radical to national possession: John Stuart Mill in English culture, 1873–1945', in G. W. Smith, *John Stuart Mill's Social and Political Thought* (London 1998), vol. 4, pp. 380–405

Pietro Corsi, 'The heritage of Dugald Stewart: Oxford philosophy and the method of political economy, 1809–1832', *Nuncius. Annali di Storia della Scienza*, nouvelle série, vol. 2, f.2 (1987), pp. 89–144

Pietro Corsi, *Science and religion. Baden Powell and the Anglican Debate, 1800–1860* (Cambridge, 1988)

Menachen Fisch and Simon Schaffer (eds.), *William Whewell: A Composite Portrait* (Oxford, 1991)

Alan Ryan, *The Philosophy of John Stuart Mill* (Atlantic Highlands, 1990)

Laura Snyder, *Reforming Philosophy. A Victorian Debate on Science and Society* (Chicago, 2006)

Richard Yeo, *Defining Science: William Whewell, Natural Knowledge and Public Debate in Early Victorian Britain* (Cambridge, 1991)

WEEK 3

The common context: Genesis, geology, and natural theology

About 1800, following a heated debate on the responsibility of the scientific movement in fostering atheism and subversion, the interests of religion and science seemed to have converged most satisfactorily in the broad consensus known as natural theology. Properly led by Christian natural philosophers, the scientific movement could contribute to highlight nature's providential design. Moreover, the evidence of God's constant intervention in the natural order could be appreciated by each and all candid mind, irrespectively of their social standing or level of education. Even the most devoted advocates of natural theology, including William Paley and the authors of the influential series of eight volumes devoted to natural theology, the *Bridgewater Treatises*, insisted that the role of natural theology was as a complement to revealed theology, not as a substitute for it. But not everyone was convinced. Indeed, even within the rank and file of the natural theology movement opinion substantially differed on what precisely did constitute evidence of design: daily and direct divine intervention, or a system of natural laws set in motion at the beginning of creation? In this lecture, intellectual, social and political contexts are discussed in an attempt to explain the rise of natural theology and its subsequent faltering in the years just before the appearance of Darwin's *Origin*, years in which evolutionary ideas were common currency in advanced and intellectual circles.

Primary source:

Baden Powell, *Essays on the Spirit of the Inductive Philosophy, the Unity of Worlds and the Philosophy of Creation* (1855). Essay I, chaps. I, II and V, pp. 3–81 and 133–68

Key reading:

John Hedley Brooke, *Science and Religion. Some Historical Perspectives* (Cambridge, 1991), chapters 6 and 7

Pietro Corsi, *Science and Religion. Baden Powell and the Anglican Debate, 1800–1860* (Cambridge, 1988), Parts II and III, especially chapters 9–12

Other reading:

John Hedley Brooke and Geoffrey N. Cantor, *Reconstructing Nature. The Engagement of Science and Religion* (Edinburgh, 1998), chapters 5 and 6

Aileen Fyfe, *Science and Salvation. Evangelical Publishing in Victorian Britain* (Chicago and London, 2004)

J. B. Morrell, *John Phillips and the Business of Victorian Science* (Aldershot, 2005)

- Dov Ospovat, *The Development of Darwin's Theory. Natural History, Natural Theology, and Natural Selection, 1838–1859* (Cambridge, 1981)
- Martin J. S. Rudwick, *The Great Devonian Controversy. The Shaping of Scientific Knowledge among Gentlemanly Specialists* (Chicago and London, 1985)
- Martin J. S. Rudwick, *Bursting the Limits of Time. The Reconstruction of Geohistory in the Age of Revolution* (Chicago and London, 2005), chapters 10.3–10.6
- James A. Secord, 'Introduction', in Secord (ed.), *Vestiges of the Natural History of Creation and Other Evolutionary Writings by Robert Chambers* (Chicago, 1994), pp. ix–xlv
- James A. Secord, *Victorian Sensation. The Extraordinary Publication, Reception, and Secret Authorship of Vestiges of the Natural History of Creation* (Chicago and London, 2000)
- Michael Shortland (ed.), *Hugh Miller and the Controversies of Victorian Science* (Oxford, 1996), especially the contributions by Shortland, John Hedley Brooke, and Donald Macleod
- Michael Wheeler, *Ruskin's God* (Cambridge, 1999), chapter 8

WEEK 4

Darwin and natural selection

Darwin's forebodings about the likely repercussions of the *Origin* proved fully justified. For although evolutionary theories of the history of life were familiar enough by 1859, the notion of natural selection as the mechanism of evolution was new and disturbing. Above all, natural selection undermined the tradition of providentialist teaching which saw the exquisite adaptation of animals to their environment (an inevitable consequence of natural selection) as explicable only by God's creative activity, either at the Creation (in the deistic version) or at intervals in the subsequent history of the world (as theists believed). The theory was inevitably divisive, but the lines of the division are often misapprehended. The confrontation between Huxley and Wilberforce at the Oxford meeting of the British Association in 1860, in particular, is a snare, since it suggests that the forces of atheism and science (personified in Huxley) were pitted quite straightforwardly against religion, represented by the Bishop of Oxford. In reality, there were profound internal conflicts within both the scientific and the religious camps, conflicts that set England's leading anatomist Richard Owen against Darwin, for example, and Broad Church Anglicans against Wilberforce.

Primary sources:

The recently published website <http://darwin-online.org.uk>, edited by J. van Whye, provides easy access to Darwin's works and manuscripts.

Charles Darwin, *On the Origin of Species* (London, 1859), chapter 14 (chapter 15 in the Everyman edition). The text is in the volume of texts edited by Tess Cosslett, *Science and Religion in the Nineteenth Century* (Cambridge, 1984), pp. 88–109. Another useful version is the Penguin Classics edition of the *Origin*, which has a perceptive and informative introduction by John Burrow.

'Autobiography of Charles Darwin' (1876), in Sir Francis Darwin (ed.), *The Life and Letters of Charles Darwin*, vol. I (1888), chap. II, 26–107

Key reading:

Either Adrian J. Desmond and James R. Moore, *Darwin* (London, 1991), at least chapters 30–34

Or as much as you can manage of Janet Browne's two volumes: *Charles Darwin. Voyaging* (London, 1995) and *Charles Darwin. The Power of Place* (London, 2002)

Other reading:

Pietro Corsi, *Science and Religion. Baden Powell and the Anglican Debate, 1800–1860* (Cambridge, 1988), Part III, 'Species without Darwin'

Adrian Desmond and James Moore, *Darwin's sacred cause: race, slavery and the quest for human origins* (London, Allen Lane, 2009)

Martin Fichman, *An Elusive Victorian. The Evolution of Alfred Russel Wallace* (Chicago and London, 2004)

Richard Keynes, *Fossils, Finches, and Fuegians. Charles Darwin's Adventure and Discoveries on the Beagle, 1832–1836* (London, 2002)

Charles Moore, 'Wallace's Malthusian moment: the common context revisited', in Bernard Lightman (ed.), *Victorian Science in Context* (Chicago and London, 1997), pp. 290–311

Michael Shermer, *In Darwin's Shadow. The Life of Alfred Russel Wallace* (Chicago and London, 2002)

Phillip R. Sloan, 'Whewell's philosophy of discovery and the archetype of the vertebrate skeleton: the role of German philosophy of science in Richard Owen's biology', *Annals of Science*, 60 (2003), 39–61

S. M. Walters and E. A. Stow, *Darwin's Mentor. John Stevens Henslow 1796–1861* (Cambridge, 2001)

WEEK 5

Science, criticism, and the crisis of faith

The religious doubts that lay at the heart of the Victorian crisis of faith had intellectual roots not only in science but also, and more forcibly, in the emerging tradition of German biblical scholarship. By presenting the Bible as a fallible source, comparable with any other ancient text, German scholars cast doubt not only on its divine origin but also on the supposedly historical events of the Old Testament and even of the lives of Christ and the Apostles. The works of David Strauss (*The Life of Jesus*, 1835) and others provoked conflicting waves of revulsion and admiration throughout the Christian world. In Britain, the ‘higher criticism’ reinforced the scepticism of those who were ready to turn away from traditional religion: the success of the positivist Religion of Humanity was one manifestation of this. But many leading Christians too were captivated by the ideas emanating from the German universities, and it was a group of liberal Anglicans who produced the most constructive response to new perceptions of the Bible and to the rising tide of scientific naturalism in a collection of seven essays published in 1860 as *Essays and Reviews*. The history of *Essays and Reviews* is a microcosm of the Anglican Church’s struggle to come to terms with the modern world. It has many echoes in our own time.

Primary sources:

Thomas Henry Huxley, *Evolution and Ethics* [Romanes Lecture] (London, 1893)

William Thomson, Baron Kelvin, Presidential address delivered to the British Association meeting at Edinburgh in 1871, reprinted as ‘The structure of matter and the unity of science’, in G. Basalla, W. Coleman, and R. Kargon (eds.), *Victorian Science* (New York, 1970), pp. 101–28

John Tyndall, ‘Address’, *Report of the Forty-Fourth Meeting of the British Association for the Advancement of Science, held at Belfast, August 1874* (1875), pp. 87–97

Key reading:

Brooke, *Science and Religion*, chapter 8

Other reading:

Ruth Barton, ‘John Tyndall, pantheist: a rereading of the Belfast Address’, *Osiris*, 2nd ser. 3 (1987), 111–34

W. H. Brock and R. M. MacLeod, ‘The scientists’ declaration: reflexions on science and belief in the wake of *Essays and Reviews*, 1864–5’, *The British Journal for the History of Science*, 9 (1976), 39–66

- Brooke and Cantor, *Reconstructing Nature*, pp. 48–57 and chapter 8
- Owen Chadwick, *The Victorian Church* (2 vols., London, 1966–70), vol. 2, section II, especially pp. 75–97 (on *Essays and Reviews*); also pp. 1–75 (on ‘Science and religion’ and ‘History and the Bible’)
- Owen Chadwick, *The Secularization of the European Mind in the Nineteenth Century* (Cambridge, 1975), chapters 7 and 8
- Ieuan Ellis, *Seven against Christ. A Study of ‘Essays and reviews’* (Leiden, 1980)
- Peter Hinchcliff, *Frederick Temple, Archbishop of Canterbury. A Life* (Oxford, 1998), especially chapter 3 (on *Essays and reviews*) and chapter 7 (on religion and science)
- Victor Shea and William Whitla (eds.), *Essays and Reviews. The 1860 Text and its Reading* (Charlottesville and London, 2000)
- Simon Skinner, *Tractarians and the ‘Condition of England’: The Social and political Thought of the Oxford Movement* (Oxford, 2004)
- Anne Thwaite, *Glimpses of the Wonderful. The Life of Philip Henry Gosse 1810–1888* (London, 2002)
- Frank Miller Turner, *Between Science and Religion. The Reaction to Scientific Naturalism in Late Victorian England* (New Haven and London, 1974), especially chapters 2, 4, and 6
- Terence R. Wright, *The Religion of Humanity. The Impact of Comtean Positivism on Victorian Britain* (Cambridge, 1986)

WEEK 6

The roots of human history: archaeology, anthropology, and the evolutionary model

In mid-Victorian Britain, Herbert Spencer was the best-known theorist of social evolution. He saw human history as exemplifying a transition from the homogeneity of primitive societies to the heterogeneity of complex modern societies. Supporting his analysis by scientific theories drawn in particular from Lamarck’s doctrine of the inheritance of acquired characteristics and recent developments in embryology, he brought the biological and social realms of evolutionary thought together in a synthesis that broke sharply and deliberately with the view of society as an artefact capable of virtually infinite manipulation. The latter view, espoused in the early nineteenth century by Bentham and other ‘philosophic radicals’, duly lost ground as Spencer’s stock rose and as social Darwinism incorporated many of the principles that in reality were Spencerian in

origin. It is no coincidence that the debates of this period also made their mark in the rise of archaeology and anthropology.

Primary sources:

Herbert Spencer, 'Progress: its law and cause', *Westminster Review*, new ser. 11 (April 1857), 445–85

Herbert Spencer, *The Study of Sociology* (1873), chapters 1–3 (pp. 1–71)

Alfred Russel Wallace, 'Darwinism applied to man', in *Darwinism. An Exposition of the Theory of Natural selection with Some of its Applications* (London, 1889), chapter 15 (pp. 445–78)

Key reading:

Mark Francis, *Herbert Spencer and the invention of modern life* (Stocksfield, Acumen 2007), chs. 14–17)

Robert M. Young, 'Malthus and the evolutionists: the common context of biological and social theory', in Young, *Darwin's Metaphor*, pp. 23–55; originally published in *Past and Present*, no. 43 (1969), 109–45

Other reading:

Peter J. Bowler, *Theories of Human Evolution. A Century of Debate, 1844–1944* (Oxford, 1987)

Peter J. Bowler, *Biology and Social Thought, 1850–1914* (Berkeley, Ca., 1993)

John W. Burrow, *Evolution and Society. A Study in Victorian Social Theory* (Cambridge, 1966), especially chapter 6 (on Spencer)

Michael Freeman, *Victorians and the Prehistoric* (New Haven, Conn., and London, 2004)

T. W. Heyck, *The Transformation of Intellectual Life in Victorian England* (London, 1982), chapter 5

Greta Jones, *Social Darwinism and English thought. The Interaction between Biological and Social Theory* (Brighton, 1980), chapters 2–4

Benjamin Kidd, *Social Evolution* (London, 1894)

Roger Smith, *The Fontana History of the Human Sciences* (London, 1997), chapter 13

George W. Stocking, Jr., 'From chronology to ethnology: James Cowles Prichard and British anthropology 1800–1850', in Prichard, *Researches into the Physical History of Man* (facsimile reprint of 1813 edition; Chicago and London, 1973), ix–cx

David Sloan Wilson, *Darwin's Cathedral. Evolution, Religion, and the Nature of Society* (Chicago and London, 2003)

WEEK 7

Scholarship and the liberal ideal in education

The danger of seeking a single characterization of a period has led historians to be suspicious of such notions as the ‘spirit of the age’ and ‘the Victorian mind’. The reality is almost invariably one of diversity and tension. The Victorian period is no exception. Much of this lecture will be devoted to one such tension: that between the Victorian admiration for classical antiquity and the parallel interest in the Middle Ages. For Lord Acton, writing in 1859, this was ‘the great dualism that runs through our society’. The two cultural tendencies bore rich scholarly fruit. Britain (though never quite the equal of Germany) was among the leaders in classical scholarship, while a variety of devotees of medieval art and culture, from Pugin to Ruskin, expounded their views in a tradition of writing broadly associated with the movement that, with caution, we can designate as the Gothic Revival. Ideas emanating from these loftier regions of ‘high’ culture permeated the worlds of education and the reading public. Here, in a recurring debate, attempts were made to determine the way in which professional scholarship and refined taste should be integrated in the formation of the young mind. William Whewell, John Henry Newman, Henry Sidgwick, Thomas Henry Huxley, and Mark Pattison were just a few of those whose views on a liberal education will be touched on. The debate was one in which the emergence of our own discipline of modern history (in Oxford from the 1850s) also became involved.

Primary sources

- J. Bryce, Preface to J. Conrad (ed.), *The German Universities for the Last Fifty Years*, trans. John Hutchison (Glasgow, 1885), xiii–xxx
- J. Ruskin, ‘The nature of Gothic’, from *The Stones of Venice* (1851–3); ‘The two boyhoods’, from *Modern Painters*, vol. 5 (1860); ‘Traffic’, from *The Crown of Wild Olive* (1866) – all reprinted in *Unto This Last and Other Writings* (Penguin, 1985), ed. C. Wilmer, pp. 77–109, 144–53, 233–49.
- Schools Inquiry Commission [Taunton], (P.P. 1867–8, xxviii, part 1): ‘Of the kinds of education which appear to be desirable and attainable’, pp. 14–49, and ‘Girls’ schools’, pp. 546–70
- H. Sidgwick, ‘The theory of classical education’, in F. W. Farrar (ed.), *Essays on a Liberal Education*

Key reading:

Arthur J. Engel, *From Clergyman to Don. The Rise of the Academic Profession in Nineteenth-Century Oxford* (Oxford, 1983)

Other reading:

- Paul Atterbury and Clive Wainwright (eds), *Pugin. A Gothic Passion* (New Haven and London, 1994)
- Kenneth Clark, *The Gothic Revival. An Essay in the History of Taste* (London, 1928, and many subsequent editions)
- Jane Garnett, 'Political and domestic economy in Victorian social thought: Ruskin and Xenophon' in *Economy, Polity and Society: Essays in British Intellectual History 1750–1950* (Cambridge, 2000), pp. 205–33
- Lawrence Goldmann, 'Oxford and the idea of a university in nineteenth-century Britain', *Oxford Review of Education*, Vol. 30, 4 (2004), pp. 575–92
- Thomas Henry Huxley, 'A liberal education and where to find it' and 'Scientific education: notes of an after-dinner speech', in Huxley, *Lay Sermons, Essays and Reviews* (London, 1895), pp. 24–61
- Richard Jenkyns, *The Victorians and Ancient Greece* (Cambridge, Mass., 1980)
- Peter Slee, *Learning and a Liberal Education. The study of Modern History in the Universities of Oxford, Cambridge and Manchester 1800–1914* (Manchester, 1986)
- John Sparrow, *Mark Pattison and the Idea of a University* (Cambridge, 1967), especially chapters 3 and 4
- Frank M. Turner, *The Greek Heritage in Victorian Britain* (New Haven and London, 1981), chapters 1–3



The University Museum in the late nineteenth century. The museum, which was designed to provide facilities for all the sciences on a single site, reflected the vision of a unified body of scientific knowledge in accordance with the principles of Charles Daubeny and Henry Acland. It was on the first floor of the building, in what was then the library, that Thomas Huxley and the Bishop of Oxford, Samuel Wilberforce, engaged in their heated debate about Darwin's theory of evolution by natural selection in June 1860.



*Richard Owen,
caricatured in
the magazine
Vanity Fair,
1 March 1873*