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an important topos in his era and presumably for him (pp. 139, 169, 278). It is a pity that Heringman, who is well read, combines inflated claims and obscure jargon, because he senses that in the late eighteenth century the activity of studying the earth was not dissociated from mineralogical tourism, Romantic poetry, travel books and notions of the sublime and the picturesque, particularly in connection with the wonders of the White Peak District of Derbyshire. These are worthy themes which deserve lucid exposition.

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CHARLES DARWIN, *The Descent of Man, and Selection in Relation to Sex*. 2nd edition of 1874. With an introduction by James Moore and Adrian Desmond. Penguin Classics. London: Penguin, 2004. Pp. lxvi + 791. ISBN 0-140-43631-6. £9.99 (paperback).
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James Moore and Adrian Desmond have brought out a new paperback edition of Darwin's *Descent of Man, and Selection in Relation to Sex*. They chose the final printing (1879) of the second edition (1874) as the text, which for scholars will serve as a handy companion to the first edition (1871), readily available from Princeton University Press. For teaching purposes, the Penguin version may even be preferred to the first edition because of the inclusion of a chronology of Darwin's life, an appendix containing thumbnail sketches of individuals named in the text and, most especially, Moore and Desmond's provocative fifty-page introduction – an introduction admirable in its social detail and implausible in its deflationary thesis.

Moore and Desmond situate Darwin's work in the context of his burning anti-slavery attitudes – initially ignited when he visited the slave countries of South America while on the *Beagle* voyage. They observe that in the *Descent* Darwin sought to explain human evolution and racial diversity through his device of sexual selection. They contend that this mode of selection allowed him both to establish a unified origin for humankind in ape-like predecessors and to account for racial varieties through mate selection in contingent circumstances. Skin colour, head shape, hair texture and intellect varied among the races because individuals over millennia had chosen mates according to local standards and chance conditions. The authors seem to imply, but do not say, that Darwin must have believed such contingent conditions could leave little impress on the human constitution. Thus Darwin, in the authors' interpretation, rejected a phylogenetically structured hierarchy of the human races, of the sort advanced by his German disciple Ernst Haeckel. Darwin's repudiation of racial ranking, they maintain, ultimately rested on his abolitionist convictions: 'sexual selection united the races and undermined slavery' (p. xlviii).

This account of Darwin's motivation for his theory of human evolution does suffer the inconvenience of being unsupported by any evidence. Darwin certainly was a foe of slavery. His abolitionist sentiments were nurtured in the enlightened Whig household of his father and voluble sisters, and his hatred of slavery became incandescent as the result of poignant experiences in South America. But there is no indication in the *Descent* – or elsewhere – that he formulated his conception of human evolution in order to undermine the peculiar institution. Despite Moore and Desmond's suggestions to the contrary, in his book Darwin described the races as forming an obvious hierarchy of intelligence and moral capacity, from savage to civilized, with the 'intellectual and social faculties' of the lower races comparable to those that must have characterized ancient man (p. 209). Accordingly, he ventured that 'the grade of their civilisation seems to be a most important element in the success of competing nations' (p. 212), which explained for him the extermination of the Tasmanians and the severe decline in population of the Australians, Hawaiians and Maoris. Those groups succumbed in struggle with more advanced peoples (pp. 211–22). In this respect Darwin was no different from Haeckel,

whose conception of ‘human genealogy’ the Englishman emphatically endorsed in the introduction to his book (p. 19).

In fitful recognition that Darwin’s text is actually antithetic to the abolitionists’ views, Moore and Desmond suggest that by the 1860s this prosperous Whig had become more politically and socially conservative. His eminence and progressivist values, along with the chaos of the American Civil War, moved him to abandon his earlier notions of racial equality. Even as he was composing the first volume of the *Descent* he quickly came to perceive, for instance, the threat of the underclasses, especially as represented by the savage, bomb-throwing inhabitants of the Emerald Isle. This social milieu led Darwin to construct, in Moore and Desmond’s estimation, not a workingman’s science but ‘a piece of self-congratulatory science for the Liberal *nouveau riche*’ (p. liv). But now what has become of their thesis (p. xxvii) that ‘his biology underwrote abolitionist values’? It is hard to say. They appear to claim that Darwin’s conception of sexual selection had its contours shaped by anti-slavery ideals but its content formed by Whig self-aggrandizement. Was a scientist ever more at cross purposes with himself? Darwin’s theory, as they represent it, unfurls fluttering in the winds of opposing ideologies.

Moral capacity became Darwin’s central concern in explaining human evolution; this consideration occupies two chapters and many asides in Darwin’s book, though receives only glancing attention by Moore and Desmond. Most of Darwin’s English contemporaries did not doubt that animals, even those low on the scale, could reason, but they rejected the idea that animals had anything like a moral conscience, a trait that was distinctively human and God-given. Morality was the Rubicon separating man and animals. For Darwin to make his theory convincing and to keep the door shut against the return of the Deity, he had to show how a moral sense could have arisen out of animal social instinct. Moore and Desmond recognize that Darwin could not explain this kind of adaptation by natural selection operating on the individual, since altruistic behaviour – the hallmark of the moral for Darwin – gave the actor no advantage and usually had a cost. They correctly portray Darwin as adopting a version of group selection to explain the evolution of that faculty: tribal groups that by chance had individuals who were ready to sacrifice themselves for the common good would have the advantage over other tribes lacking altruists. But driven by their own ideological concerns, the authors read Darwin’s account as ‘legitimizing the virtues by which upper-class Victorians placed themselves at the apex of civilization’ (p. xxxix). They portray Darwin as simply adjusting his selection theory to the ‘racial measuring rod [of] the Benthamite “greatest happiness of the greatest number” ideal of his Whig party’ (p. xxxix). They fail to mention that Darwin explicitly rejected Benthamite utility as the moral motive; he construed the social instincts in animals and man ‘as having been developed for the general good rather than for the general happiness of the species’ (p. 145). Moreover, the solution to the problem of altruism directly derived not from a desire to enshrine Whig virtues but from Darwin’s earlier solution to the like problem of the evolution of the instincts of the lowly social insects – worker ants and bees who could not reproduce their kind because they were neuters. Community selection of insect hives furnished a model for community selection of human tribes (pp. 83, 157–8). When humans acted morally they thus harboured no secret motives for selfish advantage or even for general happiness but expressed innate desires for social cooperation and community good (in terms of health and welfare) – at least that was Darwin’s stated message (pp. 144–5).

Though Moore and Desmond freight their account of Darwin’s theory with an abundance of social and political determinates, they are not unmindful that he published on human descent ultimately to resolve two problems that arose more directly out of the scientific milieu of the 1860s, and they do give these problems just accord. The first is straightforward enough: having sustained a loud silence about human evolution in the *Origin of Species*, Darwin felt compelled finally to give an account – especially since his critics had already divined the implications of

his theory for humans. But the second major source derived from conflicts with Wallace. In the late 1860s Darwin and Wallace had a protracted disagreement about how sexual selection operated in birds and other organisms – hence Darwin’s cascading discussions in the second volume of his book (almost four hundred pages) of sexual selection in beetles, butterflies, birds and bucks. But an even more significant dispute with Wallace arose because of his friend’s conversion to spiritualism. Wallace had come to argue that the distinctive features of human beings – naked skin, aesthetic sense, moral character and large intellect – could not be explained by natural selection because such traits conferred little or no survival advantage. Only higher spiritual powers could have produced them. Darwin accepted Wallace’s analysis that these traits could not be explained by natural selection, but he did not fall prey to Wallace’s new faith. Rather, he proposed other powerful but natural forces to account for the distinctive traits characterizing human societies, namely the forces of sexual selection and group selection – elegant solutions to a vexing conceptual problem.

Darwin was a child of the nineteenth century, not a modern neo-Darwinian, and Moore and Desmond quite properly remind us of that salient fact. Undoubtedly many of his notions reflect the social and political attitudes of the period. Yet there is a core of sound, ‘objective’ science that his theory of human evolution establishes. If proper weight is not accorded to this hard core, one simply cannot explain historically the power of his theory and its spread through very different social and political terrains.

Moore and Desmond’s introduction is robust in social detail but wavering in line of argument. Their provocative, if inconsistent, social thesis will stimulate in novice readers endless hours of debate about the racism and sexism of Darwin’s theory of human evolution. Those readers, though, once into Darwin’s actual text, may well become convinced of a scientific theory of singular power and grace.

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GRETA JONES and ROBERT A. PEEL (eds.), *Herbert Spencer: The Intellectual Legacy*. London: The Galton Institute, 2004. Pp. xv + 154. ISBN 0-9504066-8-6. £5.00 (paperback).

ABIGAIL LUSTIG, ROBERT J. RICHARDS and MICHAEL RUSE (eds.), *Darwinian Heresies*. Cambridge: Cambridge University Press, 2004. Pp. vii + 200. ISBN 0-521-81516-9. £40.00 (hardback).

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In *The Growth of Biological Thought* (Cambridge, MA, 1982) Ernst Mayr argued that it is ‘quite justifiable to ignore [Herbert] Spencer totally in a history of biological ideas’ (p. 386). On the whole, Mayr’s view accords with how both science and its historians have portrayed the most widely read evolutionary thinker of the nineteenth century. Spencer held no formal science qualifications and his life’s work – an experiment-free, multi-volume series that followed a grand philosophy of evolution through every domain of life – has often been looked upon unfavourably in comparison with the work of his peers. Active in a period usually viewed through the prism of ‘professionalization’, he is typically seen as an amateur who clothed in science an imperialist theory of might as right. The passage of time has certainly not been kind, but the two collective volumes under review give good reason for thinking that a re-evaluation is due.

In one of the most impressive essays in *Darwinian Heresies*, Michael Ruse, the volume’s co-editor along with Abigail Lustig and Robert J. Richards, argues that we are wrong to think of Spencer’s scientific influence as being confined to his own lifetime. On the contrary, Ruse asserts, detailed examination uncovers Spencerian themes in the evolutionary theory of the early twentieth century and, by extension, the evolutionary theory we have now. Specifically, Ruse looks at the ideas and career of the American population geneticist Sewall Wright, whose