INTRODUCTION

RONALD L. NUMBERS AND JOHN STENHOUSE

In 1859 the English naturalist Charles Darwin, a resident of Down outside of London, published his controversial views on the origin of species. In a landmark book entitled *On the Origin of Species by Means of Natural Selection*, he argued against the conventional notion that God had supernaturally created the original types of plants and animals and in favor of the idea that they had evolved naturally over long periods of time primarily, though not exclusively, by means of random variation and natural selection. News of his heretical views spread rapidly, and before long even the citizens of such remote outposts of British civilization as Dunedin, New Zealand, halfway around the globe from Down and home of the southernmost university in the world, were debating the merits of Darwinism.

The essays in this volume focus specifically on the ways in which geography, gender, race, and religion influenced responses to Darwin. Chronologically, they span the period from the publication of the *Origin* to the 1930s, when Darwin's theory of natural selection finally captured the allegiance of the scientific community. Geographically, they concentrate on the English-speaking world, especially Canada, Australia, New Zealand, and the United States. Although historians of science have been examining Darwin's influence for decades and have produced a number of notable studies, our knowledge of how various groups and regions responded to Darwinism remains spotty. For example, despite the availability of such works as Thomas F. Glick's *Comparative Reception of Darwinism* (1974) and the section "Towards the Comparative Reception of Darwinism" in David Kohn's *Darwinian Heritage* (1985) – neither of which covers Australia, New Zealand, or Canada – we still know relatively little about the role of locale in affecting responses to Darwin.[1]

The case studies in this volume illustrate the importance of local social and religious arrangements in affecting responses to Darwinism, a term, it should be noted, that conjured up markedly different images for different people. The essays show that neither distance from Down nor size of community greatly influenced how regions responded to Darwinism, although the smaller the community the more likely it was that individual personalities would dominate the debates. Institutional maturity

also seems to have made some difference. In Canada and Australia, for example, where nonevolutionists frequently continued to occupy scientific chairs established before 1859, evolution entered the universities relatively slowly. In New Zealand, in contrast, which did not establish a university until 1869, evolutionists often occupied scientific chairs from their establishment. This made it easier in principle for evolution to gain a foothold. However, on occasion concern about the vulnerability of youthful institutions led their leaders to shy away from involvement in possibly damaging Darwinian debates.

Local environments, both physical and social, seem to have colored responses to evolution. In Canada, for example, the settlers' struggle to survive in a harsh physical environment predisposed some to see a measure of plausibility in a Darwinian view of nature. The New Zealand environment, though temperate in climate, likewise contributed to a positive view of the doctrine of survival of the fittest. There the main threat came from the social environment, in particular from the indigenous Maori, who stood in the way of white expansion. Faced with this obstacle, some settlers employed evolution as an ideological weapon in their struggle against the Maori.

In the field of Darwinian studies, few topics have received more attention than the responses of the religious. Jon H. Roberts' *Darwinism and the Divine in America* (1988), David N. Livingstone's *Darwin's Forgotten Defenders* (1987), and James R. Moore's *Post-Darwinian Controversies* (1979), to name only three of the most important recent studies, represent only a small fraction of the large body of literature on this subject.[2] Yet the extent to which such factors as geographical location and denominational affiliation made a difference in responding to Darwinism remains unclear. In addition, the responses of Catholics and Jews have remained comparatively unexplored.

In contrast to historians who have seen theological interests as central in determining the responses of the religious, Livingstone stresses the significance of geographical locality. He argues that local conditions noticeably affected the ways in which orthodox Calvinists (mostly Presbyterians) in Princeton, New Jersey; Belfast, Northern Ireland; and Edinburgh, Scotland reacted to Darwinism. For example, John Tyndall's notorious attack on Christianity in a Belfast speech in 1874 tended to sour northern Irish Presbyterians on Darwinism, whereas the absence of such frontal attacks in Princeton left their theologically similar brethren across the Atlantic psychologically less hostile to evolutionary claims. Similarly, John Stenhouse suggests that the introduction of evolution in Dunedin, New Zealand, by Anglicans and Methodists contributed to the somewhat jaundiced response by their Presbyterian rivals.

In evaluating American Protestant responses to Darwinism, Jon H. Roberts emphasizes the ways in which epistemological issues influenced attitudes toward Darwinism. In particular, he stresses the importance of biblical (as opposed to natural theological) concerns among opponents of evolution, even before the fundamentalist controversies of the 1920s. He also downplays the importance of denominational labels, arguing that within mainline Protestantism denominational allegiances have little predictive value in identifying the degree of support for Darwinism – and have no apparent correlation with the mechanism of evolution embraced. Only on the margins of Protestantism – in some Holiness, Lutheran, and Adventist groups, for example – did denominational identity strongly influence attitudes toward evolution. Roberts urges caution in attaching too much weight to such analytical categories as social interest, cultural strain, and geography in explaining opposition to evolution. Although the American South produced fewer Protestant proponents of evolution than the North, the differences between the two regions were less striking than is sometimes alleged.

Ronald L. Numbers and Lester D. Stephens drive home this point in their reexamination of Darwinism in the American South. In contrast to the conventional view of the South as uniquely hostile to evolution, they highlight the extent to which evolution gained a foothold in the region, in both churches and schools. In fact, the outburst of antievolution sentiment in the 1920s sprang to a considerable degree from the extent to which Darwinism had penetrated southern thinking. Even during the height of the movement to ban the teaching of evolution, a majority of southern states repelled efforts to restrict the teaching of evolution in public schools. Significantly, southern opponents of Darwinism, like many critics elsewhere, focused their efforts on curtailing the teaching of *human* evolution rather than organic evolution generally.

The essays on American Catholic and Jewish responses to Darwinism, by R. Scott Appleby and Marc Swetlitz, respectively, illustrate the ways in which both religious identity and national context made a difference. During the late nineteenth century, neither the Catholic nor the Jewish communities in America produced many scientists who could serve as mediators between scientific and religious claims, and both communities were handicapped in participating in the discussion because of their relatively large numbers of non-English-speaking members. Nineteenth-century Catholic intellectuals also lived under the shadow of the Vatican's negative attitude toward developmental theories; thus in the United States (as well as in French Canada, as Zeller suggests), they found it more difficult openly to come to terms with evolution than their Protestant counterparts. The comparatively few Catholics who embraced evolution favored mechanisms that could be harmonized with

natural and revealed theology, insisted on the special creation of the human soul, and stressed the correspondence of their views with those of the church fathers. In the United States, Catholic theistic evolutionists freely advanced their views until the mid-1890s, when officials in Rome, fearing that the accommodation of religious beliefs to American culture was progressing too far, tried to silence them.

In the Jewish community, too, the debate over Darwinism occurred as part of a larger dispute between traditionalists and reformers, who often appealed to evolution as a justification for their religious agenda. Although Jewish arguments for and against evolution often paralleled those of Protestants, Jewish rabbis who accepted evolution did not follow the liberal Protestant clergy, who reformulated their theology to emphasize God's immanence.

Two other factors – race and gender – have also largely escaped the attention of historians of science. Although such works as John S. Haller's *Outcasts from Evolution* (1971) have looked at the ways that scientists viewed persons of African descent in the context of evolution, the opinions of African Americans themselves have gone virtually unnoticed, except for passing mention in such books as Alfred A. Moss's *The American Negro Academy* (1981).[3] The same is true for women. Historians and philosophers of science have paid increasing attention to the implications of evolutionary theories for women, but few of them have focused on the ways in which women themselves responded to Darwinism. All we have are bits and pieces of the story found in such works as Nancy G. Slack's essay on nineteenth-century women botanists (1987), Deborah Jean Warner's biography of Graceanna Lewis (1979), and Evelleen Richards' chapter on "Huxley and Woman's Place in Science" (1989).[4]

In his essay on African-American responses to organic evolution, Eric Anderson finds little evidence that black intellectuals in America linked racism to Darwinism. The failure of such African Americans to denounce Darwinism for giving racism scientific legitimacy leads him to question the extent to which evolution served as "the chief scientific authority for racists." (In examining the attitudes of white southerners toward evolution, Numbers and Stephens find few references to racial matters.) Black Americans, Anderson points out, worried far more about the implications of pre-Darwinian polygenism and about predictions of Negro extinction than about evolutionism, and they opposed Darwinism more for religious than for racial reasons. Although racists occasionally commandeered Darwinism to reinforce their ideologies, they possessed ample scientific ammunition without dragging evolution into the argument. Because many of the most virulent racists were antievolutionists,

they could scarcely appeal to a theory they rejected. John Stenhouse shows that the Maoris of New Zealand reacted to Darwinism in ways similar to those of black Americans. Neither group saw evolution as a massive ideological threat, in part because they faced far more pressing concerns, such as sheer survival.

Sally Gregory Kohlstedt and Mark R. Jorgensen examine how educated women reacted to Darwin's emphasis on differences between the sexes and how his theories influenced the "irrepressible woman question." Although at first there were few women scientists in a position to challenge Darwin's implied defense of Victorian gender roles, and fewer still who wished to do so, some nineteenth-century feminists, such as Antoinette Brown Blackwell, repudiated Darwinian assumptions about women's physical and mental inferiority, whereas others, such as Charlotte Perkins Gilman, chose to stress the ways in which evolution could benefit women. By the turn of the century a handful of women scientists were reexamining the evidence for intellectual differences between the sexes and finding much of it wanting. "Their research," conclude Kohlstedt and Jorgensen, openly challenged "Darwinian notions of 'woman's nature'" and established "empirical standards for testing individual and sex differences."

In the ways mentioned here, the essays in this volume contribute to refining and extending our knowledge of Darwin's reception in the English-speaking world. Some of them treat topics that historians have previously ignored; others challenge prevailing views. Together, they not only demonstrate how deeply Darwinism penetrated diverse English-language cultures but illuminate the great variety of ways in which place, race, religion, and gender modified Darwin's reception.

Notes

1 Thomas F. Glick, ed., *The Comparative Reception of Darwinism* (Austin: University of Texas Press, 1974); David Kohn, ed., *The Darwinian Heritage* (Princeton, N.J.: Princeton University Press, 1985), Part 3: "Towards the Comparative Reception of Darwinism." In 1988 the University of Chicago Press brought out a new edition of the Glick collection. In 1984 the philosopher of science David L. Hull noted that no one had yet demonstrated a correlation "between the reception of Darwin's theory around the world and the larger characteristics of these societies"; see "Evolutionary Thinking Observed," *Science*, 223 (1984):923–24, quotation on p. 923.

2 James R. Moore, *The Post-Darwinian Controversies: A Study of the Protestant Struggle to Come to Terms with Darwin in Great Britain and America, 1870–1900* (Cambridge: Cambridge University Press, 1979); David N. Livingstone,

Darwin's Forgotten Defenders: The Encounter between Evangelical Theology and Evolutionary Thought (Grand Rapids, Mich.: Eerdmans, 1987); and Jon H. Roberts, *Darwinism and the Divine in America: Protestant Intellectuals and Organic Evolution, 1859–1900* (Madison: University of Wisconsin Press, 1988).

3 John S. Haller, Jr., *Outcasts from Evolution: Scientific Attitudes of Racial Inferiority, 1859–1900* (Urbana: University of Illinois Press, 1971); and Alfred A. Moss, Jr., *The American Negro Academy: Voice of the Talented Tenth* (Baton Rouge: Louisiana State University Press, 1981).

4 Nancy G. Slack, "Nineteenth-Century American Women Botanists: Wives, Widows, and Work," in *Uneasy Careers and Intimate Lives: Women in Science, 1789–1979* (New Brunswick, N.J.: Rutgers University Press, 1987), pp. 77–103; Deborah Jean Warner, *Graceanna Lewis: Scientist and Humanitarian* (Washington, D.C.: Smithsonian Institution, 1979); and Evelleen Richards, "Huxley and Woman's Place in Science: The 'Woman Question' and the Control of Victorian Anthropology," in *History, Humanity and Evolution: Essays for John C. Greene*, ed. Moore (Cambridge: Cambridge University Press, 1989), pp. 253–84. See also Rosaleen Love, "Darwinism and Feminism: The 'Woman Question' in the Life and Work of Olive Schreiner and Charlotte Perkins Gilman," in *The Wider Domain of Evolutionary Thought*, eds. D. R. Oldroyd and I. Langham (Dordrecht: D. Reidel, 1983), pp. 113–31.

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Science, region, and religion: the reception of Darwinism in Princeton, Belfast, and Edinburgh

DAVID N. LIVINGSTONE

In recent years there has been a remarkable "spatial turn" among students of society and culture. The genealogy of this twist of events is both multifaceted and complex. Among philosophers, social theorists, and historians of science there has been a renewed emphasis on the significance of the local, the specific, the situated. Some philosophers thus argue that what passes as a good reason for believing a claim is different from time to time, and from place to place. Rationality, it turns out, is in large measure situation specific, such that what counts as rational is contingent on the context within which people are located.[1] Good grounds for holding a certain belief are evidently different for a twelfth-century milkmaid, a Renaissance alchemist, and a twentieth-century astrophysicist. Among social theorists there has also been a recovery of spatiality. The importance of the diverse locales within which social life is played out has assumed considerable significance with such writers as Clifford Geertz, Erving Goffman, and Anthony Giddens. In Geertz's telling, for example, law turns out not to be ecumenical but local knowledge – local in terms of place, time, class, issue, and what he terms "accent."[2] For Goffman, the situations facilitating human assemblages – gatherings, social occasions, informal encounters, and so on – furnish agents with those repertoires of structural meaning that they draw upon to constitute communication.[3] In Giddens's case it is because of the routinization of everyday life that he sees human agents as transacting their affairs in a variety of locales – settings of interaction which are themselves frequently zoned to facilitate routine social practices. As he puts it, "space is not an empty dimension along which social

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groupings become structured, but has to be considered in terms of its involvement in the constitution of systems of interaction."[4]

These writers certainly do not exhaust the range of sources contributing to this spatial resurgence. We might, for example, canvas the work of figures such as Michel Foucault and Edward Said, who deploy spatial categories for rather different purposes; but survey is not my intention here. Rather it is to alert us to an increasing acknowledgment of the spatial in cultural life – an awareness that is being increasingly recognized among historians of science.[5] Thus, attention has been called to the role of experimental space in the production of scientific knowledge, the significance of the uneven distribution of scientific information, the diffusion tracks along which scientific ideas and their associated instrumental gadgetry migrate, the management of laboratory space, the power relations exhibited in the transmission of scientific lore from specialist space to public place, the political geography and social topography of scientific subcultures, and the institutionalization and policing of the sites in which the reproduction of scientific cultures is effected. The cumulative effect of these investigations is to draw attention to the local, regional, and national features of science – an enterprise hitherto regarded as prototypically universal.

The implications of these recent moves for my present task are of considerable dimensions. My suspicion is that the project of reconstructing the historical relations between science and religion might similarly benefit from a localizing strategy that seeks to situate responses or encounters in their respective socio-spatial settings. To pursue such a program, I suggest, will inevitably mean abandoning grand narratives that trade in abstract and idealist "isms." It will not do to speak of *the* encounter between evangelicalism and evolutionism or Calvinism and Darwinism. Instead I think we will be better advised to seek to uncover how particular religious communities, in particular space-time settings, developed particular tactics for coping with particular evolutionary theses. Here I want to make a preliminary stab at elucidating the responses of certain conservative Christians to evolutionary claims in a number of different locales during the second half of the nineteenth century. If my argument is in the neighborhood of a correct analysis, the specifics of these situations turn out to be of crucial importance.

1874: Three statements

During 1874, in three different cities, Presbyterians with seriously similar theological commitments issued their judgments on the theories of evolution that were gaining ascendancy in the English-speaking intellectual world. In Edinburgh, Belfast, and Princeton, differing assessments

of the new biology were to be heard; in these different situations, varying rhetorical stances were adopted; for in these religious spaces, different circumstances prevailed.

In October of 1874 Robert Rainy, the new principal of New College, Edinburgh – the theological college of the Free Church – delivered his inaugural address. His subject was "Evolution and Theology" and, according to his biographer Simpson, it "attracted considerable attention." "The religious mind of the day," according to Simpson, "was disturbed about Darwinism and apprehensive lest it should affect the foundations of faith; and that a man of Dr. Rainy's known piety and orthodoxy should, from the Principal's chair of the New College, frankly accept the legitimacy of the application of evolution even to man's descent and find it a point on which the theologian 'may be perfectly at ease' reassured many minds."[6] Indeed, Rainy did make it clear that while some found evolution objectionable, he himself did not feel justified "in imputing an irreligious position to the Evolutionist." Accordingly, he insisted that even if "the evolution of all animal life in the world shall be shown to be due to the gradual action of permanent forces and properties of matter" – a claim he himself actually doubted – that would have no bearing on "the argument of the Theist [or on] the mind of a reverent spectator of nature."[7]

Methodologically, Rainy was prepared to allow considerable autonomy to the scientific enterprise, believing that it was "often in its right in keeping to its own path" irrespective of interpretations of scripture. But this certainly did not mean that Christians were never justified in "contesting the ground." To the contrary, evolution could be mobilized for infidel purposes; these simply had to be challenged. As an illustration, he referred to the atomic theory of Democritus – an example which, as we shall see, had a particular poignancy in the winter of 1874. And yet, for all that, Rainy was remarkably sanguine about evolutionary speculation, even to the extent of welcoming evolutionary interrogations of human development. Not that he ruled out divine intervention in human origins; he certainly insisted on "direct Divine interposition."[8] But by decorporealizing the *imago dei*, he found it possible to liberate Christian anthropology from detailed questions over similarities in the human and anthropoid skeletons. Thereby the door was opened to an evolutionary account of the human physical form.

That same winter in Belfast, J. L. Porter, professor of biblical criticism in the General Assembly's College (and later president of Queen's College), delivered the opening address to the Presbyterian faculty and students.[9] Here he ominously spoke of the "evil tendencies of recent scientific theories" – and that of evolution in particular – which threatened to "quench every virtuous thought." The need for theological colleges

was thus more urgent than ever, so that "heavenly light is preserved and cherished." What was more, he declared that he was "prepared to show that not a single scientific fact has ever been established" from which the pernicious dogmas of Huxley and Tyndall could be "logically deduced."[10] Within a few weeks, on the last day of November, Porter would pursue this same theme in an address on "Science and Revelation: Their Distinctive Provinces," which inaugurated a series of winter lectures on Science and Religion in Rosemary Street Church in downtown Belfast. The need for a clear-cut boundary line – both in terms of content and methodology – between the provinces of science and theology were of the utmost importance to Porter, and while he was happy to insist that "no theological dogma can annul a fact of science," the question of "crude theories and wild speculations" – in which evolutionists were all too prone to engage – was a different matter. As for Darwin himself, *The Origin of Species* was described as having made empirically "one of the most important contributions to modern science"; in logic, by contrast, it was "an utter failure." The facts, in other words, were welcome; the theory was alien. The problem was that the latter was utterly unsupported by the former. In sum, the book was "not scientific." Darwin was not to be substituted for Paley.[11] In the key Calvinist spaces of Belfast and Edinburgh, different attitudes to evolution theory were already being promulgated.

Earlier in May of that same year, Charles Hodge, arguably the most influential theologian at Princeton Theological Seminary during the first century of its existence, had published his last work, *What Is Darwinism?* It contained Hodge's considered treatment of the Darwinian theory and can appropriately be regarded an extended exercise in definition. Thereby Hodge believed its nature could be ascertained and the lineaments of an appropriate Christian response plotted. Because he was certain that Darwin's use of the word "natural" was "antithetical to supernatural," Hodge insisted that "in using the expression Natural Selection, Mr. Darwin intends to exclude design, or final causes." Here the very essence of the theory lay exposed. That "this natural selection is without design, being conducted by unintelligent physical causes," Hodge explained, was "by far the most important and only distinctive element of his theory." In a nutshell, the denial of design was the very "life and soul of his system" and the single feature that brought "it into conflict not only with Christianity, but with the fundamental principles of natural religion."[12] By this definitional move, Hodge could set the terms of the debate and adjudicate on who was or was not a Darwinian. It plainly meant that those such as Asa Gray who considered themselves Christian Darwinians were either mistaken or just plain mixed up; that label had no meaning. Thus for all his efforts to teleologize Darwinism,