A YANKEE AT OXFORD: JOHN WILLIAM DRAPER AT THE BRITISH
ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE AT
OXFORD, 30 JUNE 1860

by

JAMES C. UNGUREANU*

*Institute for Advanced Studies in the Humanities, Level 6, Forgan Smith Building,
University of Queensland, St Lucia, Queensland 4072, Australia*

This paper contributes to the revisionist historiography on the legendary encounter between Samuel Wilberforce and Thomas Henry Huxley at the 1860 meeting in Oxford of the British Association for the Advancement of Science. It discusses the contents of a series of letters written by John William Draper and his family reflecting on his experience at that meeting. The letters have recently been rediscovered and have been neither published nor examined at full length. After a preliminary discussion on the historiography of the Oxford debate, the paper discloses the contents of the letters and then assesses them in the light of other contemporary accounts. The letters offer a nuanced reinterpretation of the event that supports the growing move towards a revisionist account.

Keywords: John William Draper; Samuel Wilberforce; Thomas Henry Huxley; British Association for the Advancement of Science; conflict thesis

INTRODUCTION

John William Draper (1811–82), Professor of Chemistry and Physiology at New York University, is best known for his historical writing and social theorizing in *History of the Intellectual Development of Europe* (1863) and *History of the Conflict between Religion and Science* (1874). But he is also known, and most ignominiously, for being the ‘Yankee donkey’ at the British Association for the Advancement of Science meeting at Oxford in 1860. That meeting, of course, became legendary. According to the conventional view, Darwin’s ‘bulldog’, Thomas Henry Huxley (1825–95), and the Bishop of Oxford, Samuel Wilberforce (1805–73), clashed over Darwin’s theory of evolution. But that is not the whole story. While conducting research at the Library of Congress recently, I came across a remarkable and hitherto unexamined series of letters by Draper and his family. These letters offer an alternative perspective on the 1860 British Association meeting; it is one that is at the same time both similar to and strikingly different from the conventional view. Most significantly, the letters provide an additional nuance to a much discussed

*j.ungureanu@uq.edu.au

event in the history of the relationship between science and religion, and one that supports the growing move towards a more revisionist historiography.

THE HUXLEY–WILBERFORCE ‘DEBATE’

Before we address the letters themselves, and to appreciate their significance better, it is necessary to provide a sketch of the conventional view. Convening late in June, the British Association meeting was the first since the publication of Charles Darwin’s (1809–82) *On the Origin of Species* in the previous November. Early in the meeting Huxley had a minor row with the anatomist Richard Owen (1804–92) over the differences between humans and gorillas. Then, on Saturday, 30 June, at Section D (Zoology and Botany, including Physiology), Wilberforce denounced Darwin’s theory with ridicule, before declaring it to be at odds with the idea of biblical creation. In closing his speech, Wilberforce supposedly turned to Huxley and superciliously asked him if ‘it was through his grandfather or grandmother that he claimed descent from a monkey.’ This facetious remark delighted the audience, who roared with approval. Riled to indignation, Huxley turned to the venerable surgeon Sir Benjamin Brodie (1783–1862), who was seated next to him, and supposedly whispered, ‘The Lord hath delivered him into mine hands.’ Rising to his feet, Huxley is then said to have retorted: ‘If then, said I, the question is put to me would I rather have a miserable ape for a grandfather or a man highly endowed by nature and possessed of great means and influence and yet who employs these faculties for the mere purpose of introducing ridicule into a grave scientific discussion—I unhesitatingly affirm my preference for the ape.’ With this riposte, some members of the audience were agog, others aghast, and still others fainted. But it was supposedly this withering reply that turned the tables, bringing the house around to Huxley’s side. Huxley had put the haughty Bishop in his place, scored a point for truth-seeking science against obstinate religion, and thus had won the day.

CONSTRUCTING A LEGEND

Scholars have been aware for some time now that this legendary ‘debate’ was first formulated more than 20 years after the fact, in the 1880s and 1890s, and that it was largely constructed by Francis Darwin (1848–1925) and Leonard Huxley (1860–1933), sons of the master and the ‘bulldog’, in their respective *Life and Letters* volumes, based on the account given by T. H. Huxley himself.¹ In other words, the accounts that serve as the source for later references to the event are almost exclusively dependent on Huxley and his allies. The account appeared, not surprisingly, in Andrew Dickson White’s (1832–1918) *A History of the Warfare of Science with Theology in Christendom* in 1896. Huxley’s riposte, White claimed, was the ‘shot’ that ‘reverberated through England, and indeed through other countries.’² A still more popular rendering appeared a couple of years later in Isabel Sidgwick’s ‘A Grandmother’s Tales’, published in *Macmillan’s Magazine*.³

At the turn of the twentieth century, this version appeared often, in articles and books, in popular-science writing, in the media, and even in educational resources. William Tuckwell’s retelling, both amusing and dramatic, was published in his *Reminiscences of Oxford* in 1900.⁴ David Wilson in his ‘Huxley and Wilberforce at Oxford and elsewhere’,

published in the radical *Westminster Review* in 1907, gives an entirely satirical, irreverent and humorous account of the alleged debate, along with a ‘fanciful sequel’ in the afterlife.⁵ By mid-century, William Irvine, in his *Apes, angels, and Victorians*, published in 1955, continued to portray a victorious Huxley over a vanquished Wilberforce.⁶ A short article by Lynn A. Phelps and Edwin Cohen, ‘The Wilberforce–Huxley debate’, published in 1973, attempted to ‘reconstruct’ the debate—but their reconstruction was entirely conventional. They asserted that Huxley ‘destroyed’ Wilberforce’s credibility, and that his riposte ‘proved forensically fatal’.⁷ In 1978 the BBC aired a series entitled *The voyage of Charles Darwin*, which dramatized the Oxford debate, the account being taken entirely from Huxley’s *Life and Letters*. By the end of the century it was this rendering of events that continued to appear in encyclopedias and even introductory science textbooks.⁸

REASSESSING THE CONVENTIONAL VIEW

Although ‘no battle of the nineteenth century, save Waterloo, is better known’,⁹ by the 1970s historians of science were beginning to question the accuracy of the conventional view. For example, the Darwin scholar Gertrude Himmelfarb and the church historian Owen Chadwick both recognized that no full and objective contemporary account existed.¹⁰ Alvar Ellegård, in his important study on the reception of Darwinism, argued that the event was not widely covered in the periodical press, and the presses that did mention it did not give it the symbolic status it subsequently came to enjoy.¹¹ By the end of the 1970s, Janet Browne asserted that it was ‘fruitless to continue to reconstruct the Oxford meeting when the evidence cannot, at the moment, provide the answers, and the history of the transmission of even that evidence is ignored’.¹² J. R. Lucas, after surveying the primary sources, similarly concluded: ‘About what actually happened in Oxford on 30 June 1860 it tells us very little: but about currents of thought in the latter part of the century it tells us a lot.’¹³ Josef L. Altholz observed that the primary sources show ‘a considerable range of disagreement about the specifics of what actually happened.’¹⁴ The so-called ‘official version’, as Sheridan Gilley and Ann Loades both argue, does not stand up to scholarly scrutiny.¹⁵ J. Vernon Jensen sought to present a fuller and more ‘balanced view of the specific ingredients’ of the encounter, but he too concluded that ‘most of the versions that are available are from pro-Huxley observers, we have more of those, and they have built the story that Huxley and science experienced a significant victory.’¹⁶ In their magisterial study on Darwin, Adrian Desmond and James Moore argued that the debate was destined to be blown out of proportion.¹⁷ In his two-volume study on Huxley, Desmond, although following the standard account perhaps too closely, does admit that no one could remember the precise wording of Wilberforce’s taunt.¹⁸ Even the evolutionary biologist and science popularizer Stephen Jay Gould doubted the conventional view, calling it too ‘pat’.¹⁹

At the beginning of the twenty-first century, Keith Stewart Thomson strongly emphasized the hypothetical nature of the debate.²⁰ Similarly, the historian of science John Hedley Brooke provocatively claimed that the alleged debate ‘is the kind of story that would have to be invented were it not true.’ Indeed, he continued, ‘it probably was invented—at least in part.’²¹ Perhaps the most comprehensive studies appeared at the turn of the decade. Frank A. J.-L. James, after carefully surveying nearly all of the available evidence, demonstrated that the incident had clearly taken on iconic or mythic significance by the end of the nineteenth century. Supporters of Darwin and Huxley had retrospectively

reconstructed the events at Oxford as an ‘open clash between Science and the Church’, contending that the ‘importance of the Oxford meeting lay in the open resistance that was made to authority.’ The standard account, then, was a ‘construction of the specific interests of the protagonists who, using very limited evidence from a discussion decades earlier, were able to construct a myth about the relations of science and religious belief that has become every bit as powerful as the dispute between Galileo and the Church in the early seventeenth century.’²² In his short and lucid book, Ian Hesketh offered the widest context yet, tracing the life, work and views of the *dramatis personae*, in addition to offering a detailed overview of the available evidence, in periodicals and private correspondence. Following others, Hesketh declared ‘the Oxford debate is as much myth as it is reality’, its subsequent echoes the product of ‘historical spin doctoring’. He positioned the Oxford debate as a rivalry between two different generations, in addition to ‘personal struggles and jealousies that had little to do with the big picture of science and religion.’ It must be seen, in short, as the ‘Galileo affair of the nineteenth century’.²³ In attempting to reach a much wider readership, David N. Livingstone’s contribution to Ronald Numbers’s *Galileo goes to jail* makes the point that ‘it is impossible to know exactly what went on in the Oxford Natural History Museum that summer day, and much of the story as it has come down to us is a fabrication.’ What the evidence does reveal, he says, is that the dispute—whatever else it was—was a ‘rhetorical event’, intimately connected ‘between location and locution in scientific communication.’²⁴ Finally, in a recent article, Nanna Katrine Lüders Kaalund has argued that the conventional view of the Wilberforce–Huxley debate was not the one most commonly reported in the periodical press immediately after the event. Reports were either neutral or anti-Darwinian, and thus most sided with Wilberforce. More importantly, whereas previous scholarship claimed that the encounter was poorly reported at the time, Kaalund has unearthed, using the ‘electronic harvest’ in recent years, additional sources that provide greater coverage of the 1860 British Association meeting than was previously thought available.²⁵ In sum, the general consensus among modern scholars is that the conventional view is as tendentious as it is tenuous.

A YANKEE DONKEY AT OXFORD

Although revisionist historiography has modified the legacy of that encounter, the same cannot be said for Draper. Indeed, in the aftermath of that historic day it was Draper, not Wilberforce, whose legacy had been irreparably tarnished. Invited to the British Association meeting on 21 March 1860 by Henry J. S. Smith (1826–83), Secretary to the Local Committee of the British Association,²⁶ Draper was billed to deliver the principal paper for Section D. The paper had initially been entitled ‘On the Possibility of Determining the Law of the Intellectual Development of Europe’, but Draper had at some point emended it to fit the occasion, changing the title to ‘The Intellectual Development of Europe (considered with reference to the views of Mr. Darwin and others) that the Progression of Organisms is Determined by Law’.²⁷ This paper was actually an ‘abstract’ of Draper’s forthcoming book, published in 1863.²⁸ At the British Association meeting Draper argued that the advancement of ‘man in civilization does not occur accidentally or in a fortuitous manner, but is determined by immutable law.’²⁹ Private recollections, however, took a dim view of Draper and his paper. Indeed, several witnesses made dismissive and disparaging remarks about Draper in private letters, and these have been

repeated by almost every writer on the topic since then—including the revisionist scholars outlined above. The historian John Richard Green (1837–83), for example, had complained about Draper's 'hour and [a] half of nasal Yankeeism'.³⁰ Perhaps even more caustic, the botanist Joseph Dalton Hooker (1817–1911), an ally of Darwin's, grumbled that 'a paper of a yankee donkey called Draper . . . did not mend my temper; for of all the flatulent stuff and all the self sufficient stuffers—these were the greatest, it was all pie of Herbert Spencer and [Thomas Henry] Buckle without the seasoning of either.'³¹ Draper was further lampooned in Sidgwick's 'A Grandmother's Tales', in which she recalled, 'I can still hear the American accents of Dr. Draper's opening address, when he asked, 'Air we a fortuitous [sic] concourse of atoms?''³² The consensus seemed to be that Draper had 'droned out his paper, turning first to the right hand and then to the left.'³³

ANOTHER RETELLING

But what did Draper himself make of the event? Curiously, he did not mention it at all in his *Intellectual Development*, nor in his *History of the Conflict*. That he would omit such a key episode in the conflict between science and religion, and one that he was so personally involved in, is remarkable. He did not even mention it in a defence of evolutionary theory (although more Spencerian than Darwinian) given in a speech to a Unitarian congregation in 1877.³⁴ His early biographer, the American physician George F. Barker (1835–1910), ignored it completely,³⁵ as did other contemporary biographers and obituarists.³⁶ His modern biographer, the historian of science Donald Fleming, devoted a chapter to the event, but, like so many others writing about the debate, he relied entirely on the portrayals by Leonard and Francis.³⁷

However, Draper did indeed have his own story to tell, and his recounting of the 1860 British Association meeting is remarkable for its similarity to and its disparity with the conventional view. Why so many scholars have overlooked these letters has its own complex history. According to Fleming, when he was conducting research for Draper's biography in the 1940s, Antonia C. Maury and Dorothy Draper Nye, Draper's granddaughters, withheld the 1860 letters from public viewing.³⁸ Although this is perhaps the most obvious hindrance, another possible reason that scholars have missed these important letters is that Draper had written them with his wife, Antonia Caetana de Paiva Pereira Gardner (1814–70), and daughter, Virginia Draper (1839–85), who had accompanied him on his 1860 trip to England and Europe. Thus when the majority of Draper's papers were donated to the Library of Congress in the 1970s by his great-grandson Daniel C. Draper (1920–2012), congressional archivists had placed the letters in a box marked 'Dorothy Catherine Draper', after Draper's sister, their main recipient.³⁹ As a consequence, these letters have been neither published nor examined *in extenso*. Having relocated these letters, I disclose their contents with the intention of shedding new light on the Wilberforce–Huxley debate.

THE LETTERS

The letters begin with John, Antonia and their eldest daughter, Virginia, aboard a ship on 11 June 1860, nearing the end of their voyage to England. 'Though the sea has not been

until now very rough you will be pleased and surprised to know that thus far I have not been at all sick', Draper addresses 'Aunty' Catherine, his sons and his daughter back home.⁴⁰ He goes on to discuss the rough seas, sick passengers, and some observations he had made of an iceberg. The hand then changes in the letter to Virginia's. She writes, 'I must say that I am sorry that our pleasant voyage is almost at an end for though I have felt a little sick one or two mornings yet altogether I have enjoyed myself very much.' Virginia was apparently quite the *bon vivant*. She describes conversing with some of the passengers, particularly the Englishmen, finding them 'very ready for a nice flirtation'. She boasts that a 'handsome merchant fell in love with me but he was too forward', and another had given her 'a pretty pressed flower as a remembrance'. On the following page the hand again changes, this time to Antonia's. She thanks Catherine for the gift of a shawl and gloves, mentions Virginia's English flirt, praises a sermon read by the ship's captain, and complains about the laziness of the on-board bishop.⁴¹

By 17 June they had finally reached England. Draper tells the family that he had finalized arrangements for the reading of his paper and reports that 'they have given me the best hour of the whole time if I can only keep it. But it is with many misgivings as to success, for I have to go into the Zoological and Botanical Section with it as being the most popular here.' Virginia talks about walking with 'Pa' to Buckingham Palace. 'I can't imagine', she quips, 'what the old lady [Queen Victoria] does with all the rooms in it.' Antonia once again concludes the letter, telling Catherine about shopping in London and the latest fashion trends, including the small bonnets and the fancy hats that all the girls were wearing.⁴²

Virginia Draper

As interesting as these glimpses of Victorian life are, it is the next letter in the collection, coming soon after the events of the British Association meeting, that bears the most importance. In the first part of the letter, dated 6 July (Appendix 1), almost a week after the supposed debate between Wilberforce and Huxley, Virginia writes to Aunty Catherine and her siblings that father's lecture took place on Saturday, 30 June, at 12 o'clock, in the new museum of Natural History at Oxford University. It was held in a 'beautiful room', she says, and one that reminded her of pictures of the Alhambra in Spain, perhaps something she knew intimately from her mother, who was the daughter of Dr Daniel Gardner, the attending physician to King John VI of Brazil and Portugal (1767–1826) and Charlotte of Spain (1775–1830). However, this day the room was 'crowded to suffocation', and, as a result, 'one lady had to be carried out.' She also noted that all the 'chief scientific people' were present, and that after her father had finished his paper the 'Lord Bishop of Oxford' spoke, commentating specifically on Draper's paper. She then relates how in the evening they had attended a party held by the Oxford Professor of Botany, Charles Giles Bridle Daubeney (1795–1867), at the Botanic Gardens at the University of Oxford, where they were introduced to 'several distinguished persons'. On the following day they attended St Mary's church and heard a sermon by Broad Churchman Frederick Temple (1821–1902), which, she says, 'surprised us very much'. The letter continues to relate that, as they were leaving the church, they came across Scottish natural philosopher and editor of the *Edinburgh Encyclopaedia* Sir David Brewster (1781–1868), who, as she puts it, had been 'very kind to us', even extending an invitation to visit his home in Scotland. The Drapers were apparently quite popular among the Scots. The Scottish naturalist Sir William Jardine (1800–74) had also invited

them to Scotland, as did Robert Chambers (1802–71), editor of the popular *Chambers's Edinburgh Journal* and the anonymous author of the sensational evolutionary work *Vestiges of the Natural History of Creation* (1844).⁴³ On the following morning they were invited to breakfast at Daubeny's but were late because 'Mother was lazy and would not get up to go.' The remainder of the letter reports general sightseeing activities, including visits to the Coliseum and the Diorama theatre in Regent's Park, and James Wyld's (1812–87) Great Globe in Leicester Square.⁴⁴

John William Draper

Turning the page we come to Draper's own account of the events (Appendix 2). He begins by declaring proudly, but not boastfully, 'I have accomplished very thoroughly all that I came here for.' He says that his paper was originally down for the Monday slot, but it seems to have been changed rather hastily to Saturday morning. The section committee was apparently expecting such a large audience that additional carpenters were hired to fit the room with extra 'benches seats & other conveniences'. According to Draper, the audience was massive, 'the room being filled perfectly full'. After some preliminary matters he began his paper, which lasted a 'full hour in the reading'. Despite its length, he was very pleased with the reaction of the audience, saying, 'I was listened to with the profoundest attention', notwithstanding the poor acoustics. As soon as he finished, a clergyman had protested the use of physical laws on the intellectual progress of man; but, according to Draper, 'he made no sort of impression.' Then the Bishop of Oxford arose, who, Draper admits, was not only a 'very fine speaker' but also quite congenial, despite his criticisms. The discussion lasted more than two hours. Ultimately, Draper believed he was treated with the greatest kindness by the British Association. He writes: 'They gave me the best day and the best hour and the best room and the best audience.' Indeed, Brewster later told him he regretted missing his talk. Chambers came up to him afterwards and congratulated him on its 'strength'. Returning to London, others continued to tell him 'we have all been hearing about what you did at Oxford, it is talked about very much here in London.' More encouraging still, Draper writes, is the letter he received from Edwin Lankester (1814–74), editor of the *Athenaeum*, asking him for an abstract of the paper to print in his journal. He concludes the letter with a self-congratulatory note: 'I cannot now tell you all that has taken place but I may truly say that I [have] never undertaken anything before which so thoroughly succeeded.'⁴⁵

ASSESSING THE DRAPER LETTERS

One of the most remarkable features of these letters is the conspicuous *absence* of Huxley. Whereas later recollections placed Huxley at the centre of the debate, neither Virginia nor Draper mention him at all. Of course, as revisionist historians have demonstrated, Huxley's exact role at the event is disputed. Indeed, many have argued that Hooker was the more effective defender of evolutionary theory that day—including Hooker himself.⁴⁶ But even if the precise nature of Huxley's contribution is uncertain, there are still many sources, particularly in early press reports, that include him in the debate.⁴⁷ But why would the Drapers exclude him entirely? The reasons are surprisingly difficult to determine. It may be suggested, for instance, that after a week full of sightseeing

activities, the immediacy of the debate had faded. However, as Draper points out in his letter, once they had returned to London on Thursday, 5 July, the day before he penned his letter, people were still talking about the event. If he had forgotten the details, he seemed to have been immediately reminded.

Another suggestion is that perhaps both Virginia and Draper were simply unaware of Huxley. In Virginia's case that seems very likely. After all, she was a young lady in a profession dominated by gentlemen. Can we expect her to know who the major players were? At the same time, she did know of Brewster, Daubeny, Chambers, Trevelyan, Jardine and others. Was Huxley not in fact part of the 'chief scientific people' she alludes to? More interesting still is the revelation that the Drapers attended Daubeny's gathering later in the evening, as did many other members of the association, including Huxley.⁴⁸ Yet again, there is no mention of Huxley among the several 'distinguished persons' they mingled with.

But what about Draper? Why would Draper exclude Huxley from his account? Is it possible that Huxley was unknown to him? That seems unlikely. By the mid 1850s Huxley had finally made a name for himself in London, and by the end of the decade became known for his bellicose style in his Croonian lectures at the Royal Society.⁴⁹ Further, after emigrating to America in 1832, Draper seems to have deeply coveted the scientific scene in England.⁵⁰ In his *Scientific Memoirs* (1878), for instance, he had gathered a collection of previously published articles on his experimental researches in radiation from the last 40 years, and in these articles Draper demonstrates a close and consistent reading of the British Association reports.⁵¹ Staying abreast of scientific developments in England, he would have undoubtedly encountered Huxley's name. What is more, Huxley, after all, was one of the Vice-Presidents of the Physiology Section that year at the British Association.⁵² Is it possible that Draper, who was billed to deliver a paper in that section, would not have heard of Huxley from the moment he arrived in London on 17 June to the day he gave his address on 30 June?⁵³

One other reason why the Drapers might have neglected to mention Huxley is that their correspondents would not have been interested in the details of the event. But Aunt Catherine was very much part of Draper's scientific life. She shared his taste for scientific pursuits, funded his medical education and was the first person he photographed using the daguerreotype.⁵⁴ Draper's sons John Christopher, Henry and Daniel were in their early twenties and very much part of the scientific scene back home. Indeed, by 1860 John Christopher was already a professor of natural sciences at New York University, Henry a physician at Bellevue Hospital in New York, and Daniel his father's amanuensis in the preparation of his *History of the Intellectual Development of Europe* and his *History of the American Civil War*.⁵⁵ Additionally, Henry, being something of an amateur astronomer, had written a paper, 'On a Reflecting Telescope for Celestial Photography, erecting at Hastings, near New York', for the British Association meeting that year, which his father had presented in his place at the Physical Section on Sunday.⁵⁶ In short, Draper's correspondents were likely to have taken an interest in the debate, had there been one.

Is it more likely, then, that they simply could not hear Huxley? After all, Wilberforce's taunt had supposedly caused an uproar, and the room, as Draper and others point out, had poor acoustics. But this possibility is partly based on the assumption that Wilberforce did in fact taunt Huxley, an assumption that has been questioned by recent studies. Whatever the case, the Drapers were again likely to have heard about Huxley's contribution from others, especially Daubeny and Chambers, or in some of the early press reports.

The most likely scenario is that as in Hooker's and Huxley's respective accounts, Draper and his daughter may have been exaggerating the significance of his own contribution. But that is not entirely clear either. Wilberforce had criticized Draper's paper, but neither letter mentions Draper defending himself—or giving any response at all, for that matter. If Draper did offer a rebuttal, it clearly made no impression. Indeed, some of the earliest press reports fail to mention Draper's presence entirely.⁵⁷ What is abundantly clear is that by excluding Huxley completely from their account, the Drapers tell a story that conflicts with most other personal recollections and early press reports.

We do, however, find some agreement with other sources. Both Virginia and Draper mention just how crowded the room in the museum really was that day. Despite the section committee's hasty rearrangement of the venue and day, as other eyewitnesses confirm,⁵⁸ this did not prevent the room from 'being filled perfectly full' when the day came. Indeed, some presses reported that Draper's paper attracted an 'immense audience',⁵⁹ others putting the number between 400 and 1000.⁶⁰ It was for this reason, according to Virginia, that a 'lady had to be carried out', thus contravening later accounts that it was due to Huxley's cutting repartee.⁶¹ But she does not identify this person as Jane Kirk Purnell, or 'Lady Brewster', as Hooker does in his letter of 2 July 1860 to Darwin.⁶² It is, however, unlikely that she would have missed this connection, because it seems that the Drapers were already acquainted with her husband, Sir David Brewster, who had, incidentally, not only shown them kindness but even encouraged them to visit his home in Scotland. But why would later accounts place Lady Brewster in this narrative? When this part of the narrative developed and why remains a mystery.

Draper also mentions that there were some 'preliminary matters' before he presented, and this too adheres to other reports.⁶³ Interestingly enough, in his letter to Darwin, Hooker had said that Huxley 'could not throw his voice over so large an assembly, nor command the audience',⁶⁴ and perhaps this was due, in part, to the room's poor acoustics, because Draper himself thought 'the arches of the room were very unfavorable.' There also seems to be agreement about the initial response to the paper. 'As soon as I had done', Draper writes, 'a clergyman rose, his name I do not know and entered his protest.' This was evidently the Rev. Richard Cresswell, who 'denied that any parallel could be drawn between the intellectual progress of man and the physical development of the lower animals.'⁶⁵

Although Huxley is conspicuously absent from both accounts, Wilberforce's *presence* is undeniable. All early sources and later recollections confirm this fact. Indeed, the audience was as large as it was because they heard rumours that Wilberforce would 'smash Darwin'.⁶⁶ Yet Virginia and Draper do not portray the Bishop of Oxford as the intransigent opponent of science, nor even as the voice behind the cavalier and flippant remarks, as other sources do. Indeed, they simply relate that he commented and spoke against one aspect of the paper. This is remarkable coming from the man later alleged to be the co-founder of the 'conflict thesis'. Why would Draper neglect to list this key episode in the conflict between science and religion? Indeed, such an omission seems completely out of character. Scholars, however, now recognize that Wilberforce was not as scientifically illiterate as once believed, and his case against Darwinism was made primarily on current scientific and philosophical, not religious, grounds.⁶⁷ In reality, the religious response was not uniform, and some of the staunchest supporters of Darwin's theory turned out to be people who today would be loosely labelled 'orthodox'.⁶⁸ Finally, the fact that Virginia and Draper only mention Wilberforce seems to indicate, as many scholars have suggested, that the confrontation

was an impromptu exchange, or, perhaps, even a *private* discussion. Some early press reports do in fact pit Wilberforce and Huxley against each other—but again, this may have occurred after formal deliberations.

That they attended, and seemed pleasantly surprised, by Temple's sermon is also noteworthy. In this sermon, Temple argued that science has discovered universal laws in nature, and that any 'change in science necessitates a change in its relation to faith.' Thus he called on his listeners to 'look for the finger of God' in those laws. A 'reverent study of His works', he concludes, 'can and will bring us nearer in temper to their Divine Author.'⁶⁹ What Temple meant by 'universal laws' was the popular doctrine of the 'absolute uniformity' of nature, shared by both theists and naturalists at the time.⁷⁰ Indeed, Draper's own thought was infused with the notion of nature as an unbroken system of laws. His paper at the British Association had applied this notion of law to the development of civilization. Such a sermon would surely therefore have made an impact on the man later alleged to be the co-founder of the 'conflict thesis'.

We may conclude by noting perhaps the most striking difference between Draper's account and others: Draper believed his talk to have been well received. He believed that the audience was totally absorbed in his speech—indeed, that he had been listened to with the 'profoundest attention'. It is likely that Draper had this impression because people such as Brewster, Chambers and Lankester congratulated him on his speech. What is more, on 12 July Draper had written to his sons to tell them that Daubeny had referred him to 'several newspaper people' who agreed to make his speech 'a little stronger' and subsequently publish a summary of it in their papers. He was especially excited to announce that the *Spectator* promised to print a review. He must have been thoroughly pleased to read that the editor found his address to be a 'highly interesting and ingenious paper'.⁷¹

But it is also likely, as Fleming aptly pointed out, that 'Draper now had his revenge for years of comparative neglect by European scientists.'⁷² Draper was hungry for recognition, and desperately wanted to be a part of the scientific scene in England. He wrote to his sons on 12 July that 'most of the time since we got back to London, has been wasted on sight seeing.' He would rather have spent the time, he says, at the Kew Observatory. But with time running out, Draper tells his sons that 'before we go, I shall try to see Sir [John] Herschel, Dr. [William Benjamin] Carpenter, [Lionel Smith] Beale, and about half a dozen others.' 'The amount of time wasted in going from place to place in London', he bemoans in conclusion, 'was so great that when one comes to examine what has been accomplished it looks little indeed.'⁷³

CONCLUSION

The rediscovery of these letters in the John William Draper Family Papers has revealed an additional nuance to the British Association meeting at Oxford in 1860—and perhaps more questions worth pursuing. One of the central problems of the traditional historiography of that meeting was that it relied almost exclusively on a few eyewitness accounts, given decades later, and by partisan writers. Once historians began looking at accounts in the periodical press, as well as taking seriously less-well-known eyewitness accounts, our understanding of the event underwent dramatic revisions. The relocated Draper letters offer us a new and overlooked perspective of the meeting, one that at once supports and

contravenes the conventional view. These letters thus corroborate the growing shift towards a more revisionist account of the 1860 Oxford meeting. Had the meeting occurred the way in which the traditional historiography holds, it seems remarkable that Draper would have excluded this key episode in the alleged history of the conflict between science and religion.

ACKNOWLEDGEMENTS

I wish to thank the Manuscript Division at the Library of Congress for permission to reproduce and quote material from the John William Draper Family Papers. For their insightful and constructive comments on earlier drafts of this essay, I would like especially to express my sincere gratitude to Peter Harrison and Ian Hesketh from the Institute for Advanced Studies in the Humanities, and to Tom Aechtner from the School of Historical and Philosophical Inquiry at the University of Queensland. I also wish to thank the three anonymous referees of this journal for their valuable and incisive commentary.

APPENDIX 1. VIRGINIA DRAPER TO FAMILY

Patterson Place, London, July 6th, 1860

My dear Brothers [,] Aunty and Sisters

I think I left off in our last letter with what we did on Thursday. The new museum in which the soirée was given is a beautiful building, the interior looks like one of the pictures we have of the Alhambra [,] The next morning (Saturday) we went to the library of the museum where Father was to give a lecture at twelve o'clock [,] it is a beautiful room and was crowded to suffocation [,] one lady had to be carried out, we saw all the chief scientific people there, heard the Lord Bishop of Oxford speak, he noticed particularly that part of lecture which you like remember about the marble.⁷⁴ In the evening we were invited to a large party at Dr. [Charles] Daubeny's to which we went. I was dressed in my new purple flower silk which I had made in London which was greatly admired. There was a tent in the botanical garden and the gardens themselves open but notwithstanding that there was a great crush. In allusion to the gardens some of the people called the party 'Professor Daubeny's Squash' [,] we were introduced there to several distinguished persons and others introduced themselves. On Sunday morning, we walked to St Mary's Church along with Sir Walter Trevelyan and his lady and heard a sermon by the Rev Dr Temple which surprised us very much and of which I write tell you more subsequently. In coming out of the church Sir David Brewster who has been very kind to us, and invited us to visit them in Scotland; introduced us to Sir Edward Belcher the celebrated Arctic navigator. On Monday morning we made a great mistake being invited to Dr Daubeny's to breakfast. Mother was lazy and would not get up to go and Father found when he got there that they were greatly disappointed. [...] Next day we went to breakfast at Dr [John] Price's and from there to a visit to Blenheim which is about eight miles from Oxford [,] it is a palace given by the English to the Duke of Marlborough [...] I cannot tell you of all the beautiful things I saw [...] We also saw in Oxford the celebrated Cartoons of Angelo and Raffaello [,] they are truly beautiful. I forgot to tell you that Sir William Jardine and his lady have also invited us to go to Scotland to spend some time with them as likewise Mr Chambers who introduced himself and his wife to us.

He is reported to be, as you know, the author of the *Vestiges of Creation*. We left Oxford on Thursday morning and are now housing at the address from this letter, it is close by Mr [Alexander Robert Charles] Dallas' house [...] We have just come in from sight seeing to day. We have been to the Coliseum [,] the Great Globe and the Diorama [theatre].⁷⁵

APPENDIX 2. JOHN WILLIAM DRAPER TO FAMILY

Patterson Place, London, July 6th, 1860

Dear Aunty and Children,

I have accomplished very thoroughly all that I came here for. In my last I told you that my paper was first down for Monday but it turned out differently. On Saturday morning I found that some good friend, I don't know who [,] had very effectively excited himself. The paper was changed for that day and appointed to be read in the museum which is a beautiful room. The Physiology Section adjourned to hear it 'as a mark of the greatest respect in their power to offer to me.' There was a notice put up on the front door saying that the reading would take place at 12 o'clock [,] A great many carpenters were employed in getting the library ready and benches seats & and other conveniences were being carried up. There was a very great audience, the room being filled perfectly full. After some preliminary matters I commenced and though very many had to stand and the paper occupied a full hour in the reading I was listened to with the profoundest attention, no one went out indeed no one stirred. It was to me very gratifying indeed. I made myself heard I think though the arches of the room were very unfavorable. As soon as I had done a clergyman rose, his name I do not know and entered his protest against the application of physical doctrines in the case of man but he made no sort of impression. Then the Bishop of Oxford who is a very fine speaker rose to make some remarks on 'the very ingenious communication they had just listened to' and on the Darwinian theory. He criticized what I had said about the marble resting on the table and also about the impossibility of intellectually elevating men except by changing their physical conditions. We did not adjourn [till] late past three and it was impossible for the British association to have treated me more courteously. They gave me the best day and the best hour and the best room and the best audience. Of course I have been anxious to learn what was the effects. Sir David Brewster told me that he deeply regretted he had been held in the Physical Section [,] he had heard so much of the discoursing since. Mr Chambers spontaneously introduced himself on the strength of it, it is he who is said to be the author of the *Vestiges of Creation* [,] and so in like manner have a great many other learned persons. I went to day to Mr [Alexander Robert Charles] Dallas to deliver Prof. [Alexander Dallas] Bache's letter and as soon as I had mentioned my name the secretary to whom I spoke said 'Oh we have all been hearing about what you did at Oxford, it is talked about very much here in London.' But what perhaps is more to the point, I received a letter from the editor of the *Athenaeum* Dr. Lankester asking me to give an abstract of that paper for his journal in three or four pages and this you may be sure I very promptly did. I cannot now tell you all that has taken place but I may truly say that I [have] never undertaken anything before which so thoroughly succeeded. And you must remember that in reality the time & place very unsuitable and myself very much depressed with that fact. It was a success however in spite of all that.⁷⁶

NOTES

- 1 Francis Darwin, *The Life and Letters of Charles Darwin, including an autobiographical chapter* (3 volumes) (John Murray, London, 1887), esp. vol. 2, pp. 320–325; *idem*, *Charles Darwin: his life told in an autobiographical chapter, and in a selected series of his published letters* (John Murray, London, 1892), esp. pp. 236–241; Leonard Huxley, *Life and Letters of Thomas Henry Huxley* (2 volumes) (D. Appleton & Co., New York, 1901 [1900]), esp. vol. 1, pp. 192–204. This version of events was also reinforced in Huxley's *Life and Letters of Sir Joseph Dalton Hooker* (John Murray, London, 1918), esp. vol. 1, pp. 520–527, and vol. 2, pp. 300–304.
- 2 Andrew Dickson White, *A History of the Warfare of Science with Theology in Christendom* (2 volumes) (Macmillan & Co., London, 1897), vol. 1, p. 71.
- 3 Isabel Sidgwick, 'A Grandmother's Tales', *Macmillan Mag.*, **78** (October), 425–435 (1898).
- 4 William Tuckwell, *Reminiscences of Oxford* (Cassell & Co., London, 1900), pp. 50–54.
- 5 David Wilson, 'Huxley and Wilberforce at Oxford and elsewhere', *Westminster Rev.* **167** (March), 311–316 (1907).
- 6 William Irvine, *Apes, angels, and Victorians: the story of Darwin, Huxley, and evolution* (McGraw-Hill Book Co., New York, 1955), pp. 3–8.
- 7 Lynn A. Phelps and Edwin Cohen, 'The Wilberforce–Huxley debate', *Western Speech* **37**, 56–64 (1973).
- 8 For encyclopedias see, for example, C. Bibby, s.v. 'Thomas Henry Huxley', in *Encyclopedia Britannica*, vol. 6, pp. 178–179 (Encyclopedia Britannica, Chicago, 1985); Adrian J. Desmond, s.v. 'Thomas Henry Huxley', in *Encyclopædia Britannica Online* (<http://www.britannica.com/biography/Thomas-Henry-Huxley>, accessed 5 September 2015). For textbooks see, for example, J. J. W. Baker and G. E. Allen, *A course in biology*, 3rd edition (Addison-Wesley, Reading, MA, 1979), p. 459; J. F. Case, *Biology*, 2nd edition (Macmillan, New York, 1979), p. 290; and, most recently, H. James Birx, *21st century anthropology: a reference handbook* (Sage, Los Angeles, CA, 2010), p. 596—cited in Thomas Aechtner, 'Galileo still goes to jail: conflict model persistence within introductory anthropology materials', *Zygon* **50**, 209–226 (2015).
- 9 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 University Press, 1979), p. 60.
- 10 Gertrude Himmelfarb, *Darwin and the Darwinian revolution* (Elephant Paperback, Chicago, 1996 [1959]), p. 292; Owen Chadwick, *The Victorian church* (2 volumes) (Adam & Charles Black, London, 1970–72), vol. 2, pp. 10–11.
- 11 Alvar Ellegård, *Darwin and the general reader: the reception of Darwin's theory of evolution in the British periodical press, 1859–1872* (University of Chicago Press, 1990 [1958]), esp. pp. 62–69.
- 12 Janet Browne, 'The Charles Darwin – Joseph Hooker correspondence: an analysis of manuscript resources and their use in biography', *J. Soc. Bibliogr. Nat. Hist.* **8**, 351–366 (1978).
- 13 J. R. Lucas, 'Wilberforce and Huxley: a legendary encounter', *Hist. J.* **22**, 313–330 (1979).
- 14 Josef L. Altholz, 'The Huxley–Wilberforce debate revisited', *J. Hist. Medi.* **35**, 313–316 (1980).
- 15 See Sheridan Gilley, 'The Huxley–Wilberforce debate: a reconstruction', in *Religion and Humanism: papers read at the eighteenth summer meeting and the nineteenth winter meeting of the Ecclesiastical History Society* (ed. Keith Robbins), pp. 325–340 (Blackwell, Oxford, 1981); and Sheridan Gilley and Ann Loades, 'Thomas Henry Huxley: the war between science and religion', *J. Relig.* **61**, 285–308 (1981).
- 16 J. Vernon Jensen, 'Return to the Wilberforce–Huxley debate', *Br. J. Hist. Sci.* **21**, 161–179 (1988).
- 17 Adrian Desmond and James Moore, *Darwin* (Michael Joseph Ltd, London, 1991), p. 492.

- 18 Adrian Desmond, *Huxley: the devil's disciple* (Michael Joseph Ltd, London, 1994), vol. 1, p. 278.
- 19 Stephen Jay Gould, 'Knight takes bishop?', *Nat. Hist.* **95** (May), 18–33 (1986); reprinted in *Bully for brontosaurus: reflections in natural history* (Norton, New York, 1991), pp. 385–401.
- 20 Keith Stewart Thomson, 'Marginalia: Huxley, Wilberforce and the Oxford Museum', *Am. Scient.* **88**, 210–213 (2000).
- 21 John Hedley Brooke, 'The Wilberforce–Huxley debate: why did it happen?', *Science & Christian Belief* **13**, 127–141 (2001).
- 22 Frank A. J. L. James, 'An "open clash between science and the church"?: Wilberforce, Huxley and Hooker on Darwin at the British Association, Oxford 1860', in *Science and beliefs: from natural philosophy to natural science, 1700–1900* (ed. David M. Knight and Matthew D. Eddy), pp. 171–193 (Ashgate, Aldershot, 2005).
- 23 Ian Hesketh, *Of apes and ancestors: evolution, Christianity, and the Oxford debate* (University of Toronto Press, 2009).
- 24 David N. Livingstone, 'Myth 17: that Huxley defeated Wilberforce in their debate over evolution and religion', in *Galileo goes to jail and other myths about science and religion* (ed. Ronald L. Numbers), pp. 152–160 (Harvard University Press, Cambridge, MA, 2009).
- 25 Nanna Katrine Lüders Kaalund, 'Oxford serialized: revisiting the Huxley–Wilberforce debate through the periodical press', *Hist. Sci.* **52**, 429–453 (2014). I borrow the phrase from James Secord, 'Essay review: the electronic harvest', *Br. J. Hist. Sci.* **38**, 463–467 (2005).
- 26 Henry J. S. Smith to John William Draper, 21 March 1860, container 7, John William Draper Family Papers, Library of Congress, Washington DC (hereafter Draper Family Papers).
- 27 The John William Draper Family Papers at the Library of Congress contain two manuscripts of the Oxford paper, one in Draper's hand and an earlier copy in another hand. The earlier copy with the original title is dated 31 May 1860 on the first page and 1 June 1860 on the last, perhaps indicating when the paper was completed. The emended copy, with the new title, had the original title crossed out. See container 8, Draper Family Papers.
- 28 Draper himself makes this claim in his *A History of the Intellectual Development of Europe* (Harper & Brothers, New York, 1863), p. v.
- 29 See, for example, reports in *Athenaeum* (14 July), 64 (1860); *Spectator* (28 July), 719 (1860); and *Report of the Thirtieth Meeting of the British Association for the Advancement of Science; Held at Oxford in June and July 1860*, pp. 115–116.
- 30 J. R. Green to W. B. Dawkins, 3 July 1860, in *Letters of John Richard Green* (ed. Leslie Stephen), p. 44 (Macmillan & Co., London, 1902).
- 31 Huxley, *Life and Letters of Sir Joseph Dalton Hooker*, *op. cit.* (note 1), vol. 1, pp. 525–526.
- 32 Sidgwick, *op. cit.* (note 3), p. 433.
- 33 Huxley, *Life and Letters of Thomas Henry Huxley*, *op. cit.* (note 1), vol. 1, p. 196.
- 34 'Dr. Draper's Lecture on Evolution: Its Origin, Progress, and Consequences', *Pop. Sci. Mthly* **12** (December), 175–192 (1877).
- 35 George F. Barker, *Memoir of John William Draper, 1811–1882: Read Before the National Academy, April 21, 1886* (National Academy of Sciences, Washington, 1886).
- 36 See, for example, 'Sketch of Dr. J. W. Draper', *Pop. Sci. Mthly* **4** (January), 361–367 (1874); 'John William Draper', *Daily Graphic* (13 December), 285 (1877); 'John William Draper', *Sci. Am.* **37** (15 December), 378 (1877); 'Professor J. W. Draper, M.D., LL.D.', *Univ. Q.* **1** (July), 87–92 (1878); 'The Late Professor Draper', *Manchester Guardian* (6 January), 5 (1882); 'John William Draper', *Nature* **25**, 274–275 (1882); 'Dr. J. W. Draper', *Knowledge: An Illustrated Magazine of Science Plainly Worded—Exactly Described*, **1** (27 January), 263–265 (1882); 'In Memoriam', *Univ. Q.* **5** (February), 51–56 (1882); the one exception being 'Dr. John William Draper', *Athenaeum* (14 January), 60–61 (1882).
- 37 See Donald Fleming, *John William Draper and the religion of science* (University of Pennsylvania Press, Philadelphia, PA, 1950), pp. 66–73.

- 38 See *ibid.*, pp. 165 and 183.
- 39 See 'Recent acquisitions of the Manuscript Division', *Q. J. Lib. Congr.* **31** (4), 235–276 (1974); 'Floodgates and Watergate: recent acquisitions of the Manuscript Division', *Q. J. Lib. Congr.* **32** (3), 172–206 (1975).
- 40 The Drapers' children consisted of John Christopher (1835–85), Henry (1837–82), Virginia (1839–85), Daniel (1841–1931), William (1845–53) and Antonia (1849–1923). See Thomas Waln-Morgan Draper, *The Drapers in America, Being a History and Genealogy of Those of That Name and Connection* (John Polhemus Printing Co., New York, 1892), esp. pp. 225–228.
- 41 John William Draper, Virginia Draper, Antonia Draper to family, 11 June 1860, container 43, Draper Family Papers.
- 42 John William Draper, Virginia Draper, Antonia Draper to family, 17 June 1860, container 43, Draper Family Papers.
- 43 For a detailed examination of the conception, production and reception of Chambers's *Vestiges*, see James A. Secord, *Victorian sensation: the extraordinary publication, reception and secret authorship of Vestiges of the Natural History of Creation* (University of Chicago Press, 2000).
- 44 However, this portion of the letter is difficult to decipher because Virginia, perhaps in an attempt to conserve paper, continued the letter palimpsest, reusing the same page and overlapping the text. I have used multispectral analysis software to separate the text—but the technology is imperfect. See Virginia Draper to family, 6 July 1860, container 43, Draper Family Papers.
- 45 John William Draper to family, 6 July 1860, container 43, Draper Family Papers.
- 46 Huxley, *Life and Letters of Sir Joseph Dalton Hooker*, *op. cit.* (note 1), vol. 1, p. 526.
- 47 See Kaalund, *op. cit.* (note 25).
- 48 Sidgwick, *op. cit.* (note 3), p. 434.
- 49 Hesketh, *op. cit.* (note 23), p. 60.
- 50 Fleming, *op. cit.* (note 37), p. 68.
- 51 John William Draper, *Scientific Memoirs: Being Experimental Contributions to a Knowledge of Radiant Energy* (Harper & Brothers, New York, 1878), esp. pp. 76, 246, 271, 284 and 322.
- 52 *Report*, *op. cit.* (note 29), p. xxix.
- 53 It should be briefly noted here that Draper quite possibly met physicist John Tyndall (1820–93) at the 1860 meeting. The John William Family Papers reveal that Draper and Tyndall maintained a friendly correspondence for several years. They began in 1863, when Draper sent Tyndall a copy of his *Intellectual Development*, and continued as late as 1878. As is well known, Tyndall had used Draper's book as a guiding principle for his notorious 'Belfast Address' in 1874. Throughout these letters Tyndall had nothing but praise for Draper's historical work.
- 54 Fleming, *op. cit.* (note 37), pp. 10 and 20–27.
- 55 See 'John William Draper Memorial Park, Hastings-on-Hudson, N.Y.', in John William Draper to family, container 8, Draper Family Papers.
- 56 John William Draper to family, 6 July 1860, container 43, Draper Family Papers.
- 57 See, for example, *Glasgow Herald* (4 July), 4 (1860); *Liverpool Mercury* (5 July), 2 (1860); *The Press* (7 July), 656 (1860); *John Bull*, (7 July), 422 (1860); *Illustrated London News* (7 July), 3 (1860); *Morning Chronicle* (9 July), 7 (1860); *Caledonian Mercury* (11 July), 4 (1860); *Derby Mercury* (11 July), 6 (1860); *Chambers's Journal* (28 July), 64 (1860)—although it should be noted that some of these reports mistake Draper's 'law of development' for Darwin's theory of evolution by natural selection, an idea that Darwin explicitly rejected.
- 58 Darwin, *Life and Letters*, *op. cit.* (note 1), vol. 2, p. 321.
- 59 'Section D.—Zoology and Botany, Including Physiology', *Athenaeum* (14 July), 65 (1860); *Birmingham Daily Post* (2 July), 3 (1860).
- 60 *Evening Star* (2 July), 3 (1860); Darwin, *Life and Letters*, *op. cit.* (note 1), vol. 2, p. 321; Huxley, *Life and Letters of Thomas Henry Huxley*, *op. cit.* (note 1), vol. 1, p. 195.
- 61 Sidgwick, *op. cit.* (note 3), p. 434.
- 62 Huxley, *Life and Letters of Sir Joseph Dalton Hooker*, *op. cit.* (note 1), vol. 1, p. 526.

- 63 'Section D', *op. cit.* (note 59), p. 64.
- 64 Huxley, *Life and Letters of Sir Joseph Dalton Hooker*, *op. cit.* (note 1), vol. 1, p. 526.
- 65 'Section D', *op. cit.* (note 59), p. 65; 'Proceedings of Societies', *Edinb. New Phil. J.* **12** (2), 265–281 (1860), at p. 275.
- 66 Stephen (ed.), *op. cit.* (note 30), p. 44.
- 67 A younger contemporary of his, W. H. Fremantle (1831–1916), suspected that Wilberforce had been 'primed' by Richard Owen. See the account in F. Darwin, *Charles Darwin: his life told in an autobiographical chapter*, *op. cit.* (note 1), pp. 238–239. More recently, see Lucas, *op. cit.* (note 13), pp. 317–322.
- 68 See, for example, Moore, *op. cit.* (note 9); and David N. Livingstone, *Darwin's forgotten defenders: the encounter between evangelical theory and evolutionary thought* (Eerdmans, Grand Rapids, MI, 1987).
- 69 Frederick Temple, *The Present Relations of Science to Religion: A Sermon Preached on Act Sunday, July 1, 1860 Before the University of Oxford, during the Meeting of the British Association* (J. H. & Jas. Parker, Oxford, 1860). Temple greatly expanded this argument in his Bampton Lectures, *The Relations between Science and Religion: Eight Lectures Preached before the University of Oxford in the Year 1884* (Macmillan & Co., Oxford, 1885).
- 70 See, for example, Matthew Stanley, 'Where naturalism and theism met: the uniformity of nature', in *Victorian scientific naturalism: community, identity, continuity* (ed. Gowan Dawson and Bernard Lightman), pp. 242–262 (University of Chicago Press, 2014).
- 71 John William Draper to family, 12 July 1860, container 43, Draper Family Papers. See 'Origin of Species', *Spectator* (28 July), 719 (1860).
- 72 Fleming, *op. cit.* (note 37), p. 68.
- 73 John William Draper to family, 12 July 1860, container 43, Draper Family Papers.
- 74 In his paper Draper offered an entirely deterministic outlook on life. He asserted that 'the Organic world appears to be in repose because natural influences have reached an equilibrium. A marble may remain motionless forever on a level table but let the surface be a little inclined and the marble will quickly run off. From looking at it in its state of rest we should hardly be justified in affirming that it was impossible for it ever to move.' See container 8, Draper Family Papers.
- 75 Virginia Draper to family, 6 July 1860, container 43, Draper Family Papers.
- 76 John William Draper to family, 6 July 1860, container 43, Draper Family Papers.