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Science without a Head?

**John William Lubbock and the leadership of English Science in the
1830s**

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Submitted in fulfilment of the degree of Doctor of Philosophy in History

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Abstract

This thesis presents a revisionist view of the operation of the Royal Society in the 1830s identifying, counter to established opinion, significant development in its organisation of science and pointing to the contribution to this of a pivotal but neglected figure: physical astronomer and mathematician, John William Lubbock. Elected as the Society's Treasurer in November 1830 at a time of damaging internal dispute concerning its governance, Lubbock is shown to have restored unity and led the institution through wide-ranging reform. The circumstances are explored through the detailed examination of primary sources, particularly the extensive Lubbock correspondence held at the Royal Society. It is argued that it has been the failure to recognise Lubbock's high status within science and within society in the Metropolis that has contributed to his being overlooked by historians. An examination of the processes by which the Lubbock family achieved social standing and were drawn to science illustrates ideas about cultural emulation of Whig intellectual society and also the transition from a Science dominated by Improvement to one in which mathematics was increasingly prominent. This study makes further original historiographical contributions: firstly, on the Cambridge University election of 1832 in which men of science made an unsuccessful attempt to secure a representative (Lubbock) in parliament; secondly, on the factors which determined the relationship between the Royal Society and the nascent British Association, highlighting Lubbock's importance in this; thirdly, on Lubbock's role as first Vice-Chancellor in the establishment of the University of London with its innovatory BA degrees of which science was a significant and compulsory component. The study as a whole demonstrates the validity of a methodological approach which focusses on an individual.



Sir John William Lubbock, third baronet (1803-1865)

By Thomas Phillips, 1843. University of London, Senate House¹

¹ Oxford Dictionary of National Biography,
<https://www.oxforddnb.com/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-1010747>

To my wife Toni for her love and support

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Contents	Page
Introduction	10
Chapter 1 The journey of the Lubbock family into science, 1800-1830	
1.1 Introduction	41
1.2 The Fashionable World	45
1.3 Rank	56
1.4 'Spirit of Improvement'	69
1.5 'French Mathematics'	88
1.6 Concluding remarks	107
Chapter 2 The transformation of the Royal Society, 1830-1835	
2.1 Introduction	108
2.2 Background to the Election of 1830	110
2.3 The <i>Senior</i> Vice-President	116
2.4 Changes to the operation of the Society	124
2.5 The Royal society's organisation of Science	141
2.6 Concluding remarks	169
Chapter 3 Politics of Science? The University of Cambridge Election 1832	
3.1 Introduction	170
3.2 Background to the election of 1832	171
3.3 Politics and men of science in the early 1830s	178
3.4 Lubbock's support from Science	183
3.5 Would a man of science make a good MP?	190

	3.6 Lubbock's withdrawal	196
	3.7 Concluding remarks	202
Chapter 4	The pathway to coexistence	
	4.1 Introduction	204
	4.2 The new Association's relationship with the Royal Society	208
	4.3 Enlisting Fellows of the Royal Society	217
	4.4 The wooing of Lubbock	225
	4.5 Lubbock and the British Association, 1833-37	230
	4.6 Concluding remarks	233
Chapter 5	Changing while remaining the same?	
	5.1 Introduction	236
	5.2 Sussex and the Council, 1833-35	238
	5.3 Lubbock's resignation	248
	5.4 Resignation of Sussex and appointment of Northampton	255
	5.5 Scientific Committees	262
	5.6 Election Certificates	267
	5.7 Concluding remarks	272
Chapter 6	The foundation and early years of the University of London	
	6.1 Introduction	274
	6.2 A Whig institution: Foundation – 1836	280
	6.3 The first Senate of the University of London	284
	6.4 The working Senate	297
	6.5 The question of Theology in the BA	303

	6.6 Examinations	314
	6.7 Concluding remarks	332
Conclusion		335
Bibliography		358

Figures

1.1	Lubbock family tree	44
1.2	'Samuel Rogers' House, Green Park front'.	47
1.3	'Samuel Rogers at his breakfast table'. Charles Mottram, 1823.	49
1.4	Detail from Wallis's Plan of the Cities of London and Westminster, 1797	50
1.5	Appearance of the term 'fashionable' in London and Provincial newspapers: 1790-1820	53
1.6	Number of London Banks, 1736-1799	60
7.1	'A Meeting of the Royal Society at Somerset House'	347

Tables

1.1	Colquhoun's social structure of England and Wales, 1801	62
1.2	Number of Royal Institution proprietors by rank	74
3.1	Voting record at the 1831 election	175
4.1	Men serving concurrently on both the RS Council and the BAAS Council, 1833 – 1840	223
5.1	Attendance at Council Meetings, 1830-35	247
6.1	The First Senate of the University of London – membership of groups at time of foundation (Nov. 1836)	296
6.2	Summary of attendance at Senate meetings, 5 April 1837 to 15 June 1842	299
6.3	Voting record on the recommendation that candidates must pass a Theology examination	307
6.4	Attendance at Committee of Circumstances meetings	326

Introduction

It is now half a century since Jack Morrell surveyed the organisation of nineteenth-century British science ‘not over the whole century but in and around a particular year’.¹ The year Morrell had chosen was 1830. ‘In that climacteric year’, he stated, ‘Charles Babbage vehemently denounced the Royal Society of London, which was suffering traumatic internal dissent apropos its future development and the related question of its next President’.² Augustus Bozzi Granville, another critic but in the opposite camp to Babbage on the issue of President, described the situation as ‘Science without a Head’.³ Morrell’s paper appeared in the middle of a period of about forty years during which many historians focussed their attention on the attempts to bring about reform within the Royal Society in the earlier part of the nineteenth century and, in particular, on the contested Presidential election of November, 1830 – the ‘famous poll on St Andrew’s Day’, as Roy MacLeod described it.⁴ MacLeod, like Morrell and others, considered this Presidential election, in which the Fellows rejected by a narrow margin the astronomer John Herschel in favour of the King’s brother, the Duke of Sussex, to be a ‘turning point’ in ‘the history of the scientists’ revolt’.⁵ A turning point, but in what sense? Many authors, at this juncture in the history of science, turned to examining the foundation of the British Association for the Advancement of Science in 1831, seeing this, in part at least, as a consequence of the discontent within a Royal Society. MacLeod’s view that for the next decade within the Royal Society, ‘the major work of administrative reform was shelved’, was echoed by many writers.⁶ Mary Louise Gleason, for

¹ Morrell, J.B., ‘Individualism and the Structure of British Science in 1830’, *Historical Studies in the Physical Sciences* 3 (1971), p.184.

² Ibid.

³ Granville, A.B., *Science without a Head; or, the Royal Society Dissected* (London, 1830).

⁴ MacLeod, R.M., ‘Whigs and Savants: Reflections on the Reform Movement in the Royal Society, 1830-1848’, in Inkster, I. and Morrell, J.B. (eds), *Metropolis and Province* (London: Routledge, 1983), p. 66.

⁵ Ibid.

⁶ Ibid., p.67.

example, in her study of the institution in this period stating that ‘. . . in the Royal Society, the old aristocratic forces directed its affairs until the statutes revision of 1846 paved the way for the ascendancy of scientific interests’.⁷ The historiography paints a picture of a Royal Society marking time until the reform of its Statutes, finally ratified in 1847, while the ‘Advancement of Science’ rested with the nascent British Association. This has become the accepted interpretation to such a degree that even popular author Richard Holmes, in an acclaimed publication of 2008, can describe the victory of the Duke of Sussex as an ‘unsatisfactory result’ leading to a ‘breakaway movement’ of ‘young scientists’ who ‘began to think of circumventing the Royal Society entirely’.⁸ However, this study will argue, the Royal Society *did* undergo significant reform and modernisation, and, while there may not have been a formal change to the Statutes, there was a pronounced change in ethos. This, together with the rapid rehabilitation of reformers, enabled it to retain its preeminent position within British science while quickly settling into mutually supportive co-existence with the British Association. Moreover, this study will seek to show that this was primarily due, not to the actions of some ‘network’ or ‘reform group’ as has been suggested by earlier writers, but to the influence and leadership of just one man.

Failure to be able to explain satisfactorily how the Royal Society managed to survive the crisis of November 1830 and emerge stronger represents unfinished historiographical business from earlier studies. To understand why historians have struggled with this question, and why it is hoped the methods adopted in this study have been more successful, we should consider, for a moment, the following statement with which Steven Shapin and Arnold Thackray began a 1974 paper: ‘The most venerated truism of the historical profession is that what you see depends upon where you stand and how you choose to focus your

⁷ Gleason, M.J., *The Royal Society of London: Years of Reform, 1827-1847* (New York: Garland, 1991), p. 19.

⁸ Holmes, R., *The Age of Wonder* (London: Harper Press, 2008), p. 437.

attention. In no field is this more true than in the history of science'.⁹ The question, then, is where to stand? At the time this paper was published, Thackray, now in collaboration with Morrell, was embarking on an investigation of the foundation of the British Association that would result in the publication, in 1981, of their seminal *Gentlemen of Science: Early Years of the British Association for the Advancement of Science*.¹⁰ With the aid of 'a considerable collection of manuscripts', they viewed the scientific world of the 1830s from the perspective of the key individual in the Association's early years: its 'long forgotten' founder, Vernon Harcourt.¹¹ To better understand the Royal Society in this period, which has been one of the principal objectives of the present study, a similarly neglected but yet pivotal figure has been identified to be its focus. This is the astronomer and mathematician, John William Lubbock (1803-1865). After his election as Treasurer in November 1830, Lubbock was the Royal Society's *Senior Vice President* and, it will be shown, its dominant figure throughout the decade. He soon also became an influential member of the British Association and in 1836, when the Whig government determined upon establishing the University of London, it was Lubbock to whom they turned to bring the institution, with innovatory degrees that required the study of science, into being. It is from the central position of John William Lubbock that this study has examined the organisation of science in the 1830s with reference to the Royal Society in particular, but also to the British Association and the University of London. As with Harcourt, there is a considerable volume of manuscripts – in excess of 7,000 extant letters in various collections. Principally, the Lubbock Collection held by the Royal Society Archive contains 6,521 letters, mainly in-coming, from around 600 correspondents. These letters put flesh on the bare bones of official records such as committee minutes and they reveal the inner workings of the institutions. From anything but the most superficial examination of

⁹ Shapin, S. and Thackray, A., 'Prosopography as a Research Tool', *History of Science* 12 (1974), p. 1.

¹⁰ Morrell, J. and Thackray, A., *Gentlemen of Science. Early Years of the British Association for the Advancement of Science* (Oxford and New York: Clarendon Press, 1981).

¹¹ *Ibid.*, Frontispiece.

these primary sources the researcher is soon led to conclude that Lubbock was an indispensable figure to these bodies. The election of November, 1830, was a turning point, therefore, because it brought John William Lubbock into the management of British science. If the reader has previously encountered a Lubbock, it was most probably the naturalist, anthropologist, politician, inventor of Bank Holidays and Darwinist: John (1834-1913), who was John William's eldest son. Lubbock *senior's* importance, both as a man of science and an administrator, has not been sufficiently acknowledged and it is to be hoped that this study will encourage him, 150 years or so after his death, to emerge from the shadow of his more famous offspring.

It will have been evident, from the opening sentences of this thesis, that most historians studying the development of science in the 1830s still reserve a prominent position for Babbage's reformist agitation expressed through his *Reflections on the Decline of Science in England and on some of its Causes*, published in April, 1830, and also the rejection of Herschel by the Royal Society in November of that year.¹² However, the historiography has moved on from views expressed by L Pearce Williams in 1961, (echoing George Foote, 1951), that the Royal Society of the time was a 'club run by amateurs to the increasing dismay of professional and practising scientists'. Also that Herschel's defeat by the Duke of Sussex was the point at which, with the 'cause of reform soundly beaten', those members of the Royal Society who had 'just had their hopes dashed' seized on the idea of forming the British Association.¹³ Although seeing these events as a struggle between amateur and professional soon came to be considered as both simplistic and inaccurate, the concluding remarks to Williams's paper are still of interest. 'An epilogue to this story seems

¹² Babbage, C., *Reflections on the Decline of Science in England and on some of its Causes* (London 1830).

¹³ Williams, L.P., 'The Royal Society and the Founding of the British Association for the Advancement of Science', *Notes and Records of the Royal Society of London* 16 (1961), pp. 221-33; Foote, G.A., 'The Place of Science in the British Reform Movement 1830 – 1850', *Isis* 42 (1951), pp. 192-208.

almost required', he stated. 'What happened to the Royal Society and how did it rise to its present professional status if it had been captured by the amateurs?'¹⁴ Making allowance for the term 'amateur', it is a question to which generations of historians have failed to find a satisfactory answer. Williams suggested that the reformers 'merely bided their time' until the election of the Marquis of Northampton, a 'transition figure', as President in 1838.¹⁵ MacLeod too considered that in the period 1830-38, which he termed 'years of adjustment', the Royal Society underwent 'little internal change'.¹⁶ He noted, however, that 'under Sussex, the RS quickly accommodated itself to the BAAS's existence' adding that 'Opposition was accommodated on the Council. Of the eighty declared supporters of Herschel, eleven became Council members within two years.'¹⁷ MacLeod did not suggest how this 'accommodation', which surely represents a significant change, might have been achieved. Similarly, Marie Boas Hall, in her 1984 history of the Royal Society in the nineteenth century, made the following comment about the period after the 1830 election:

Paradoxically, it was the apparent victory of the forces of conservatism that was to produce, slowly, the reform the radicals wanted. It was, inevitably, slowly because the necessary preliminary (as the radicals did not perceive) was the creation of a more business-like and efficient administration which should ensure the smooth running of the Society. As it was to turn out, at Sussex's resignation in 1838, the Society was far more 'modern' than it was in 1830 . . .¹⁸

But how *did* it 'turn out' this way? Hall's 'traditional history' (her description) described some of the changes under Sussex that together, she believed, constituted 'a modest amount of desirable reform'.¹⁹ The phrase is fraught with teleological difficulty but it prompts us to ask why these changes to the way in which science was organised were considered desirable at

¹⁴ Williams, 'The Royal Society and the founding of the British Association', p. 33.

¹⁵ Ibid.

¹⁶ MacLeod, 'Whigs and Savants', pp. 66-67.

¹⁷ Ibid.

¹⁸ Hall, M.B., *All Scientists Now: The Royal Society in the Nineteenth Century* (Cambridge: Cambridge University Press, 1984), p. 63.

¹⁹ Ibid., Preface xi, p. 66.

the time. In 1975, Morris Berman described Donald Cardwell's *The Organisation of Science in England*, as an invaluable reference work, but he admitted that he was unable to 'discern Dr Cardwell's argument as to how English science *did* get organised'.²⁰ This was to introduce Berman's thesis which was that, in many respects, early nineteenth century British science *didn't* get organised. Of course, it depends on one's understanding of the term 'organised'. Berman had in mind collaborative working, or at least joint efforts, towards utilitarian goals such as was envisaged by the British Association but never quite achieved in its early years – not 'British scientific style', Berman argued.²¹ Cardwell, however, saw organisation in more general terms as being those factors which make the pursuit of science possible and which influence its development. Taking a Cardwellian view of organisation, therefore, the first question which this thesis will address is: what was the nature of the changes introduced in the Royal Society in the 1830s, and what was their significance both for the Society and British science generally? It will be suggested that considerable revision of established ideas is necessary.

The Royal Society, it will be argued, underwent subtle but significant change in the 1830s, including adapting its position as the preeminent society to accommodate the appearance of the British Association. The thesis will next aim to shed some light on how and by whom this was brought about. *Science without a Head*, (lacking the interrogation point added by this author for the thesis title), was published by physician Augustus Bozzi Granville in November, 1830, just a few days before the Royal Society presidential election.²² It stated Granville's opinion that the institution lacked leadership and that this could best be remedied by the election of a man of the highest station, the Royal Duke of Sussex, (son of George III

²⁰ Berman, M., 'Hegemony and the Amateur Tradition in British Science', *Journal of Social History* 8 (1975), p. 31; Cardwell, D.S.L., *The Organisation of Science in England* (London: Heinemann, 1957).

²¹ Berman, 'Hegemony', p.42.

²² Granville, *Science without a Head*, pp. 102-04.

and brother to Kings George IV and William IV), whom the Fellows duly chose. After the first two years of his Presidency however, the Duke himself rarely attended Council meetings. In fact, as Williams noted sixty years ago, 'from 3 July 1834 to 19 October 1837 he did not attend a single Council meeting'.²³ We must look elsewhere, therefore, for the guiding hand, or hands, effecting change.

The 1960s saw the appearance of papers by Susan Cannon, writing at the time as W.F. Cannon, which have been of lasting influence. Her 1978 publication, *Science in Culture*, was based largely on the reworking of the papers published or read earlier, in particular, 'History in Depth' and 'Science and Broad Churchmen' (both 1964).²⁴ Through the careful examination of the correspondence of a small number of individuals who could be shown to be of central importance and by the mapping of their individual religious, social and political positions, Cannon revealed, she believed, a group of men, (Babbage and Herschel together with George Peacock, William Whewell, George Biddell Airy and a few others), whose individual actions collectively directed the development of science in the 1830s. These Cannon referred to as the 'Cambridge Network', since most could be connected with the University, and she suggested that they shared a philosophy regarding scientific method which made them feel part of an 'intellectual totality'.²⁵ The idea was rapidly taken up by others and gained widespread currency. Morrell and Thackray, for example, stating in *Gentlemen of Science* (1981) that 'Cannon's Cambridge Network provided much of the leadership of the Gentlemen of Science [the British Association] . . . In their methods and their objects they came closest to incarnating the idea of a clerisy . . . they permanently and profoundly affected the idea of science in the English-speaking world'.²⁶ Similarly, David

²³ Williams, 'The Royal Society and the Founding of the British Association', p. 33.

²⁴ Cannon S.F., *Science in Culture* (Dawson: Folkestone, 1978); Cannon, W.F., 'History in Depth: The Early Victorian Period', *History of Science* 3 (1964) pp 20-38. Cannon, W.F., 'Science and Broad Churchmen: An Early Victorian Intellectual Network', *Journal of British Studies* 4 (1964), pp. 65-88.

²⁵ Cannon, *Science in Culture*, pp. 29-71.

²⁶ Morrell and Thackray, *Gentlemen of Science. Early Years of the British Association*, p. 21.

Philip Miller, in his influential study of the Royal Society, 1800-1835, which was completed in the same year, identified the 'Cambridge Network' as one of his reform groups.²⁷ Named in what Miller called a 'galaxy of stars' who were 'instrumental in numerous institutional innovations and reforms' were Charles Babbage, John Herschel, George Peacock, William Whewell, Adam Sedgwick and George Airy.²⁸ The central figure in Cannon's cultural network was not Babbage but John Herschel. Cannon conceded that her position might be too 'Herschel-centred', justifying this by stating that Herschel '*was* at the centre of English science'.²⁹ Adrian Desmond and James Moore, writing about events of 1837 in their biography of Darwin, took this view further. John Herschel was 'the de facto head of science in Britain', they stated; this is in spite of his having been 10,000 Km and several weeks sailing away in Cape Town at the time, where he had been based since 1833 observing the southern heavens.³⁰ Richard Holmes, erroneously, has Herschel being elected as President of the Royal Society on his return from South Africa in 1838, although it is true that overtures *were* made to him to accept that position.³¹ Herschel's ideas about scientific method were without question hugely influential and, through his completing of the mapping of the heavens in particular, he could be considered to have been, alongside Michael Faraday and Charles Lyell, responsible for some of the greatest advances in scientific knowledge and understanding in this period.³² But does this constitute leadership?

Analysis of attendance at institutional meetings has been an important research tool in this study, one which it seems has been used only rarely in this area of research. Paul

²⁷ Miller, D.P., 'The Royal Society of London 1800-1835: A Study in the Cultural Politics of Scientific Organisation', (Ph.D. thesis, University of Pennsylvania 1981), pp. 77-95.

²⁸ *Ibid.*, p. 77.

²⁹ Cannon, *Science in Culture*, p. 217.

³⁰ Desmond, A. and Moore, J., *Darwin* (London: Penguin Books, 1991), p. 214.

³¹ Holmes, *The Age of Wonder*, p. 465.

³² Herschel, J.F.W., *Results of the Astronomical Observations made in 1834, 5, 6, 7, 8 at the Cape of Good Hope; Being a Completion of a Telescopic Survey of the whole Surface of the Visible Heavens, Commenced in 1825* (London: Smith, Elder and Co, 1847).

Weindling, studying the organisation of the short-lived British Mineralogical Society, used attendance at meetings to identify key players.³³ More recently, Frank James, in his study of 'Institutional interactions between the Board of Agriculture and the Royal Institution' has used attendance at the Institution's managers' meetings to challenge Berman's view that there had been significant influence from the agricultural interest.³⁴ Many major landowners, James demonstrates, notwithstanding their having been managers for 'significant periods of time', had only a poor record of attendance at meetings.³⁵ At the Royal Society too, we must be cautious in using Council membership as an indication of involvement in the organisation of science. Herschel, for example, did serve on the Council of the Royal Society in 1838/39 and 1839/40, but his attendance record reveals that in 1838/39 he attended Council meetings on only 13 out of a possible 22 occasions, incidentally the same number of times as the Society's President, the Marquis of Northampton.³⁶ The following year Herschel attended just three times, not attending at all after he had moved his family to Collingwood in Kent in April 1840 for a 'secluded life of research'.³⁷ Two other men from Miller's 'galaxy' served in 1838/39: Sedgwick (attended 4 times out of 22), Whewell (5 times). A casual glance at Council membership in the 1830s would suggest that Whewell, having served in six separate years, (the maximum permitted with the Society's two years on: one year off regulation) was a key figure. Whewell's cumulative attendance, however, is just 31 out of a possible 109 (28%). Peacock's, based on five years of service, is scarcely better at 32%.³⁸ As far as the Royal Society in the 1830s is concerned therefore, the

³³ Weindling, P., 'The British Mineralogical Society: A Case study in Science and Social Improvement', in Inkster, I. and Morrell, J.B. (eds), *Metropolis and Province* (London: Routledge 1983), pp. 141-142.

³⁴ James, F.A.J.L., "'Agricultural Chymistry is at present in its infancy": The Board of Agriculture, The Royal Institution and Humphry Davy', *Ambix* 62 (2015), p. 369. James was commenting on Berman, M., *Social Change and Scientific Organization: The Royal Institution, 1799-1844* (London: Heinemann, 1978), p. 45.

³⁵ James, 'Agricultural Chymistry', p. 370

³⁶ Minutes of the Council of the Royal Society, Royal Society Archive CMO/12.

³⁷ Buttmann, G., *The Shadow of the Telescope: A Biography of John Herschel* (London: Lutterworth Press, 1974), p. 155.

³⁸ Minutes of the Council of the Royal Society, Royal Society Archive CMO/11 and CMO/12.

admittedly crude measure that is attendance at Council does not advance the case for the existence of a Herschelocentric scientific universe populated by Cambridge Network stars. It does, however, point us in the direction of one man: the Society's Treasurer and Senior Vice-President, John William Lubbock. In 1838/39, for example, he was, as was typically the pattern, the only man to attend all of the Council meetings, taking the chair in the frequent absence of the President. The office of Treasurer conferred upon Lubbock *ex officio* membership of the Council for as long as he was in post making him, in effect, a permanent member and able to effect change. Understanding this will prompt us to delve deeper into the workings of the Society, as did Granville for his 1836 sequel to *Science without a Head*, when he discovered that 'wherever I turned, I invariably met . . . with Mr Lubbock's name – which I found uniformly associated with everything that was likely to be advantageous to science and to the Royal Society'.³⁹

That historians have failed to see Lubbock as a significant figure is due in no small part to the adoption of a methodology focussing on groups. Miller is typical, describing his approach to the study of the period leading up to the 1830 election as 'an attempt to delineate the cultural bases of warring interest groups in the Royal Society'.⁴⁰ The question of why, following the election of Sussex, the Royal Society *didn't* return to 'the cultural eclecticism and institutional networks of the Banksian era' would, he said, be 'treated at length in a future paper'. 'Demographic changes in the character of the Fellowship . . . are vital aspects of any such explanation', he stated.⁴¹ The promised paper has not appeared so we have been left wondering what exactly Miller meant by 'demographic change', what

³⁹ Granville, A.B., *The Royal Society in the XIXth Century* (London, 1836), p. 159.

⁴⁰ Miller, D.P., 'Between Hostile Camps: Sir Humphrey Davy's Presidency of the Royal Society of London, 1820-1827', *British Journal for the History of Science* 16 (1984), p. 21; Miller, 'The Royal Society of London 1800-1835', pp. 75-77. Miller identified four 'main constituencies' within the Royal Society reform group in the period before the 1830 election – 'Mathematical Practitioners' (occupational mathematicians), 'Cambridge Network', 'Scientific Servicemen' from the Army and Navy and 'gentleman geologists'.

⁴¹ Miller, 'Between Hostile Camps', p. 47.

evidence he might have presented and what explanation he would have offered. These are questions for this thesis to consider. Miller's final comment on the Royal Society in the 1830s, indeed what would seem to be the last new comment from any scholar, appeared in a 1986 review of Hall's text in which he stated his view that 'those years saw the operation of a new sort of interest-group politics in the Society'.⁴² Is this analysis correct, or is there a sense in which a methodology which must construct groups has become a hindrance? Such methods, as Miller has shown, may help to understand how disparate groups within a 'phalanx of reformers' might have operated at the Royal Society in the 1820s and they may also be appropriate, as Morrell and Thackray have shown, for studying the British Association with a diverse cast of hundreds, but are they appropriate for the study of the complex inner workings of the Royal Society in the 1830s?⁴³ Miller criticised Hall's account for having a 'largely administrative focus' but, ironically, the key to understanding the institution's evolution in this decade is, this study will suggest, the *detailed* examination of minute books and related correspondence, particularly that of one pivotal man.⁴⁴

At this point, having been informed that Lubbock was the central figure in English science in the 1830s, all but those thoroughly familiar with the period will find themselves asking, 'but who was *he*?' On 30 November, 1830, the Fellows of the Royal Society elected a twenty-seven-year-old mathematician, John William Lubbock, to their Council and appointed him Treasurer. While the focus of this thesis is Lubbock's subsequent role in the evolution of the Royal Society in the 1830s, it will also trace his family's journey into science and attempt to set this within the context of the considerable political, social and cultural change at the time. Overall, this thesis takes the form of a broadly chronological narrative in which biographical detail is prominent. Recent interest in scientific biography has led several

⁴² Miller, D.P., "'Reform Characters". A Review of "All Scientists Now: The Royal Society in the Nineteenth Century" by Marie Boas Hall', *Isis* 77 (1986), p. 132.

⁴³ Miller, 'The Royal Society of London 1800-1835', p. 76.

⁴⁴ Granville, *The Royal Society in the XIXth Century*, pp. 158-60.

authors to refute the charge that it is necessarily weak history and Mott Greene is typical of many when he suggests that a life, as an 'exemplary instance', can make 'strong history stronger'. This is because it is able to provide 'specific knowledge of how cultural movements and political or scientific developments come together in a given time and place'.⁴⁵ It is in this sense exactly that the present thesis aims to use the story of Lubbock and his family.

The following brief biographical details will be shown to be of particular relevance and will be explored in some depth. Lubbock was born in 1803 into a family of successful City bankers. He was the heir to a baronetcy, first conferred upon his great-uncle in 1806, which he would inherit in 1840. Lubbock's early upbringing centred on the intellectual world of Regency St James's during the Whig Revival. Subsequently, he was educated at Eton and at liberal Anglican Trinity, Cambridge, where his tutor in mathematics was William Whewell. Having graduated, Lubbock became, at the age of 23, an original member of and major contributor to Henry Brougham's Society for the Diffusion of Useful Knowledge (SDUK) established for the promotion of popular education. By 1830, when he was twenty-seven, he was a Fellow of the Royal, Linnean and Astronomical Societies and his work in higher mathematics and physical astronomy had brought him to the attention not just of the scientific world but also to that of the public generally. In the general Election of 1832, Lubbock stood unsuccessfully as a reform (Whig) candidate for the Cambridge University Constituency.

This thesis will aim to show that as a respected man of those mathematical sciences now accorded the highest status, but also with his connections to the Whig aristocracy and government, to Cambridge University, to the City and in London Society generally, Lubbock was in a unique position within the intellectual network. It is Lubbock's connectedness, it will be suggested, that explains his rise to prominence and his success in leading the scientific

⁴⁵ Greene, M.T., 'Writing Scientific Biography', *Journal of the History of Biology* 40 (2007), pp. 728-29.

community. These interactions with key individuals will also highlight just how small the world of metropolitan science was: science in the 1830s, we will discover repeatedly, was largely organised by a small number of men meeting, almost invariably, at Somerset House.

For one who was, it will be argued, a figure of considerable importance, surprisingly little has been written about Lubbock: many historians of the period make no reference to him at all. Sir Henry Lyons's, the earliest author (1939) and a fellow Treasurer of the Royal Society, recognised Lubbock's significance in transforming the Society's financial affairs.⁴⁶ MacLeod, comparing the proposed Royal Society Councils of Herschel and Sussex, noted, without comment but with italic emphasis, that 'both parties would have *added* . . . John Lubbock'.⁴⁷ For Boas Hall, Lubbock was a 'zealous and efficient officer' but little more. Although she noted that during the Presidency of the Duke of Sussex 'Lubbock took the chair almost invariably at Council meetings' and that the next President, the Marquis of Northampton, 'often left the onus of presiding over the Council to Lubbock', she failed to consider the significance of this.⁴⁸ Cannon included Lubbock in her 'Cambridge Network' as a junior member by virtue of his having attended Trinity and been a student of Whewell's. She conceded that she may have underestimated his importance – 'I hereby recant, and say that Lubbock was important in tidal studies and in a good many other ways, and deserves more study by scholars'.⁴⁹ The main body of Miller's work on the Royal Society, although appearing from the title to cover the period 1800 – 1835, concludes in 1830 with the contested election and the failure of the 'bid for reform'. In a brief 'Postscript' covering 1830-1835, Miller included Lubbock in a small group within the Royal Society which 'set to work almost immediately after the election to reduce the polarization into hostile camps

⁴⁶ Lyons, H., 'One Hundred Years Ago. 1839', *Notes and Records of the Royal Society of London* 2 (1939), p. 93.

⁴⁷ MacLeod, 'Whigs and savants', p. 85. William Cavendish would also have been added by both.

⁴⁸ Hall, *All Scientists Now*, pp. 65,77.

⁴⁹ Cannon, *Science in Culture*, p. 41.

which the Duke's accession had produced'. 'Lubbock's role in the early 1830s as reconciler', Miller stated in the endnotes, 'has yet to be fully appreciated.'⁵⁰ It is hoped that this study will go some way to remedying the deficiencies identified by Cannon and by Miller.

The final research questions are more complex and they concern the identification and evaluation of the most significant contributors to the unique set of circumstances which pertain in this historical situation. These will be explored and illustrated using a Lubbock/organisation-of-science narrative. Essentially, three themes will emerge which are of central importance. The first of these concerns the cultural influences attracting men to science at this time; the second is the supplanting of previously dominant Banksian sciences (natural history, horticulture, agriculture) by those involving higher mathematics; the third is the importance, for scientific gentlemen in this period, of social interaction – connectedness. Together, these contributed to the emergence, in 1830, of John William Lubbock, astronomer and mathematician, as a scientific organiser and leader.

Berman has suggested that what he termed the 'evolution of the scientific community' in the first half of the Nineteenth Century resulted from the collective action of *individual* men of science each striving for improved social status under the 'psychological pull of the aristocracy'.⁵¹ Similarly, Miller, echoing and developing Cannon's earlier work, recognised the importance of what he called 'cultural emulation'.⁵² While neither Berman nor Miller saw the political dimension as being of any great significance it is more evident in MacLeod's oft-cited work on Royal Society reform between 1830 and 1848: 'Whigs and Savants'.⁵³ Confusingly however, the paper has little to do with Whigs specifically. Perhaps the title was chosen because MacLeod was exploring what he described as 'the complex

⁵⁰ Miller, 'The Royal Society of London 1800-1835', pp. 372, 385, 393, 394.

⁵¹ Berman, 'Hegemony', p. 41.

⁵² Miller, 'The Royal Society of London 1800-1835', pp. 49-64.

⁵³ MacLeod, 'Whigs and Savants', pp. 55-90.

relationship between events in the RS and parallel events in British political life' which were dominated by Whig reform measures at the time, but he did not elucidate. In fact, the essay was generally dismissive, unfairly so this thesis will argue, of Whig efforts to support and encourage science. More recently, Stephen Jacyna's *Philosophic Whigs* has given earlier ideas a political flavour by identifying 'ardour for science' as having particular status in *Whig* ideology and suggesting that in the early years of the nineteenth century 'cultural flows' drew natural philosophers to a Metropolitan intellectual world dominated by the great Whig families.⁵⁴ This period, as William Anthony Hay has shown, marked the revival of Whig political fortunes as the party attracted support from the middle classes after decades in the doldrums. Hay sees this as being responsible for the transformation of what he describes as a 'faction of aristocratic metropolitan-oriented Foxites' into a 'national party'.⁵⁵ In 1830, its leaders were able to form a government, thus ushering in the first sustained period of Whig political dominance for 70 years. For Hay, this process was largely political and he highlights the role of Henry Brougham in energising the party in the constituencies and in parliament.⁵⁶ Leslie Mitchell, however, believes that being a Whig was as much a matter of 'style' as of politics. Mitchell's 'Whig World' functioned by means of social networks which he calls 'circles of acquaintance' and within these the many colourful individuals of the Whig set were the major intellectual force in Society.⁵⁷ Circles of acquaintance were not unique to the Whigs, but it was they, Mitchell suggests, who celebrated intellect and it was to Whig Society that educated gentlemen, including many men of science, were drawn.⁵⁸ This theme is developed further in Joe Bord's study, *Science and Whig Manners*, which focusses on the public shared behaviour which the author sees as having been used by the Whig statesman

⁵⁴ Jacyna, L.S., *Philosophic Whigs: Science and Citizenship in Edinburgh 1789 – 1848* (London: Routledge, 1994), pp. 9-50, (p.18).

⁵⁵ Hay, W.A., *The Whig Revival, 1808-1830* (Basingstoke: Palgrave Macmillan, 2005), p. 2.

⁵⁶ *Ibid.*, pp. 35-65.

⁵⁷ Mitchell, L., *The Whig World 1760 – 1837* (London: Hambledon Continuum, 2005), pp. 15-37.

⁵⁸ *Ibid.*, pp. 99-116.

(for Bord: a 'public man of comprehensive knowledge') to express his political identity.⁵⁹ Mitchell's Whigs, especially the Court Whigs of the eighteenth century, were essentially dilettanti dabbling in science, but Bord believes that in the nineteenth century Whig statesmen began to use serious scientific engagement – intellectual conversation, membership of Learned Societies, encouragement of scientific agricultural practices etc. – to express their Whig cultural and political identity. It was, he suggests, the various cultural aspects of 'Whiggery' which attracted new supporters, particularly the Whigs' valuing of the intellectual, including, increasingly, natural philosophy.⁶⁰ Bord's work, as the author acknowledges, is not comprehensive and the ideas are illustrated with reference to a relatively small number of influential figures: politicians Russell and Althorp, metropolitan Whig Lord Holland and the Lansdownes on their Wiltshire estate. Richard Brent's study has shown how in the 1830s, the 'decade of reform', it was such Whig men, termed 'liberal Anglicans' because of their concern for religious toleration, who became the dominant political force.⁶¹ In the present study the above ideas will be explored and illustrated with reference to the Lubbock family who, between 1800 and 1830, became firstly Whigs and through this, it will be suggested, men of science. In contrast to MacLeod's negative view concerning the fostering of science by Melbourne's Whig government, Bord highlights the administration's willingness to fund major projects such as the Ross Antarctic Expedition. To this, it will be argued, should be added the major Whig project which was the University of London, conceived by one figure neglected by scientific historiography – Thomas Spring Rice, and brought into existence by another – John William Lubbock.⁶²

The shared philosophy regarding scientific method which bound Cannon's Cambridge Network together placed, she believed, a particular emphasis on measurement

⁵⁹ Bord, J., *Science and Whig Manners. Science and Political Style in Britain, c.1790-1850* (Palgrave Macmillan, 2009), p. 3.

⁶⁰ *Ibid.*, pp. 5-21.

⁶¹ Brent, R., *Liberal Anglican Politics*, (Oxford: Clarendon Press, 1987), pp. 2-3.

⁶² Bord, *Science and Whig Manners*, p. 23.

of the natural world which she described as 'Humboldtian'.⁶³ Miller considered the idea of Humboldtian science to be vague, seeing instead the emergence of a new scientific style maximizing the skills and competences of the mathematicians.⁶⁴ Mathematics and the physical sciences, which stressed the 'higher moral utilities' of science, represented a new scientific ideology in contrast to the 'ornamental and practical pursuits' of Natural History and Horticulture which had been promoted during a Banksian era dominated socially and politically by the aristocracy. The new era, Miller suggested, was dominated instead by the academic and 'gentlemanly scientific' and placed an increasing value on high mathematical competence. This 'mathematization of natural philosophy', spearheaded by the Cambridge group, was, he argued, a major factor related to 'changes in the power structures of the scientific community'.⁶⁵ An important reason for the reformers' 'bid for control' over the Royal Society, he believed, was the fact that the institution's 'control over access to the *Philosophical Transactions*, the award of medals and appointments of officers and Council members would be formidable weapons in their campaign for the mathematization of the physical sciences'.⁶⁶ Morrell and Thackray have expressed similar views regarding a Cambridge influence during the early years of the British Association in which Reports were 'heavily slanted to the mathematical and physical sciences'.⁶⁷ In 'the striking case of mathematical physics', they observed, 'a Cambridge dominated coterie was able to make the Association the servant of its ambitions'.⁶⁸ This study will suggest that the Royal Society underwent a similar but distinct 'mathematization' in the 1830s resulting not from the concerted efforts of a Cambridge group (although many of them *were* influential), but primarily from the institution's having appointed as its Treasurer, in 1830, one of the

⁶³ Cannon, *Science in Culture*, pp. 75-77.

⁶⁴ Miller, 'The Royal Society of London 1800-1835', pp. 173-174.

⁶⁵ *Ibid.*, p.218.

⁶⁶ *Ibid.*, p.230.

⁶⁷ Morrell and Thackray, *Gentlemen of Science. Early Years of the British Association*, pp. 475, 477

⁶⁸ *Ibid.*, p. 479.

foremost mathematicians of the time: John William Lubbock. Lubbock was the disciple and principal advocate of a new, French-inspired, mathematical method which had only emerged at the beginning of the nineteenth century and he was, himself, the product of a radically new Cambridge mathematical education, itself barely a decade old. Through his influence, it will be suggested, mathematical sciences came to occupy a dominant position as the Royal Society made its first attempts at categorizing branches of science and rewarding scientific endeavour in a systematic manner. Similarly, mathematics and physical science were made compulsory elements within the scientific study required for the BA degree of the new University of London.

Miller noted Lubbock's contributions to physical astronomy and also to pendulum studies, citing his 'On the Pendulum', read to the Royal Society on 11 March, 1830, and published subsequently in the *Philosophical Transactions*, as an example of the way in which 'mathematicians cooperated with experimentalists and observers'.⁶⁹ The 'pendulum program', he suggested, fostered collaboration between three of the four 'main constituencies' which he identified within Royal Society reformers – 'Mathematical Practitioners' (occupational mathematicians), 'Cambridge Network' and 'Scientific Servicemen' from the Army and Navy.⁷⁰ Miller believed that his study of work on the pendulum had 'shown how mathematical practitioners, scientific servicemen and members of the Cambridge group built productively upon each other's work. . . .the pendulum program was attractive because it maximised the skills and competencies of the group and legitimated their bid for power as arbiters of the physical sciences in Britain'.⁷¹ Indeed, in apparent evidence of this, a glance at the very first page of Lubbock's pendulum text reveals that he acknowledges the earlier work of Francis Baily (one of Miller's mathematical practitioners),

⁶⁹ Miller, 'The Royal Society of London 1800-1835', p. 194.

⁷⁰ *Ibid.*, pp. 75-77. As already noted, Miller's fourth group, not involved in pendulum studies, were the 'gentleman geologists'

⁷¹ *Ibid.*, p. 197.

William Whewell (Cannon/Miller Cambridge Network) and Captain Henry Kater (a Miller scientific serviceman).⁷² 'Pendulum experiments', Miller stated in a later paper, 'formed one node around which a community of interest and expertise crystallized . . . Pendulum studies were perhaps the first area in which the scientific value of the cooperation of these groups was realized'.⁷³ 'I do not mean to imply' Miller explained, 'that these groups shared a consciously articulated strategy for the revival of the physical sciences'. 'What I do claim', he added 'is that taken as a whole their scientific and political cooperation at the tactical level tended perceptibly in a common direction'.⁷⁴

It is important, however, to consider for a moment how these men would have viewed their 'collaboration'? Miller's methods, which he describes as 'inquiring in detail into the structure of scientific groups and the profiles of skills represented there, together with the political efforts made to maximize the value of those skills', may be helpful in understanding scientific change but they have the disadvantages, firstly of creating groupings which the men themselves would not have recognised, and secondly of distancing the historian from the *individual* men who made the science.⁷⁵ Perhaps it could be argued that this is not important in the analytical process, but what is lost here is the recognition that in this period science was evolving largely within a small metropolitan scientific world in which all its members were to some degree acquainted with each other. In fact, as we shall discuss shortly, the whole structure of that world served to facilitate acquaintance. Lubbock, in turning his attention to the pendulum studies of Baily, Whewell and Kater may have experienced a sense of common purpose, and he was certainly 'maximising' his skills as an exponent of higher mathematics, but he was also extending the work of three men with

⁷² Lubbock, J.W., 'On the Pendulum', *Philosophical Transactions of the Royal Society of London* 120 (1830), pp. 201-08.

⁷³ Miller, D.P., 'The Revival of the Physical Sciences in Britain, 1815-1840', *Osiris* 2 (1986), p. 120.

⁷⁴ *Ibid.*, p. 108.

⁷⁵ *Ibid.*, p. 107.

whom he was closely acquainted: Baily, a City colleague and family friend with a shared interest in the calculation of annuities, Whewell, his former tutor at Cambridge and now also a family friend, Kater another friend who had proposed Lubbock for Fellowship of the Royal Society and written out his election certificate. While Miller correctly and importantly points to the convergence of practical, research and analytical skills which enabled pendulum studies to advance in this period, this process was facilitated greatly by social interaction. The study of *individuals* and their interaction, complementary to other work, brings us closer, therefore, to what Susan Cannon called the ‘totality of the past, . . . limiting and defining the heroes at the same time as it gives a stage for their personal existence and gives a rationale for their all-too-human actions’.⁷⁶

It is not difficult to connect Baily, Whewell, Kater and Lubbock socially. For example, in addition to their shared FRS status, Baily, Whewell, and Lubbock were, at the time ‘On the pendulum’ was read in 1830, all active members of the Astronomical Society while Kater was about to receive that institution’s Gold Medal and would soon to be elected himself.⁷⁷ The Astronomical Society, in its first decade following foundation in 1820, is typically portrayed as a hotbed of agitation for reform in scientific organisation. Like all learned societies, however, it was of course founded principally for the association of like-minded individuals – in this case, men who wished to ‘encourage and promote astronomy’ so that they might aim to ‘survey the whole sky by co-operative endeavour’.⁷⁸ By 1830, ten years after its foundation, the society had 243 members, most of whom were not the vociferous critics of the scientific establishment who have found their way into the history books, but ‘amateur’ observers or simply social members promoting astronomy by paying their fees for the

⁷⁶ Cannon, *Science in Culture*, p. 257.

⁷⁷ Kater joined the Society in 1833. Miller states incorrectly that he was not a member.

⁷⁸ Dreher, J.L.E. and Turner, H.H., *History of the Royal Astronomical Society, 1820-1920* (London: Royal Astronomical Society, 1923), p. 6.

pleasure of associating with the eminent.⁷⁹ Increasingly, historians have come to recognise the importance of association and connection in the world of learned societies. In his study of these institutions in the nineteenth century, William Lubenow chooses to focus not on ‘substantive knowledge’ but on ‘the social processes that members of these societies devised’.⁸⁰ For an appropriate title for his work, Lubenow borrows from E.M. Forster: ‘*Only Connect*’.⁸¹ In another study focussing on a slightly earlier period, Peter Clark suggests that from the mid-1700s ‘clubs and societies were an important and distinctive feature of public sociability’, particularly amongst the urban affluent classes, leading to the development by the end of the eighteenth century of what he refers to as an ‘Associational World’.⁸² It was the first half of the nineteenth century, however, that was the golden age of the foundation of learned societies. Writing in 1847, social statistician Abraham Hume listed thirty-one metropolitan learned societies of which only five had been in existence at the end of eighteenth century.⁸³ He characterised them as being composed of ‘intellectual men, voluntarily united, for the purpose of promoting knowledge generally, or some particular branch of it . . . Rendering knowledge accessible and pleasing’.⁸⁴ It is clear from the opening remarks in Hume’s contemporary assessment of the ‘uses’ of learned societies that association was considered to be of prime importance:

Independent of the general effect which all these societies produce upon the public, they are of great importance to their own members. There is, in the first instance, the companionship with men of similar tastes and habits, and perhaps of the same general pursuits . . . The meeting of several of these at stated intervals, on the common ground of friendship as well as of literary or scientific inquiry, is a gratification which is justly prized by the members; and many testify that they are

⁷⁹ Ibid., p. 245.

⁸⁰ Lubenow, W.C., *‘Only Connect’: Learned Societies in Nineteenth Century Britain* (Woodbridge: Boydell Press, 2015), ix.

⁸¹ The phrase is taken from Forster’s *Howards End*, Chapter 22 – ‘Only connect! . . . live in fragments no longer’.

⁸² Clark, P., *British Clubs and Societies, 1580-1800: The Origins of an Associational World* (Oxford, Oxford University Press, 2000), pp. 88, 94-140.

⁸³ Pickering, W.S.F., ‘Abraham Hume (1814-1884) A Forgotten Pioneer in Religious Sociology’, *Archives de Sociologie des Regions* 33 (1972), pp. 33-48; Hume, A., *The Learned Societies and Printing Clubs of the United Kingdom* (London: Willis, 1847), xv-xvi.

⁸⁴ Hume, *The Learned Societies*, p. 3.

improved not less by the casual remarks of the more eminent, than by the formal communications provided by the Society.⁸⁵

In Hume's description we may identify many features which today's sociologist would recognise as fundamental to a social network. Charles Kadushin, one of the founders of this field of study, has set out the principal concepts which 'underlie the social network phenomenon'.⁸⁶ In the workings of learned societies we find that there were regular meetings, (anything from weekly to monthly but typically on a fortnightly basis), producing 'propinquity' – opportunities for positive interaction through 'being in the same place at the same time'. Also, the election of men with common social attributes engendering 'homophily' in which 'their characteristics match in a proportion greater than expected in the population'.⁸⁷ Hume noted that election certificates usually indicated that the candidate was considered to be a 'fit and proper person', and therefore suitable to associate with other fit and proper persons.⁸⁸ 'There is rarely any opposition to a candidate who is brought forward by members of standing and respectability', he stated.⁸⁹ Propinquity and homophily, Kadushin suggests, increase cohesiveness within a network and enable its members to pull together when confronted with disruptive forces.⁹⁰

As has been discussed previously, many historians have offered their different analyses of the circumstances which caused the Royal Society to lose its cohesiveness during the 1820s, reaching a climax of disconnectedness in November 1830. What has not been explained, and the rectification of this is a major aim of the present thesis, is how cohesion was rapidly restored subsequently. According to Kadushin it was Georg Simmel, early in the

⁸⁵ Ibid., p. 12.

⁸⁶ Kadushin, C., *Understanding Social Networks* (Oxford: Oxford University Press, 2012), p. 4.

⁸⁷ Ibid., pp. 18-19.

⁸⁸ Hume, *The Learned Societies*, p.22.

⁸⁹ Ibid., p. 24. However, antiquarian Hume was aware, in 1847, that some Fellows of the Royal Society, amongst a new generation of agitators for reform of that institution, would 'oppose every candidate, on principle'. This would contribute to a change in the statutes and restriction on membership.

⁹⁰ Kadushin, *Understanding Social Networks*, p. 48.

twentieth century, who first enunciated a view of society as a cluster of overlapping networks that he called 'social circles'. Kadushin suggests that the greater the number of intersecting social circles of which an individual is a member, the greater that individual's 'social capital' and that persons who have access to many disparate social circles are more likely to be 'brokers'.⁹¹ It will be argued that it was Lubbock's social connectedness which accounted in no small way for his ability to act as a reconciler after November 1830.

As we shall see, Lubbock was a member of five learned societies and at least three clubs including the Athenaeum – 'instituted for the association of individuals known for their scientific or literary attainments' – for which the facilitation of acquaintance was the entire *raison d'être*. Founded in 1824, it immediately became, Lubenow believes, an 'intellectual and social magnet' for members of learned societies many of whom were 'deeply involved in club life' – 'a point that wants to be brought out more strongly', he suggests.⁹² Similarly, whilst advising the exercise of caution in not 'over-extending the argument' regarding the 'spatial turn', Seth Alexander Thevoz nevertheless believes that clubs like the Athenaeum 'have often been overlooked for their significance as a space'.⁹³ He notes that the Athenaeum, in contrast to cramped Georgian clubs such as Brooks's or White's, was 'the first club to be 'centred on a large capacious central lobby . . . a meeting point for exchanging the latest information'.⁹⁴ In addition to Lubbock, his pendulum colleagues Baily, Whewell and Kater were also founder members, as were nearly all of the most significant scientific figures from this time.⁹⁵ Somerset House, largely neglected by historians of science, is also deserving of study for its significance as a space in this period. Within its rooms, from the mid-1830s,

⁹¹ *Ibid.*, pp. 123-24, 164-65.

⁹² Lubenow, W.C., '*Only Connect*', pp. 125, 126, 267-68.

⁹³ Thevoz, S.A., *Club Government: How the Early Victorian World was Ruled from London Clubs* (London: I.B. Tauris, 2018), p. 103.

⁹⁴ *Ibid.*, p. 132.

⁹⁵ Waugh, F.G., *Members of the Athenaeum Club, 1824 to 1887* (London, 1887). Whewell's year of election is given as 1824 but, unlike the other three, his name does not appear in the first printed list dated 22 June 1824. Charles Babbage was conspicuous by not becoming a member.

were to be found meetings of the Royal, Geological and Astronomical Societies, together with those of the Council of the British Association and the Senate of the University of London.

‘If “background” features were important’, Morrell observed in a paper focusing on the career of Charles Lyell, ‘then they become foreground’.⁹⁶ Morrell’s ‘background features’ concerned, in particular, Lyell’s membership of London institutions. In addition to his being another founder member of the Athenaeum, Lyell belonged to five learned societies: principally the Geological in which he was active both as a contributor of papers and occasionally, and with considerable reluctance, as an administrator, but also the Royal, Zoological, Linnean and Geographical.⁹⁷ As Morrell noted, this required a considerable financial outlay on Lyell’s part – a total of nearly £200 to compound for life membership of the different bodies. ‘Lyell’s varying attachment to institutions can be understood in terms of his perceptions about their utility for him’, Morrell argued; he was always ‘conscious about the shape and direction of his career’.⁹⁸ Although Lyell’s correspondence demonstrates that he took pleasure in the social aspects of science – the meetings, the society dinners and soirees – it is at the same time clear that he was always keenly aware of the opportunity for advantageous social connection this provided.⁹⁹

In December 1836 Charles Lyell famously wrote to Charles Darwin, counselling as follows: ‘Don’t accept any official scientific place, if you can avoid it, and tell no one that I gave you this advice’. The letter was written during Lyell’s two-year tenure of the Presidency of the Geological Society which, in the same letter, he described as a ‘calamity’ because of

⁹⁶ Morrell, J.B., ‘London Institutions and Lyell’s Career: 1820-1841’, *British Journal for the History of Science* 9 (1976), p. 132.

⁹⁷ *Ibid.*, p. 139.

⁹⁸ *Ibid.*, p. 143.

⁹⁹ *Ibid.*; Lyell, C., *The Life, Letters and Journal of Sir Charles Lyell Bart*, vol. 2 (London: John Murray, 1881), pp. 7-9, 31-34. See, for example, the two letters from 1837.

the 'time annihilated'¹⁰⁰ While it is easy to see how Lyell's career focus may explain why he didn't accept administrative responsibility, it is more difficult to understand why some men *did*. Here we are referring not so much to the many 'ordinary' members of learned society councils, on most of which service was limited to two consecutive years followed by a at least one year off, but to the officers whose positions conferred upon them, *ex officio*, membership of that body's council for as long as they were in post. The Linnean Society, for example, to which Lyell was elected in 1819, was effectively run by eminent banker Edward Forster, Treasurer from 1816 until his death from cholera in 1849. During most of this time he was also the institution's senior Vice President, chairing the majority of its meetings including one in the week in which he died at the age of eighty-three. Similarly, Francis Baily, a successful City stockbroker and a founder member of the Astronomical Society, was, according to that institution's centenary history, 'the backbone of the society throughout its early years'.¹⁰¹ As either President, Vice-President or Secretary on numerous occasions he was its central figure during the first twenty-four years of its existence until his death in 1844.¹⁰² These two 'corporate actors' shaped the corporate identity of their respective institutions – the way of doing things.¹⁰³ Here, we will examine the influence of the principal corporate actor on the Royal Society stage: John William Lubbock. It is perhaps no coincidence that he was a family friend of both Baily, as we have already noted, and Forster who was a senior partner in the Lubbock bank.

¹⁰⁰ Lyell, C., *Life, Letters and Journals of Sir Charles Lyell, Bart*, Vol. 1 (London: John Murray, 1881), p. 475.

¹⁰¹ Dreyer and Turner, *History of the Royal Astronomical Society*, p. 29.

¹⁰² *Ibid.*, p.77; Herschel, J.F.W., 'Memoir of the late Francis Bailey', *Monthly Notices of the Royal Astronomical Society* 6 (1844), pp. 89-121.

¹⁰³ Kadushin, *Understanding Social Networks*, p. 68; Smith, J.E., *Memoir of the Late Sir James Edward Smith MD* (London: Longman, 1832), p. 278; Dreyer and Turner, *History of the Royal Astronomical Society*, pp. 26, 76. Forster, who was described by Linnean founder James Edward Smith as a 'sincere friend' maintained the Banksian ethos of the Society after Smith's death in 1832 in spite of his fellow Vice-President, Robert Brown, having been firmly in the reform camp since the late 1820s. Baily is credited with establishing accuracy of calculation as being fundamental to the work of the society, together with the encouragement of amateur observers.

It is now some years since Bruno Latour concluded his by-now-classic text, *Science in Action*, by reminding us that when trying to understand how scientific knowledge is produced ‘we should not overlook the administrative networks’.¹⁰⁴ The scientific administrator, however, remains a largely neglected figure for historians studying this period. A rare example of one such work is Frank James’s examination of Faraday’s role as the ‘administrative heart of the Royal Institution’ which led to his becoming, James suggests, ‘the most influential, if not the dominant, figure within the Royal Institution’.¹⁰⁵ Although very different personalities, the parallels here with Lubbock are clear. This thesis, then, is less about Lubbock the man of science, although it will be suggested that his achievements merit greater attention; it is more about Lubbock the forgotten administrator who reshaped the corporate identity of an ailing Royal Society, thus allowing it to retain its preeminent position in the scientific world.

Those who organise science are, it seems, rarely celebrated by their contemporaries and are almost never chosen as subjects for historical research. Lubbock’s last significant contribution to the scientific literature was *An Elementary Treatise on the Tides* of 1839 which summarised his tide studies of the 1830s.¹⁰⁶ By this time, however, research on the tides was now more closely associated, in public and scientific minds, with William Whewell who had assumed the mantle of ‘Tidology’. After this, aside from producing the occasional paper on some abstruse mathematical topic, Lubbock largely retired from scientific work. By the time Lubbock stepped down as Treasurer in November 1845, to concentrate on his bank and his estate, he was no longer the scientific figure of national importance that he had once been. ‘After many years of the most valuable services’, Society President the Marquess of

¹⁰⁴ Latour, B., *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge, Massachusetts: Harvard University Press, 1987), p. 257.

¹⁰⁵ James, F.A.J.L., ‘Running the Royal Institution: Faraday as an Administrator’, in James, F.A.J.L. (ed.), *The Common Purposes of Life, Science and Society at the Royal Institution* (Aldershot: Ashgate, 2002), pp. 130, 141.

¹⁰⁶ Lubbock, J.W., *An Elementary Treatise on the Tides* (London: Charles Knight, 1839).

Northampton told Fellows at the time, 'Sir John Lubbock has resigned the situation of your Treasurer'. Few within the Society, even then, would have been aware of the true extent of those 'most valuable services' or seen the need to honour the man responsible. Now, nearly two centuries on, the evidence is hidden away in minute books and correspondence. Over sixty years ago, Donald Cardwell advised that when studying the organisation of science we should consider all the 'internal factors' on which the 'successful prosecution of science' depends, including the 'ancillary educational system'.¹⁰⁷ It seems that historians have lost sight of this sound advice and have often adopted a blinkered approach to the study of the Royal Society in this period: their research has frequently been dominated by events such as the election of 1830 or the 'reforms' of 1847. Between these two episodes, as this study will demonstrate, Lubbock transformed virtually every aspect of the operation of the Society. In addition, he established the first English university degree in which the study of science was compulsory. These major developments in the organisation of science have been neglected by historians, as has the man who was the driving force behind them. This stems, in part, it will be argued, from a lack of awareness of Lubbock's high status within both science and society which has led to his being discounted as an individual worthy of historiographical attention.

To summarise therefore, the aim of this research is to improve our understanding of the organisation of science in England in the 1830s. Essentially, this is a biographical study: one which first positions its subject, John William Lubbock, in his family context before going on to explore, through him, the development of various institutions, notably the Royal Society, in which he was a figure of central importance. Focussing on one key individual, it seeks to provide an insight into how the Society was able to retain its primacy as a scientific institution while making significant organisational changes and establishing a working relationship with

¹⁰⁷ Cardwell, *The Organisation of Science in England*, p. 2.

the new British Association. The circumstances through which the Lubbock family came to occupy a prominent position in science are presented as a case study through which ideas about the cultural emulation of Whig intellectual society and the rising status of the mathematical sciences are examined. This study also provides an addition to the small body of literature relating to the beginnings of the University of London, highlighting its Whig, liberal Anglican origins and also the significant and innovative place of science in its degree courses. The importance of social connection provides a background to the whole thesis and is emphasised throughout.

This study relies principally on Lubbock papers from the archives of the Royal Society and University of London (Senate House). While it has been possible to access several collections online, the Covid pandemic of 2020/21 has precluded the visiting of other archives which might have yielded supplementary evidence. Although this has necessitated a reliance on secondary sources in some areas, it is unlikely that the broad thesis would have changed substantively.

Outline of Chapters

The thesis is presented in the form of a largely chronological narrative organised into six chapters.

Chapter 1 traces the journey of the Lubbock family into science over three decades and in three generations. The factors which contributed to this and influenced its direction are discussed in relation to ideas about cultural emulation of Whig intellectual society and also to ideas about the decline in the dominance of the 'polite' sciences of the Banksian era as they were eclipsed by mathematics and the physical sciences. Attention is drawn, also, to John William Lubbock's pioneering use of analytical mathematics and to the considerable

public awareness of his work, largely resulting from his contributions to Brougham's Society for the Diffusion of Useful Knowledge. This, together with his family's extensive social connections both within and outside the scientific community explain, it is suggested, John William Lubbock's acceptability both to reformers and to conservative elements within the Royal Society in 1830 when he was appointed its Treasurer.

Chapter 2 identifies the significant changes in the operation of the Royal Society which occurred in the period after the presidential election of November 1830 and demonstrates, through the presentation of new evidence from correspondence and committee minutes, that nearly all can be attributed to the actions of John William Lubbock. A major element in this was his assuming of the role of *Senior Vice President* at an early stage and his ability to bring about the rehabilitation of key reformers. While Lubbock's overhauling of the Society's financial arrangements has been documented, his wider role in the extensive modernisation of its procedures has not been recognised. Neither have the more nuanced changes achieved without formal revision of the Statutes, such as in the admission of new Fellows and the selection of the Council, for which he can be shown to have been responsible. The chapter challenges earlier work which either fails to see the true significance of the changes or views them as having resulted from the actions of reform groups and it provides a corrective balance to previous accounts which fail to acknowledge the importance of Lubbock's influence within the Society.

Chapter 3 has as its focus the close examination of the election for the University of Cambridge constituency of December 1832. In this, the first General Election to be held following the passing of the Great Reform Act, Lubbock was induced, by some of the most senior and respected men of science, to stand as a Reform (Whig) candidate. This at first sight insignificant event has been almost completely ignored by historians, as has the man himself. However, the extensive correspondence relating to the contest, together with

reports and comment in the press, offer an insight into Lubbock's character which is unique for a scientific figure in this period and provide confirmation of his high status within the scientific community. Primary sources also reveal the increasing level of public awareness of science and the interest in the question of the suitability of a man of science for parliament. The circumstances of Lubbock's late withdrawal as a candidate highlight the University's strong ties to the Church and the essentially conservative opinion prevailing within its parliamentary electorate.

Chapter 4 examines the realignment of the Royal Society as an institution in the 1830s. Lubbock, it is argued, was of central importance in determining the Society's position vis-à-vis the emerging British Association and he became a figure of greater significance in the new body than has been previously acknowledged. The factors which enabled the Royal Society to retain its primacy are discussed in relation to the organisation of science in this period. The considerable and early overlap in the composition of the Councils of the Royal Society and British Association, which this chapter demonstrates, suggests that some revision is necessary to current ideas about their separate nature of their development in this decade.

Chapter 5 attempts to evaluate the extent and significance of the organisational changes within the Royal Society in the 1830s. The position and power of the Royal Society President relative to that of its Council are considered with reference to the decline in President Sussex's support for Lubbock leading to the latter's resignation. Also, to the Council, by now containing many previous reformers, failing either to accept the Duke's (half-hearted) offers to step down because of ill-health or to introduce further reform measures. Attention is drawn to the significance of the creation of subject committees, the revision of the Election Certificate and Lubbock's analysis of Society finances in setting the Society on a path towards the reforms of 1847.

Chapter 6 presents new work on the foundation of the University of London in 1836 and on its early years. The twin catalysts for its foundation at this time are shown to be the desire on the part of the liberal Anglican Whig government to address Dissenter grievances regarding university education, together with the need to find a solution to the continuing problem of the regulation of medical education. The selection of members of the University's governing body, the Senate, is discussed as is Lubbock's pivotal role within it. The innovative nature of the University's new BA degree is demonstrated with special reference to the decision to make scripture optional while science, with a particular emphasis on the mathematical, was made compulsory.

Chapter 1. The journey of the Lubbock family into science

1.1 Introduction

On 30 November, 1830, the Fellows of the Royal Society chose as their new President the Duke of Sussex, rejecting John Herschel who had the support of a majority of the Society's men of science. The burden of this thesis is that, in the aftermath, it was the actions of John William Lubbock, the newly-appointed Treasurer, which averted the widely anticipated demise of the Society, and that he then led it through a process of reform and modernisation which strengthened its preeminent position within English science. The historiography largely fails to recognise the importance of Lubbock's role, or, at best, only hints at its possible significance.¹ While later sections will present much new evidence to redress this, it is important, firstly, to examine the process by which Lubbock came to be in a position, at the age of just twenty-seven, to lead the Society through this period of crisis. In doing so we will find that we shall need to discuss many of the important issues affecting science and society at the time.

Lubbock had been the nomination for Treasurer on the proposed Council lists of both Sussex and Herschel. In simple terms, therefore, he was the choice both of the more-conservative Fellows within the Society and of the reformers. In consequence, his election was assured and not, as Marie Boas Hall appears to have suggested, a surprise.² However, the Fellows soon discovered that they had elected not just a man who would be an efficient Treasurer, but one who would also demand the position of the *Senior* of the Vice-Presidents and carry the Society with him in instigating a process of reform. How this was achieved will be explored in the second chapter, but before doing so we must attempt to elucidate how it

¹ Cannon S.F., *Science in Culture* (Dawson: Folkestone, 1978), p. 41; Miller, D.P., 'The Royal Society of London 1800-1835: A Study in the Cultural Politics of Scientific Organisation', (Ph.D. thesis, University of Pennsylvania, 1981), p. 393.

² Hall, M.B., *All Scientists Now: The Royal Society in the Nineteenth Century* (Cambridge: Cambridge University Press, 1984), p. 64.

was that Lubbock was able to assume this leadership role. We shall see that there were essentially two elements, neither properly appreciated by historians and each of having a number of contributing factors. Firstly, there was his social position: he was the heir to a baronetcy and a large country estate, had been educated at Eton and Cambridge and was well-connected, not just within the scientific community but also at the highest levels, more generally, within society in what has come to be known as the 'Regency' era.³ To the Regency world he was a man of both 'rank' and 'fashion'. Secondly, his scientific attainments: by 1830, Lubbock had already achieved eminence as a physical astronomer and as a mathematician, that subject now being accorded the highest status within the sciences.

However, when Lubbock was born, on 26 March 1803, it was into a family who were neither Baronets nor in possession of a great country estate. Although bankers, they were not mathematicians, much less, astronomers. In a period of less than thirty years, the Lubbocks evolved from merchant bankers with Tory sympathies to baronets who were culturally and politically Whig.⁴ In three generations their scientific interests developed from the non-existent, via agricultural improvement, to physical astronomy. This chapter will explore the connection between the Lubbocks' attraction to Whig culture and politics and their increasing engagement with science. This will be examined within the context of the Whig party's revival in the first three decades of the nineteenth century in which it was able to reach out to the manufacturing and business worlds, and to educated men within the middling classes.⁵ Miller believed that it was possible to detect, in this same period, an

³ Historically and politically the Regency was the period from 1811 to 1820 during which the Prince of Wales acted as Regent. However, the term 'Regency' is often used to describe the later Georgian period. Characterised by distinctive cultural trends, it has no precise definition but is generally considered to begin around 1800 and continue until Victoria's accession in 1837.

⁴ Both Lubbock and his father, Sir John William Lubbock, stood for Parliament as Reform (Whig) candidates in the early 1830s.

⁵ For discussion of this see, in particular: Hay, W.A., *The Whig Revival* (Basingstoke: Palgrave Macmillan 2005); Bord, J., *Science and Whig Manners: Science and Political Style in Britain c.1790 - 1850* (Basingstoke: Palgrave Macmillan 2009); Mitchell, L., *The Whig World 1760 - 1837* (London: Hambledon Continuum, 2005); Hilton, B., *A Mad, Bad and Dangerous People?* (Oxford: Clarendon Press, 2006).

increasing value placed by the scientific community on mathematical competence.⁶ Science in the Banksian era (during the Royal Society Presidency of Sir Joseph Banks), was, he suggested, dominated by Natural History and utility as exemplified by the activities of the Linnean and Horticultural Societies, which had been established with Banks's blessing.⁷ During this period, he stated, 'many mercantile men . . . sought to acquire the cultural trappings of their social betters by joining the Antiquaries, the Linneans and the Horticulturalists'.⁸ With Banks's death in 1820, and the break-up of what Miller called the 'Banksian Learned Empire', the Geological and Astronomical Societies, he believed, asserted their independence by encouraging specialist research and introducing their own scientific disciplines. This included, for the Astronomers, techniques of mathematical analysis based on the 'continental' mathematics recently adopted and championed by Cambridge University. By 1830, the physical astronomer occupied a position of great esteem within the scientific world.

With a few notable exceptions, Newton, Davy, Darwin for example, the formative years of men of science are rarely the focus of historians. Here, with the Lubbocks, the sociological background is of fundamental importance. Examined through a biographical case study, the process runs through three generations of one family against a backdrop of changing social, political and scientific environments. Chronicling the events which ultimately produced Lubbock, the astronomer and mathematician, will enable us to illustrate this and also to examine the extent to which the family's narrative lends support to the various ideas discussed above. Relevant biographical detail, most of which has not been presented previously, will assist in the comprehension of the social and intellectual situations in which Lubbock was raised.

⁶ Miller, 'The Royal Society of London', p. 218.

⁷ *Ibid.*, p. 6.

⁸ *Ibid.*, p. 10.

To avoid confusion between three Lubbocks called John, two of whom have the middle name William, we will, in this chapter, call the subject of this thesis, Lubbock. His father is John William Lubbock and his great-uncle is John Lubbock. It will be helpful, also, to be familiar with the following family tree showing Lubbock (3rd Baronet) and his immediate forebears. (Darwinist John Lubbock, 4th Baronet, who was Lubbock's eldest son, is not part of this story and is not shown).

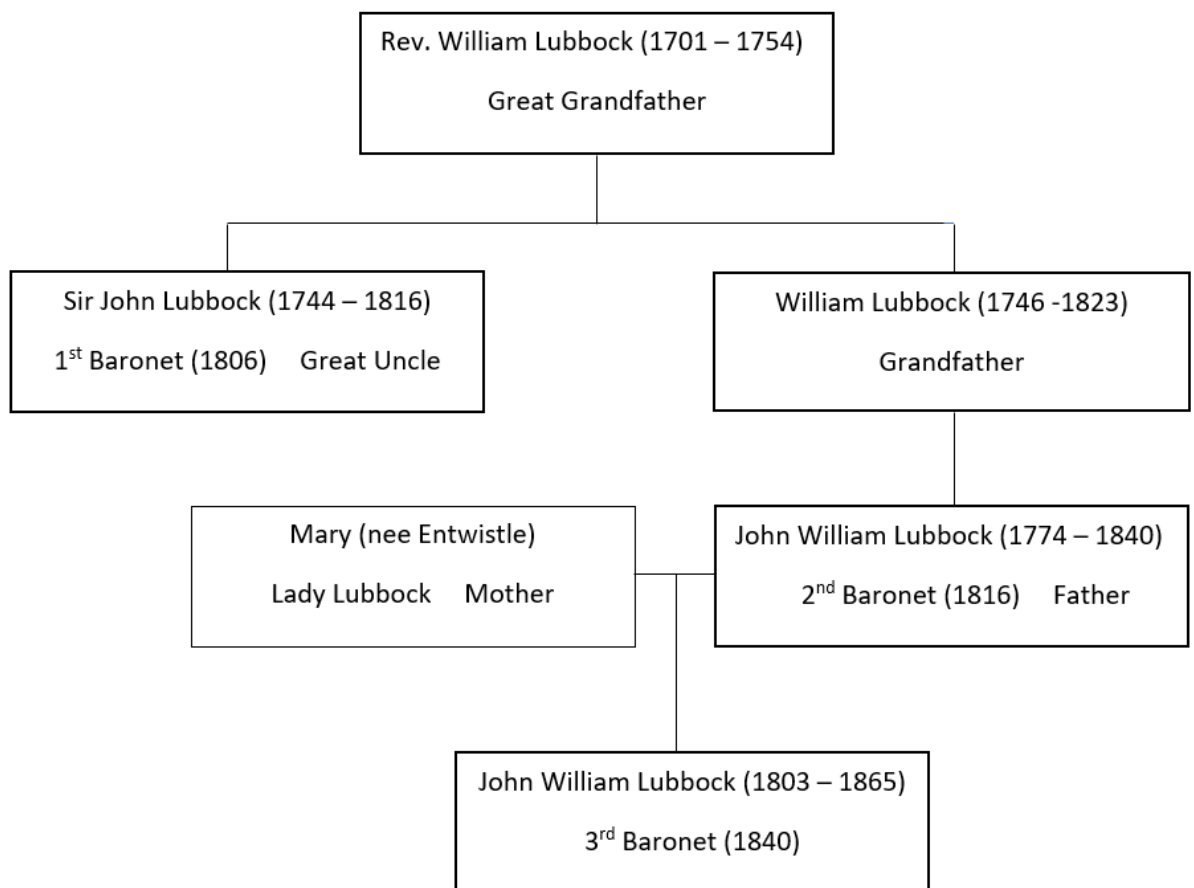


Figure 1.1 Lubbock family tree

1.2. The Fashionable World

Strangely, in a dissertation which focusses on a man of science, we begin with a section in which there is no science. More incongruously still, one might think, we start by discussing a house. Lubbock's great-uncle John built for the family a house located in the intellectual heart of the 'fashionable' West End. The House was (and still is) 23 St James's Place and it was Lubbock's London home from 1816 (when he was thirteen) until 1851. In July 1801, great-uncle John and his wife, together with his friend Samuel Rogers, also a banker, bought a house in St James's Place from the Duke of St Albans intending to redesign it for shared accommodation. When architectural difficulties precluded this, it was rebuilt as two adjoining houses, numbers 22 (Rogers) and 23 (Lubbock).⁹ At the time, John Lubbock owned properties in Stafford Place, (off Oxford Street), and St Mildred's Court, (in the City). He also rented Marble Hill Cottage (which he later bought) in Richmond. He had, it seems, no need of further accommodation, and, indeed, his new house in St James's Place would not be especially large, but Lubbock and Rogers had a particular desire to live in *this* location.¹⁰ The purchase and rebuilding were of sufficient interest to be reported in the *Morning Post's* 'Fashionable World'.¹¹ This was, in part, because Rogers, a celebrated poet, was one of the leading figures in London Society in the first half of the nineteenth century. He would be the Lubbocks' neighbour at No.22 for 50 years. John Lubbock was not a Whig, in fact he was at this time an independent MP for the Leominster constituency and broadly supportive of successive Tory governments.¹² His friend and next-door neighbour Rogers, however, *was* a Whig. Peter Clayden, who was married to Rogers' great-niece and who wrote an early biography, described Rogers as having an 'intimate association with the Whig leaders for the

⁹*Survey of London: Volumes 29 and 30, St James Westminster, Part 1*, F.H.W. Sheppard (ed.), (London, 1960), *British History Online* <http://www.british-history.ac.uk/survey-london/vols29-30/pt1>

¹⁰ Rogers in Prince's Street, Hanover Square, and Lubbock in Stafford Place, off Oxford Street.

¹¹ *Morning Post*, 18 July 1801, 21 October, 1802.

¹²Williams, M.J., 'Lubbock, John, (1744-1816)', www.historyofparliamentonline.org/volume/1790-1820/member/member-lubbock-john-1744-1816

first fifty years of this century' beginning with his acquaintance with Whig leader in the Commons, Charles James Fox.¹³ It was Fox who gave Rogers the advice that 'a distance [a view] is essential to a house, and that the Green Park is the best situation in London'. The bow windows of John Lubbock's and Samuel Rogers' new homes overlooked the Green Park with views (in the absence, then, of Belgravia) to Kensington Village (see fig. 1.2).¹⁴

¹³ Clayden, P.W., *The Early Life of Samuel Rogers* (London: Smith, Elder and Co., 1887), p. 276.

¹⁴ *Ibid.*, p. 448.

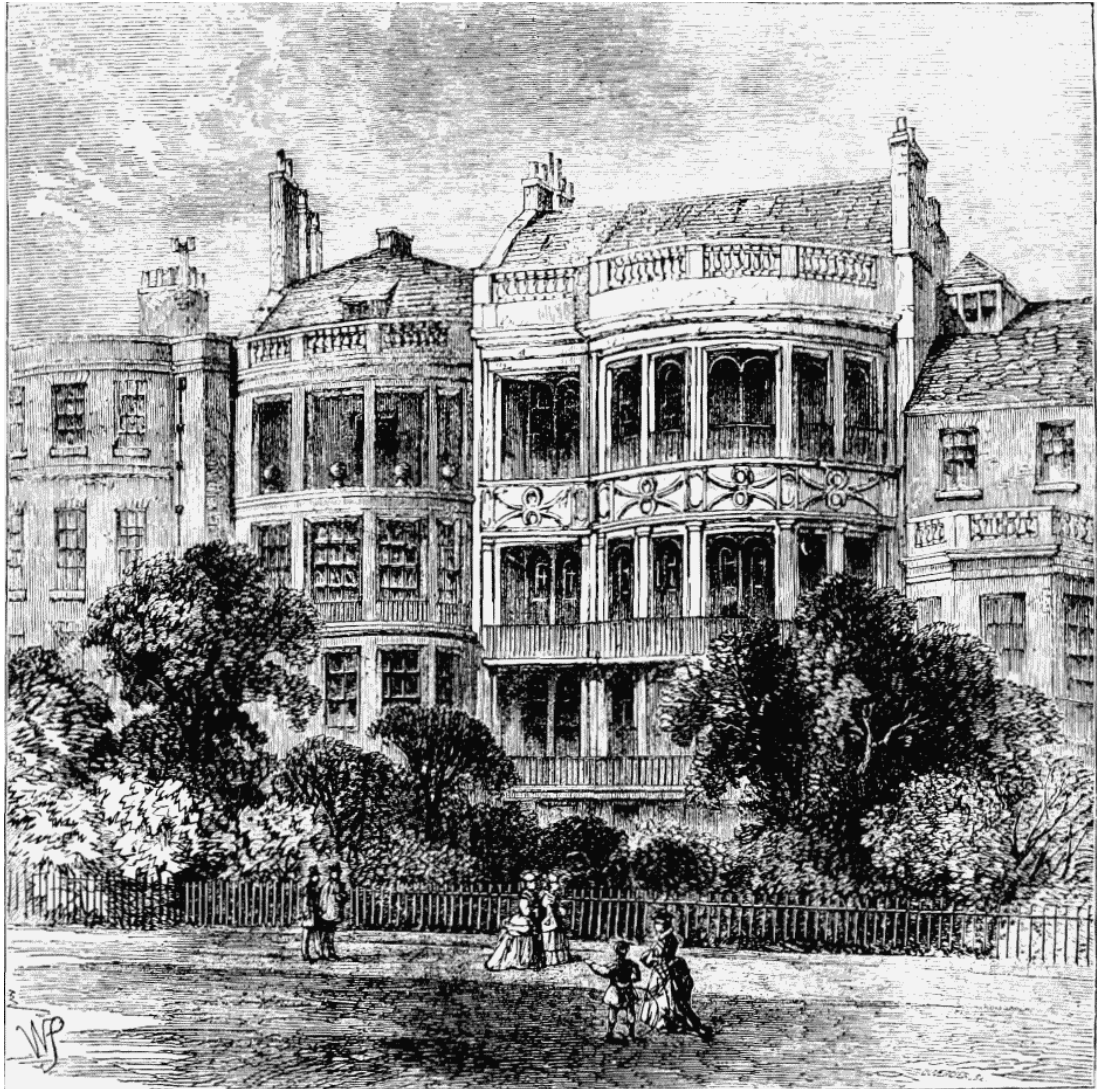


Figure 1.2 Samuel Rogers' House, Green Park front.¹⁵

Engraving from c. 1850. Roger's House (22 St James's Place) is on the left. The more prominent house on the right is the Lubbocks' house (23).

¹⁵ Edward Walford, 'St James St and neighbourhood', in *Old and New London: Volume 4* (London, 1878), pp. 165-181. *British History Online* <http://www.british-history.ac.uk/old-new-london/vol4/pp165-181>

No. 22 housed Rogers' famous art collection and it was the venue for the renowned breakfast parties which attracted the literary and artistic elite of the capital (see fig.1.3). Clayden concludes his *Early Life of Samuel Rogers* with the following remark:

It soon became known that the charming house in St James's Place, about which society was talking, was open to all who had claim to be regarded as men of letters, or artists, or wits, or statesmen; though of the latter, it was chiefly the Whigs who found themselves at home.¹⁶

Of course, these lines do not describe the Lubbocks' house but that of their friend and next-door neighbour, Rogers. However, the teenage Lubbock cannot have been unaware that outside his front door he might find, for example, Byron and Scott one day; Wordsworth and Coleridge the next. His was a 'fashionable' address and he had the Regency intellectual world on his doorstep, almost literally.

¹⁶ Clayden, *The Early Life of Samuel Rogers* p. 451.



Figure 1.3 'Samuel Rogers at his breakfast table'. Charles Mottram, 1823.¹⁷

¹⁷ Photo © Tate [Creative Commons CC-BY-NC-ND \(3.0 Unported\)](https://creativecommons.org/licenses/by-nc-nd/3.0/). The 1823 engraving 'Samuel Rogers at his Breakfast Table' by Charles Mottram (now in the Tate Britain) depicts an imaginary gathering of around 1815, about the time when the young Lubbock and his father moved into No. 23, following the death of great-uncle Sir John. Seen in the engraving are nineteen guests including the leading literary figures of the time (Byron, Coleridge, Scott, Southey, Wordsworth) and noted artists (Turner, Lawrence, Stothard). Also shown are the poet Thomas Campbell and the Whig politicians and conversationalists, Sir James Mackintosh and Richard Sharp. Senior Whig aristocrat, the Marquess of Lansdowne, is also present.

John Lubbock, as we have noted, was not a Whig, but his new house was situated in an area described by Mitchell as having ‘talismanic Whig names in every street and square’.¹⁸ The heads of three great Whig families, with whom the Lubbocks were later to be connected, had their London residences in close proximity. On the north side of Piccadilly were to be found, Devonshire House (Duke of Devonshire) and Lansdowne House (Marquess of Lansdowne). In St James’s Place itself, at no. 27, was Spencer House, London home of the Whig aristocrat, Earl Spencer, and his heir, Lord (Viscount) Althorp. Whig Grandees such as Lansdowne, Spencer, Althorp and also Bedford (5th and 6th Dukes) will feature prominently in the sections which follow. Around the corner, in St James’s Street was the Whig club, Brooks’s. Figure 1.4, detail from a map of 1797, shows the location of these premises and the future site of 23 St James’s Place.



Figure 1.4 Detail from Wallis’s Plan of the Cities of London and Westminster. 1797.¹⁹

¹⁸ Mitchell, *The Whig World*, p. 40.

¹⁹ ‘Wallis’s Plan of the Cities of London and Westminster, 1797’, *British Library Online Gallery*, www.bl.uk/onlinegallery/onlineex/crace/w/largeimage87954.html

Roy Porter, in his social history of London, describes how the years between the Restoration and Regency saw the 'birth of a residential quarter, the West End' to which 'grandeemes and gentry' flocked because it was 'the finest place to live – a place to spend money, to entertain or just to bask in being'.²⁰ 'St James's and Mayfair crowned the West End', he states, but 'not all the beau monde could live there . . . they were too dear'.²¹ Porter quotes poet Robert Southey's comments, written at the time when he was a frequent breakfast guest of Samuel Rogers in St James's Place:

London is more remarkable for the distribution of its inhabitants than any city of the continent. There is an imaginary line of demarcation which divides them from each other. A nobleman would not be found by any accident to live in that part which is properly called the City . . . whenever a person says that he lives at the West End of the Town, there is some degree of consequence connected with the situation.²²

Porter makes the important point that 'the West End could never have been sustained without overall vitality'.²³ A significant contributor to this in the early years of the nineteenth century was the Royal Institution, founded in 1799. Harriet Lloyd, in a recent study of the importance of a network of upper-class female subscribers to the Royal Institution in its early years, uses *Boyles' Fashionable Court and Country Guide* for 1803 to show that over three-quarters of these gave a 'fashionable' address.²⁴ The Royal Institution itself was located in fashionable Albemarle Street (off Piccadilly); it was 'fashionable and elegant', Morris Berman suggests, even though 'fashion and elegance were not its goals'.²⁵ Lloyd argues that it was the female subscribers who were principally responsible for the

²⁰ Porter, R., *London, a Social History* (Cambridge, Massachusetts: Harvard University Press, 1994), pp. 93, 96.

²¹ *Ibid.*, p. 110.

²² *Ibid.*, p. 95.

²³ *Ibid.*, p. 96.

²⁴ Lloyd, H.O., 'Rulers of Opinion: Women at the Royal Institution of Great Britain, 1799-1812', (PhD thesis, University College, London, 2018), p. 120.

²⁵ Berman, M., *Social Change and Scientific Organization: The Royal Institution, 1799-1844* (London: Heinemann, 1978), xxi.

Royal institution's lectures becoming assimilated into the London 'Season'.²⁶ Counted amongst their number was Lubbock's mother, Mary, residing at this time in fashionable Duke Street, Westminster, where Lubbock was born in 1803.²⁷ Lloyd notes that Berman considered the patronising of the Royal institution by aristocratic improving landlords to be explicable, in part at least, by their 'desire to share in a fashionable interest' in science but she points out that he 'did not discuss where this fashion came from'.²⁸ While Lloyd goes on to connect, persuasively, fashionable science at the Royal Institution to 'female influence' the wider question of how fashion originated is considered only in passing. 'An understanding of the implications of being called fashionable is imperative', she states, quite correctly, but why did being considered fashionable become so important in the closing years of the eighteenth century?²⁹

The appearance of Boyle's *Court Guide*, first published in 1793 and containing simply 'an alphabetical arrangement of the names and places of abode . . . of all the ladies and gentlemen of fashion' is indicative of the sudden increase in interest at this time in who was fashionable and where it was fashionable to live. Indeed, as figure 1.5 demonstrates, the very appearance of the word in newspapers shows a dramatic increase that can be pinpointed to the beginning of the nineteenth century.³⁰ It is in 1800, also, that fashionable is first recorded being used as a noun.³¹

²⁶ Lloyd, 'Rulers of Opinion', p. 113.

²⁷ *Ibid.*, p. 299.

²⁸ *Ibid.*, p. 31; Berman, *Social Change and Scientific Organisation*, p. 40.

²⁹ Lloyd, 'Rulers of Opinion', p. 31.

³⁰ Data from frequency search for 'fashionable' in British Library Newspapers accessed through Gale Primary Sources, <https://www.gale.com/primary-sources>

³¹ "fashionable, adj. and n." *OED Online*, www.oed.com/view/Entry/68392.

Number of editions in which the term 'fashionable' appears

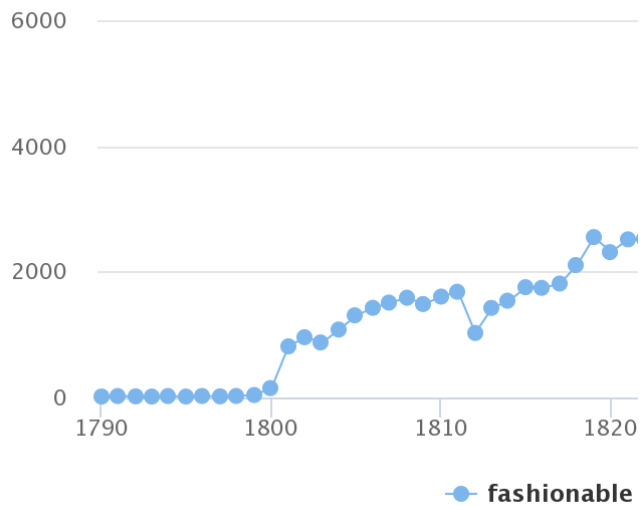


Figure 1.5 Appearance of the term ‘fashionable’ in London and Provincial newspapers: 1790-1820³²

Between 1790 and 1820, ‘fashionable’ appears in a total of 30,918 editions of newspapers. 13,697 (44%) of these are of London’s *Morning Post* which, in 1800, launched its regular ‘Fashionable World’ column. The *Post*’s circulation at this time was around 4,000 having risen dramatically from a mere 350 in 1795 following its acquisition by a new owner, Daniel Stuart, who gave ‘unremitting attention to . . . the copious supply of incidental news’.³³ Its circulation was now more than twice that of any other daily paper.³⁴ However, the paper’s readership represented only a small proportion (0.4%) of a total Metropolitan population of one million, as recorded in the first official census of March 1801.³⁵ In the first decade of the nineteenth century the *Post* sold for sixpence, a not-inconsiderable sum of which two pence

³² Gale Primary Sources, <https://www.gale.com/primary-sources>. Based on search results from 45 London and provincial newspapers. The word appears, on average, about 20 times in the 1790s, jumping to 180 in 1800 and 784 in 1801 before climbing throughout the century.

³³ ‘Newspapers’, *Encyclopaedia Britannica 1911*, https://en.wikisource.org/wiki/1911_Encyclop%C3%A6dia_Britannica/Newspapers The *Morning Post* was still in existence as a London daily at the time this article was written.

³⁴ Phillips, J.S.R., ‘The Growth of Journalism: The Stuarts and the Morning Post’ in Ward, A.W. and Waller, A.R., (eds.) *The Cambridge History of English Literature* 14 (1916), pp. 202-04.

³⁵ [The 1801 Census \(1911census.org.uk\)](https://www.1911census.org.uk). The total number of ‘Persons, including Children of whatever Age’, recorded was 1,011,157.

halfpenny was Stamp Duty, (increasing to three pence halfpenny in 1804).³⁶ The Government, Ed King suggests, was thus able to ensure that 'the circulation of newspapers could be restricted via the cover price to the rich and reputedly reliable members of society'.³⁷ These then were the readers of 'Fashionable World', drawn in increasing numbers not from the aristocracy, whose numbers remained roughly constant in this period, but from the business community.

'In order for there to be tastes', stated Pierre Bourdieu, 'there have to be goods that are classified as being in good or bad taste, distinguished or vulgar . . . and people endowed with principles of classification, tastes'.³⁸ The 'spontaneously accepted model', he suggested, sees a 'cultural producer – writer, artist . . . or journalist, as a rational economic calculator who manages to sense and satisfy needs . . . so as to draw the maximum possible profit from his capacity to steal a march on his competitors'.³⁹ Although Bourdieu considered this model unable to account for the 'universe of tastes' it does seem appropriate here in describing how Stuart and Boyle were able to make their publications indispensable to Regency society. According to Bourdieu, tastes are generated in an encounter between 'supply' (by 'producers') and 'demand' (from 'consumers') and this is particularly evident, he suggests, when an 'even greater number of people enter the race for appropriate cultural goods'.⁴⁰ Bourdieu illustrates this with reference to increasing numbers holding educational qualifications and seeking to 'behave in ways that are inscribed in their social definition' (e.g. by visiting museums) but it applies equally well to the ever-more-numerous, affluent and

³⁶ 'Newspapers', https://en.wikisource.org/wiki/1911_Encyclop%C3%A6dia_Britannica/Newspapers

³⁷ King, E., 'British Newspapers 1800-1860' *British Library Newspapers* (Detroit: Gale Cengage Learning, 2007).

³⁸ Bourdieu, P., *Sociology in Question* (London: SAGE Publications, 1993), p. 108.

³⁹ *Ibid.*, p. 110.

⁴⁰ *Ibid.*, pp. 111, 114.

aspiring urban-mercantile-classes of Regency London (say in the audience at a Royal Institution lecture), seeking to imbibe the 'social essence' of the aristocracy.⁴¹

With the status of a St James's Place address the Lubbock's found themselves listed regularly in the *Morning Post's* 'Fashionable Arrangements', in the select company of other hosts of high station. For example:

Fashionable arrangements for Saturday 6 April 1805

Earl of Buckingham's Grand Dinner, Grosvenor Place, Sir Drummond Smith's Grand Dinner, Hyde Park corner, Mrs Lubbock's Rout [large evening party], St James's Place.⁴²

Lloyd sees early nineteenth-century fashion as being particularly 'a form of female power with fashionable women leading the nation by example in dress, but also in behaviour, taste in music, art and literature'.⁴³ Indeed, it is often Lubbock's mother, Mary (whom we have met as a Royal Institution subscriber), rather than her husband, who appears in the fashionable news. She is noted, to give two of many examples, as one of the 'distinguished personages' taking a box for the season at Drury Lane Theatre, and also hosting a musical evening: 'Fashionable Parties: Lady Lubbock gives a Grand Concert of Vocal and Instrumental Music, this evening, in St James's Place. About 200 cards are issued'.⁴⁴ Lady Lubbock's cards were quite possibly delivered via Boyle's 'very successful and expeditious' delivery service – for once delivering cards of thanks, visits, masks, balls, concerts &c, £1.1s.0d'.⁴⁵

Lubbock, therefore, was the child of fashionable parents and resided at a fashionable address. On 22 November 1820, at the age of seventeen and almost exactly ten years before

⁴¹ *Ibid.*, p. 113.

⁴² *Morning Post*, 1 April 1805.

⁴³ Lloyd, 'Rulers of Opinion', p. 46.

⁴⁴ *Morning Post*, 30 June 1818; *Morning Post*, 29 May 1817.

⁴⁵ Boyle, P., *Boyles' Fashionable Court and Country Guide* (London, 1819), front matter.

his election as Royal Society Treasurer, he appears in his own right in the fashionable news. Lubbock is 'noticed' by the *Morning Post* in one of the boxes at the Royal Cobourg Theatre (now the Old Vic) which were 'filled with rank and fashion'.⁴⁶ The distinction between rank and fashion is an important one. While it was possible to become fashionable, for example by residing at the right address, being in possession of rank required one to occupy a defined social position, one that was high and, to be accorded the greatest status, hereditary. For the Lubbocks this was a baronetcy, awarded first to Great-Uncle John Lubbock in 1806.

1.3 Rank

On the north wall of the chapel of St Andrew in Westminster Abbey is a white marble memorial to Sir Humphry Davy. The tablet was erected by his widow, Lady Jane Davy, following Davy's death in Geneva in May 1829, and the inscription, which is in block capitals, reads as follows:

TO THE MEMORY OF
SIR HUMPHRY DAVY BARONET
DISTINGUISHED THROUGHOUT THE WORLD
BY HIS
DISCOVERIES IN CHEMICAL SCIENCE

The large capitals ensure that the passer-by, glancing at the memorial, cannot escape registering that Sir Humphry was a Baronet, that 'dignity' having been granted to him on 20 October 1818.⁴⁷ Davy biographer David Knight suggests that 'since he had no children, this

⁴⁶ *Morning Post*, 22 November 1820. Lubbock is in the company of 'Mr Ricardo and family', the celebrated (fashionable?) political economist David Ricardo being a friend and colleague of Lubbock's father.

⁴⁷ *London Gazette* 17410, p.1875, 20 October 1818.

hereditary honour was an empty one'.⁴⁸ However, this comment, which would seem to be based on Knight's interpretation of the remarks of earliest biographer, John Ayrton Paris (published 1831), shows a misunderstanding of the significance of the award.⁴⁹ Important though its hereditary nature might have been, a baronetcy also conferred upon the recipient a permanent position in society just one place below the aristocracy. Jan Golinski, in a more recent biography, probably comes closer to understanding Davy's likely feelings about the award when he describes him, in his later years, as 'basking in the titles of baronet and president of the Royal Society'.⁵⁰ Indeed, as is demonstrated by the memorial tablet and by the title of Paris's work – *The Life of Sir Humphry Davy, Bart. LL. D* (present author's underscore) – Davy remained a baronet, even beyond the grave. His was not the first, or the last scientific baronetcy to become 'extinct' with the death of the grantee during the nineteenth century. Davy's predecessor as Royal Society President, Joseph Banks (ignoring William Hyde Wollaston's brief caretaker interregnum), also died without having 'heirs male of his body lawfully begotten'.⁵¹ Later in the century, in 1864, geologist Charles Lyell was pleased to accept a baronetcy even though he was sixty-seven years of age and his wife was some years beyond child bearing. Like Davy, Lyell was elevated to a baronetcy a decade or so after having received a knighthood. Lyell died in 1875; above a eulogistic inscription by Thomas Henry Huxley, the words on the stone over his grave in Westminster Abbey state simply:

⁴⁸ Knight, D., *Humphry Davy: Science and Power* (Cambridge: Cambridge University Press, 1998), p. 112. Knight incorrectly dates the award of the baronetcy to January 1819.

⁴⁹ Paris, J.A., *The Life of Sir Humphry Davy, Bart. LL.D.*, vol. 2 (London: Colburn and Bentley, 1831), p. 152. Paris, who felt that Davy should have received a pension for 'a service of such importance to society as the invention of the Safety-lamp', stated that '... they [the Government] tardily and inadequately acknowledged the claims of Davy [to Parliamentary reward] by bestowing upon him the dignity of a Baronetcy – a reward, it must be confessed, that neither displayed any regard of his condition, nor implied the just estimate of his merits'.

⁵⁰ Golinski, J., *The Experimental Self: Humphry Davy and the Making of a Man of Science* (Chicago: University of Chicago Press, 2016), p. 84.

⁵¹ *London Gazette* 17410, p.1875, 20 October 1818.

CHARLES LYELL
BARONET F.R.S.
AUTHOR OF
"THE PRINCIPLES OF GEOLOGY"

The title, 'Sir', is considered superfluous and omitted. Lyell had a status above a mere knight and it is that fact, still important into the later years of the Victorian period, which is recorded for posterity.

During the Regency, the appearance of the latest edition of *Debrett's Baronetage*, first published in 1802, was always eagerly anticipated, even by those who did not appear in it.⁵² To illustrate this, we can turn to that keenest observer of Regency Society, Jane Austen. She begins her last completed novel, *Persuasion*, written sometime after 1809 and published in 1818, as follows:

Sir Walter Elliott of Kellynch Hall, in Somersetshire, was a man who, for his own amusement, never took up any book but the *Baronetage*; there he found occupation for an idle hour, and consolation in a distressed one; there his faculties were roused into admiration and respect by contemplating the limited remnant of the earliest patents; . . . and there, if every other leaf were powerless, he could read his own history with an interest which never failed.⁵³

A few pages later, Austen introduces Elliott family friend, Lady Russell – 'Herself the widow of only a knight, she gave the dignity of a baronet all its due'. Austen's rank-obsessed Regency readers would understand her description of characters acutely aware of their station and of the significance of being a baronet. The 'patent' to which she refers is the 'Patent of Creation', the formal document drawn up in confirmation of the award and for which the new baronet was required to pay a considerable fee. This was a further barrier to all but the

⁵² *Debrett's Baronetage, Knightage and Companionage* vol. 2 (London, 1824), pp. 964 – 1127; Hilton, *A Mad, Bad and Dangerous People?*, p. 134.

⁵³ Austen, J., *Persuasion* (London: John Murray, 1818), p. 1.

most affluent. John Lubbock, who was sixty-two years old and without issue, was also liable for an additional fee so that the baronetcy could pass to his nephew, 'in Remainder'.⁵⁴ The following correspondence from William Pollock, Whitehall, dated 30 April 1806, provides details of the considerable expense involved for the recipient:

I send you herewith your Patent of Creation and enclosed the acct of my disbursements in carrying it through and request the favour of your remitting me the balance. The fees on the creation of a Baronet and to his heir male only are £205:4:6, the addition is on acct of extending it in Remainder to your nephew.

And the following day:

Received 1st May of 1806 of Sir John Lubbock Bart four hundred and sixty-three pounds one shilling and four pence being the fees of his patent of Creation of Baronet.

£463:1:4⁵⁵

In 1806, when he was awarded a baronetcy, John Lubbock was considered to be an 'eminent banker', but what did this mean? The following graph (figure 1.6) using data from Frederick Price's 1890 publication, *A Handbook of London Bankers*, shows the growth in the number of merchant banks in the eighteenth century.⁵⁶

⁵⁴ In 1820, surgeon Sir Astley Cooper, First Baronet, FRS, fifty-two years old and unmarried, made use of this facility to enable his baronetcy to pass to a nephew.

⁵⁵ William Pollock to Sir John Lubbock, 30 April 1806, Royal Society Lubbock Collection P 194.

⁵⁶ Price, F.G.H., *A Handbook of London Bankers* (London: Simpkin, Marshall, Hamilton, Kent and Co., 1890). Price was a partner in the bank of Childs and Co and an original member of the Council of the Institute of Bankers.

Number
of banks

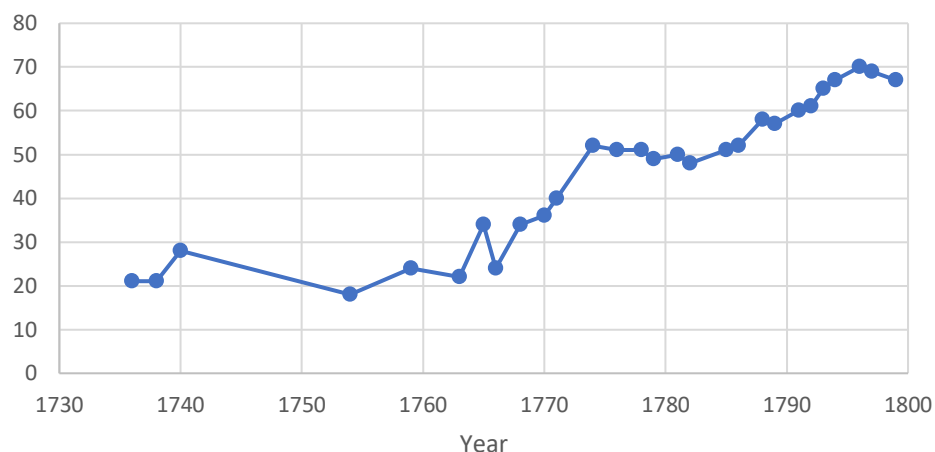


Figure 1.6 Number of London Banks, 1736-1799

In 1763, there were 22 London Banking houses, the number having remained fairly constant since the earliest year for which Price was able to find data. By 1774, barely a decade later and the year in which the Lubbock bank was formed, the number had more than doubled to 52 as further merchant banks arose to service the needs of international trade. Many were short lived however: 7 of the 52 banks listed in 1774 do not appear in 1776, while 6 new banks are recorded. Twenty-five years later, in 1799, only 24 of out of the 52 (46%) are still in operation. Included amongst these is the bank of John Lubbock who qualifies as 'eminent' if for no other reason than through the continuing existence of his banking house. It meant more than this, however. Price, whose research on the history of Childs and Co. led him to 'look through a vast quantity of old cheques, bills and cash-notes', noted that in this period

all banker's drafts were personally endorsed by the banker and usually witnessed by one of the clerks; the banker, and often many successive generations of his family (as with the Lubbocks), came to be intimately associated with the house.⁵⁷ Michael Lisle-Williams has suggested that the merchant banks came to possess a 'core of social relations and practices' resulting from 'generation after generation of family proprietorship and control bolstered and legitimated by the integration of the main merchant banking families into the cohesive upper stratum of British society'.⁵⁸ The starting point for this integration was often a baronetcy.

Boyd Hilton suggests that 'some bankers continued to see their destiny in terms of land ownership and a barony', and offers Francis Baring as an example.⁵⁹ To be strictly accurate, Baring himself was created a baronet, rather than a baron, in May 1793.⁶⁰ Although a baronet was not considered part of the aristocracy – a position of 'dignity' worthy of honour rather than one of nobility – a baronetcy was still a hereditary position in society which, when coupled with a country seat (Baring's Stratton Park, for example, purchased 1801), allowed the recipient to emulate the great aristocrats (such as the first Marquess of Lansdowne who was Baring's patron). Jonathan Clark, discussing the development of 'a middle class' in this period, (a concept which he rejects), states that 'it was the elite which . . . formed the most class-like class, the most cohesive, the most self-aware and the most sharply defined'.⁶¹ John Cannon, too, noted the exclusivity of the English Peerage which remained roughly constant in number (a little below 300) throughout most of the eighteenth

⁵⁷ Price, *A Handbook of London Bankers*, v.

⁵⁸ Lisle-Williams, M., 'Coordinators and Controllers of Capital: The Social and Economic Significance of the British Merchant Banks', *Social Science Information* 23 (1984), pp. 95-128.

⁵⁹ Hilton, *A Mad, Bad and Dangerous People?*, p.132.

⁶⁰ Baring's grandson, the third baronet, also Francis, was raised to the Peerage as Baron Northbrook in 1866. Baring's second son, Alexander, was created Baron Ashburton in 1835.

⁶¹ Clark, J.C.D., *English Society 1688 – 1832* (Cambridge: Cambridge University Press, 1985), p. 91.

century.⁶² Although Pitt created a number of new peerages in the final two decades, they were bestowed primarily upon established members of the gentry.⁶³ Clark suggests that it was the ‘middle ranks’ who were ‘most conscious of the adjacent group ideals of the elite’.⁶⁴ Some indication of this can be found in a table produced by Regency statistician Patrick Colquhoun showing ‘A general view of Society in England and Wales. . . in 1803’.⁶⁵ Based on information from the Census of 1801 and returns for Pitt’s income tax, introduced in 1799, Colquhoun’s figures have been subject to some revision and reinterpretation but, broadly speaking, as Hilton notes, ‘historians have seen little reason to challenge them’.⁶⁶ Published in the year John Lubbock was created a baronet, (1806), the table identifies no fewer than 48 categories, ranked by annual income. The first seven categories are shown below (table 1.1):

Occupational category	Number of heads of families	Aggregate number of persons in the family of each rank	Average annual income (£)
The King	1	50	200,000
Temporal Peers and Peeresses	287	7,175	8,000
Spiritual Lords and Bishops	26	390	4,000
Baronets	540	8,100	3,000
Eminent merchants, bankers	2,000	20,000	2,600
Knights	350	3,500	1,500
Esquires	6,000	60,000	1,500

Table 1.1 Colquhoun’s social structure of England and Wales, 1801 (first seven categories).

⁶² Cannon, J., *Aristocratic Century: The Peerage of Eighteenth Century England* (Cambridge: Cambridge University Press, 1984), p. 15.

⁶³ Hilton, *A Mad, Bad and Dangerous People?*, p. 132.

⁶⁴ Clark, *English Society 1688 – 1832*, p. 91.

⁶⁵ Colquhoun, P., *A Treatise on Indigence* (London, 1806). Data from Hilton, *A Mad, Bad and Dangerous People?*, p. 127.

⁶⁶ Clark, *English Society 1688 – 1832*, p. 91; Hilton, *A Mad, Bad and Dangerous People?*, p. 126.

With the Peerage largely closed to the eminent banker, a baronetcy represented a more realistic path to social elevation and separation from others who might have what Hilton calls 'pretensions to *upper-class gentility*'.⁶⁷ The first decade of the 1800s saw the largest number of Baronets created in any such period in the history of the Baronetage – 57. Of these, nine (including John Lubbock's) were created during Lord Grenville's ministry of 1806/7, the short-lived, Whig-dominated coalition known as the 'the Ministry of all the Talents'. This is an appropriate point at which to examine the circumstances of the John Lubbock's award and the family's wider involvement with political issues subsequently.

Lord Grenville, was appointed Prime Minister by George III on 11 February 1806 following the death of William Pitt the previous month. One of his ministry's first acts was to have John Lubbock M.P. created a baronet. *The History of Parliament* states of John Lubbock that 'he was well disposed to the Grenville Ministry which made him a Baronet'.⁶⁸ That John Lubbock was granted 'the dignity of a Baronet' on 1 April, just seven weeks after Grenville became Prime Minister, is suggestive, also, of the new Whig-led government's desire to secure, in its first weeks, the support of an influential MP.⁶⁹ This interpretation is strengthened by John Lubbock's being presented to the King on 24 April, 'on his being created a Baronet' The presentation was made at a private levee (only seven presentations being made) and he was presented by Earl Spencer (Whig aristocrat of 27 St James's Place) who was the ministry's Home Secretary.⁷⁰ Whig leader in the Commons Charles James Fox, who was the Foreign Secretary, described John Lubbock, somewhat disparagingly, as 'the only parvenu in the batch'. Prime Minister Grenville, however, who is credited by Hay with taking a more liberal position on economic policy than many of his Whig colleagues, was aware, as was his predecessor Pitt, of the importance of enlisting the support of a growing

⁶⁷ Hilton, *A Mad, Bad and Dangerous People?*, p. 126.

⁶⁸ Williams, 'Lubbock, John, 1744-1816'.

⁶⁹ *London Gazette*, 1 April, 1806.

⁷⁰ *Morning Post*, 24 April 1806.

upper-middle class headed by bankers and merchants.⁷¹ In the 1805 volume of the series 'Public Characters', the following comment appears in a biographical entry for Sir Francis Baring, Bart., explaining the circumstances of his being created a baronet by Pitt.

We have observed in the course of our biography that a class of men, which may be called the *monied aristocracy*, is peculiar to this country and by the prudent encouragement of many successive ministers has obtained a more than ordinary weight and influence in the civil government.⁷²

John Lubbock's support, therefore, meant more than one vote in parliament. 'Many electors', Mitchell notes, 'were of the opinion that the Whigs were simply irresponsible in money matters' and, indeed, their leaders, such as Sheridan and Fox, were constantly in debt.⁷³ Finance, however, soon became central to government policy. Grenville's Chancellor of the Exchequer, Lord Henry Petty (the future third Marquess of Lansdowne), introduced an 'Auditors of Public accounts Bill' in May 1806 for 'the more effectually auditing of the public accounts' which drew attention to the 'enormous amount of unaudited accounts' ('534 millions of money').⁷⁴ This was followed, in January 1807, by a 'New Plan of Finance', a series of measures including the rescheduling of debt repayments in an attempt to 'maintain the balance of economic interests' in a continuing period of warfare.⁷⁵ Although it is now generally agreed that this progressive step would not have been practicable in the long term, Bord sees this as evidence that 'a distinctive style of administrative liberalism was being

⁷¹ Williams, 'Lubbock, John, 1744-1816'; Hilton, *A Mad, Bad and Dangerous People?*, p. 127; Hay, *The Whig Revival*, p. 19.

⁷² Stephens, A., *Public Characters of 1805* (London, 1805), pp. 34-35.

⁷³ Mitchell, *The Whig World*, p. 51.

⁷⁴ 'Auditors of Public Accounts Bill', HC Debate 23 June 1806, *Hansard* vol. 7 cc791-799.

⁷⁵ Bord, J., 'Whiggery, Science and Administration: Grenville and Lord Henry Petty in the Ministry of all the Talents, 1806-7', *Historical Research* 76 (2003), p. 118; 'New Plan of Finance', HC Debate 29 January 1807, *Hansard* vol. 8 cc564-593.

practised' by a ministry which is otherwise 'dismissed because it failed in most of its declared objectives'.⁷⁶

Grenville's Ministry did not last beyond the March of 1807. John Lubbock's address to 'the worthy electors of the borough of Leominster' at the election held two months later indicates that he had taken up, once again, the Tory watchwords of 'Altar and Throne'. 'My conduct shall continue to be guided by principles of the most loyal attachment to my King', he stated, 'and by a steady determination to support the constitution both in Church and State'.⁷⁷ After the briefest of flirtations with the Whigs, therefore, John Lubbock resumed his independent line and he was generally sympathetic to successive Tory governments until he was succeeded as MP for Leominster, in 1812, by his nephew, Lubbock's father, John William.

As a parliamentarian, John William, who was MP for Leominster between 1812 and 1820, is described as being 'an independent member, inclined to opposition' during this period of Tory administration. He did, however, vote with the government in the rejection of the Whig-sponsored Bill for admitting Catholics to both Houses in 1813.⁷⁸ John William Lubbock can be closely associated with the movement for free trade. In March 1815 he voted against the introduction of the Corn Laws intended to maintain high cereal prices, this in spite of his by now being the owner of a farm growing both barley and wheat. His support for free trade is perhaps not unconnected with his long-term friendship with David Ricardo who, when disowned by his family in 1793, was supported by the Lubbock bank.⁷⁹ In 1818, the now Sir John William Lubbock, Bart. voted for the Repeal of the Additional Tax on Leather, on a motion by Whig Commons leader, Lord Althorp (Earl Spencer's son).⁸⁰ Anthony

⁷⁶ Bord, 'Whiggery, Science and Administration', p. 108.

⁷⁷ *Hereford Journal*, 6 May 1807.

⁷⁸ Williams, M.J., 'Lubbock, John William, (1773-1840).

www.historyofparliamentonline.org/volume/1790-1820/member/member-lubbock-john-william-1773-1840

⁷⁹ Sraffa, P., *The Works and Correspondence of David Ricardo* Vol. 10 (Cambridge: Cambridge University Press, 1955), p. 66.

⁸⁰ *Morning Post*, 29 May 1813; *Hereford Journal*, 15 March 1815, 25 March 1818.

Howe has emphasised the ‘sometimes covert power of “the City”’ in explaining the adoption of free trade policies from the beginning of the 1820s.⁸¹ In contrast, William Gramp considered business interests to have had only a ‘minor part’.⁸² ‘The merchants of London did not want to jeopardise their respectability by becoming a force to be reckoned with’, he stated.⁸³ Nevertheless, there was a change in Tory government policy leading to a freeing up of trade in the 1820s (although this did not extend to any change in the corn laws) and it is generally agreed that a key event (‘salient’ suggested Gramp) was the London merchants’ petition for free trade of 1820.⁸⁴ The petition, which argued for unilateral free trade, was the work of merchant and economist, Thomas Tooke, a friend and colleague of John William Lubbock. Together, in the 1820s, they acted as ‘Commissioners for Investigating the Claims for Compensation’ consequent upon premises being demolished ‘to make way for the East India, the West India and the London Dock’.⁸⁵ In the 1830s they were both senior members of the boards of the St Katharine Docks Company and the London and Birmingham Railway.

In September 1820, in a period of widespread concern about civil unrest following Peterloo (August 1819), John William Lubbock, by now a significant landowner in Kent, demonstrated his willingness to defend the landed interest by accepting a commission as one of the county’s Deputy Lord Lieutenants with responsibility within the West Kent Militia.⁸⁶ During the 1820s, although the Marquess of Lansdowne continued to make speeches advocating free trade and the recognition of the new South American states – a ‘wide field opened for commercial speculation’ – the Whigs, as Hay shows, lacked leadership, coherent policies or any real willingness to address the question of reform.⁸⁷ By

⁸¹ Howe, A.C., ‘Free Trade and the City of London, c. 1820-1870’, *History* 77 (1992), p. 392.

⁸² Gramp, W.D., ‘How Britain turned to Free Trade’, *The Business History Review* 61 (1987), p. 87.

⁸³ *Ibid.*, p. 110.

⁸⁴ *Ibid.*, p. 87.

⁸⁵ *Morning Post*, 9 February, 1824.

⁸⁶ *London Gazette*, 16 January 1821.

⁸⁷ ‘The New Administration – Exposition of the Late Ministers’, HL Debate 2 May 1827, *Hansard* vol. 17 cc448-498.

the end of the decade, however, in spite of Lansdowne having split the party by leading a section into coalition in the governments of Canning and Goderich in 1827, the Whigs had united behind Earl Grey and Lord Althorp – in Bord’s words an ‘alliance between High and Young Whiggery’.⁸⁸ At the same time, largely through the work of Brougham in the Commons and around the country, they had begun to shed the image of being ‘merely the creature of a few aristocratic families’.⁸⁹

In 1830, John William Lubbock and Thomas Tooke’s brother, William, stood as a Reform (Whig) candidates for Truro, being defeated through electoral malpractice. When a petition to the Commons eventually succeeded in having the result nullified, John William Lubbock declined to stand again. In February 1831, he was at the head of a group of merchants and bankers which presented (through Lord Althorp) a petition to Parliament ‘recognising the necessity of temperate reform’.⁹⁰ That same month, he and his son (Lubbock) became members of the Whig club, Brooks’s, nominated by Lansdowne, thus confirming their party allegiance.⁹¹ In their politics, it is Lansdowne to whom the Lubbocks can be said to be closest ideologically – pragmatic and moderate. Brooks’s was the scene of the ‘great meeting of the Whig Party’ on 13 May 1832, which rejected any compromise on the issue of reform, leading to the Reform Bill’s receiving Royal assent on 7 June.⁹² In December 1832, in the first election after the passing of the Act, Lubbock himself stood unsuccessfully as a Whig candidate for the University of Cambridge constituency (see Chapter 3). He was ‘applied to’ by the Whigs for a ‘vacancy in the City Representation’ in 1833, but declined the ‘proffered honour’.⁹³ The Lubbocks, therefore, became Whigs

⁸⁸ Bord, J., ‘Patronage, the Lansdowne Whigs and the problem of the Liberal Centre, 18287-8’, *The English Historical Review* 117 (2002), pp. 78-93 (p.90).

⁸⁹ Hay, *The Whig Revival*, pp. 111-75 (p.143).

⁹⁰ *Spectator*, 5 February 1831.

⁹¹ Williamson, V.A., *Memorials of Brooks’s from the Foundation of the Club 1764 to the Close of the Nineteenth Century* (London: Ballantyne, 1907), pp. 116-17.

⁹² *Ibid.*, p. 260.

⁹³ *Spectator*, 10 August 1833.

politically (and Liberals in future generations), as a result of the changing political climate, particularly in relation to reform and free trade.

The baronetcy did not recruit John Lubbock to the Whigs. It did, however, give him status in London Society. The *Morning Post* of 4 June 1808 illustrates this. Under the heading 'Birthday Carriages' the paper printed descriptions of the 'equipages' (carriage, horses and liveried attendants) in which those of high status would be making their way to St James's Palace to pay their respects to King George III on the occasion of his birthday.⁹⁴ The *Post* gave detailed descriptions of each in order that lesser individuals lining Pall Mall might recognise the occupants. At the head of the list is a description of the 'new handsome Landau' of 'HER MAJESTY' followed by that of Royal Society President, 'SIR JOSEPH BANKS, BART' – 'a handsome swan-neck coach' with 'silver mouldings' (in contrast to Her Majesty's which were only brass). The third carriage described is that of 'SIR JOHN LUBBOCK, BART.: A light Perch chariot and barouche seat; body painted a bright lake [crimson], with the arms in quarters on the panels, encircled with a tasteful foliage, heightened with gold; the carriage vermillion'. The Baronetcy, and having enough money to both embrace and display the lifestyle which should accompany it, allowed the Lubbocks to move in higher 'circles of acquaintance' which now included the Court.⁹⁵ That the title had an effect, not necessarily positive, beyond the immediate family is demonstrated by the observations of Lubbock's cousin, Henry Bury (his mother's nephew), concerning what he saw as its deleterious effect on the family of Anne Eliza, the sister of Lubbock's father. 'They were haunted', he recalled, 'by the recollection that they had a baronetcy in the family & by the necessity, self-imposed, of keeping up their "position"'.⁹⁶ It is revealing, also, that Bury chose to qualify 'baronetcy' with '(tho' only a city one)'. In 1806, the baronetcy lacked a country estate to accompany it.

⁹⁴ *Morning Post*, 4 June 1808.

⁹⁵ Mitchell, *The Whig World*, pp. 15-37.

⁹⁶ Unpublished recollections of Henry Bury, c1855, Lubbock family archive.

This would be remedied in 1808, not by great-uncle John Lubbock, but by his nephew John William, Lubbock's father.

1.4 'Spirit of improvement'

Towards the end of the eighteenth century many of the more affluent members of British society became preoccupied with 'improvement'. As Asa Briggs observed, the idea was not an invention of this period, 'it had a long and respectable ancestry', but it was at this time, he believed, that 'the word improvement itself, which now sounds sober, respectable and emotionally threadbare', became capable of 'stimulating daring flights of imagination'.⁹⁷ As the century closed, improvement, particularly in relation to agriculture, became fashionable, a form of cultural expression for the aristocracy and for the upper-middle classes emulating them. This was accompanied by a distancing of improvement from its strictly utilitarian origins. The 'image of improvement', Jan Golinski suggests, became one of scientific progress 'without disruption to the social order', of benefit to humanity but in a 'stable and stratified society'.⁹⁸ It is 'improvement' which brought the Lubbock family into the scientific community but which also consolidated their position in the upper stratum of society.

Late in 1799, John William Lubbock, then 24 years old and only recently married, paid 50 guineas to become a Hereditary Subscriber to, and Proprietor of, the newly incorporated Royal Institution of Great Britain, entitled to a 'perpetual transferable share in the house of the Institution . . . and two transferable tickets . . . to all the Philosophical Lectures and Experiments'.⁹⁹ Since it could be said that John William's subscription to the

⁹⁷ Briggs, A., *The Age of Improvement, 1783-1867* (London: Longman, 1959), p. 1.

⁹⁸ Golinski, J., *Science as Public Culture* (Cambridge: Cambridge University Press, 1992), pp. 6, 9-10, 108.

⁹⁹ *Prospectus, Charter, Ordinances and Bye-Laws of the Royal Institution of Great Britain, Incorporated by Charter* (London, 1800), pp. 34-59.

Institution represents the first step in the Lubbocks journey into science, it is important to consider why he should want to do this.

The men who first proposed setting up the establishment that would be called the Royal Institution had utilitarian purposes in mind. Some indication of this is given by its full title: 'Royal Institution of Great Britain for diffusing the knowledge, and facilitating the general introduction of useful mechanical inventions and improvements; and for teaching by courses of philosophical lectures and experiments, the application of science to the common purposes of life'.¹⁰⁰ Benjamin Thompson, Count Rumford, is considered to be its Founder, but members of the Board of Agriculture and Internal Improvement', which had come into existence in 1793, also played a significant part in its establishment. As noted by Berman, twenty-six out of the first fifty-seven Proprietors (see below) were either Official or Honorary Members of the Board.¹⁰¹ Its first president, Sir John Sinclair, Bart. MP, was, R.L. Plackett believed, 'the outstanding improver of agriculture in Scotland', the 'ideology of improvement' being central to his pioneering work on population statistics.¹⁰² In May 1793, Sinclair had persuaded the House of Commons to move an address to the Crown as follows:

That his faithful Commons are persuaded, if such an institution were to take place, that such inquiries might be made into the internal state of the country, and a spirit of improvement so effectually encouraged, as must naturally tend to produce many important national benefits, the attainment of which His Majesty has ever shown a most gracious disposition to promote.¹⁰³

With George III giving his royal assent and patronage shortly afterwards, 'Farmer George' lent encouragement of the highest rank to the 'spirit of improvement'.¹⁰⁴

¹⁰⁰ Ibid., title page.

¹⁰¹ Berman, *Social Change and Scientific Organization*, pp. 33-74, esp. p. 41.

¹⁰² Plackett, R.L., 'The Old Statistical Account', *Journal of the Royal Statistical Society* 149 (1986), p. 248.

¹⁰³ Clarke, E., *History of the Board of Agriculture, 1793-1822* (London, 1898), pp. 7-8.

¹⁰⁴ Ibid., p. 9; Crawford, R., 'English Georgic and British Nationhood', *ELH* 65 (1998), pp. 136-37. While, as Rachel Crawford discusses, the King's nickname may not actually have originated with his farming efforts, it took hold in this period.

Rumford's original proposals for a 'Public institution', agreed by a 'Select Committee' of eight in February 1799, were 'sent round privately among their friends and others whom they thought likely to countenance the scheme' with the result that 'fifty-eight of the most respectable names were sent in' before the first meeting at Sir Joseph Bank's house, Soho Square, on 7 March 1799.¹⁰⁵ The Introduction to the *Proposals* begins with what is, in effect, a lament that improvement is not more fashionable:

The slowness with which improvements of all kinds make their way into common use, and especially such improvements as are most calculated to be of general utility, is very remarkable; and forms a striking contrast to the extreme avidity with which those unmeaning changes are adopted, which folly and caprice are continually bringing forth and sending into the world under the auspices of fashion.¹⁰⁶

While these words do appear in the first *Prospectus* published early the following year, they have less prominence. The *Prospectus*, which is based heavily on Rumford's earlier words, makes a clear statement of utilitarian intentions:

The two chief purposes of the ROYAL INSTITUTION, being the speedy and general diffusion of the knowledge of all new and useful improvements . . . and teaching the application of scientific discoveries to the improvement of arts and manufactures in this country, and to the increase of domestic comfort and convenience.¹⁰⁷

However, the *Prospectus*, which is believed to be largely the work of one of the first managers, Sir John Coxe Hippisley, Bart., concludes with two sentences not in the original *Proposal*:

But in estimating the probable usefulness of this Institution, we must not forget the public advantages that will be derived from the general diffusion of a spirit of experimental investigation and improvement among the higher ranks of society.

¹⁰⁵ *Proposals for Forming by Subscription, in the Metropolis of the British Empire, a Public Institution* (London, 1799), pp. 16-22.

¹⁰⁶ *Ibid.*, p.3.

¹⁰⁷ *Prospectus, Charter, Ordinances and Bye-Laws of the Royal Institution of Great Britain*, p. 7.

When the Rich shall take pleasure in contemplating such mechanical improvements as are really useful, good taste, with its inseparable companion, good morals, will revive: - rational economy will become fashionable.¹⁰⁸

Lloyd, discussing Davy's lectures at the Royal Institution, suggests that its location in the 'heart of London's fashionable world' was 'problematic' for the early managers as fashion was often seen as 'in opposition to the projects of chemistry which were supposed to aim at utility'.¹⁰⁹ While there may be some truth in this, there was never any question of the Institution's not having a fashionable West End location.¹¹⁰ Jon Klancher, seeking to explain the rapid abandonment of many of Rumford's aims (teaching, exhibiting etc.), suggests that, soon after the Institution's foundation, manager and Vice-President, Thomas Bernard, 'moved quickly to reformulate the institute's mission'.¹¹¹ Klancher sees Bernard, assisted by a 'new collaborator, Sir John Hippisley', as having steered it in the direction of publicly-driven displays for an . . . all too fashionable urban audience'.¹¹² He quotes Bernard's report to Proprietors of May 1803 in which it was stated that the Institution had been successful in 'giving fashion to science and of forming a centre of literary and philosophical attraction'.¹¹³ The concluding sentences of the *Prospectus* of 1800 suggest that an early intention was that 'public advantages' were to be achieved through the 'diffusion of a spirit of . . . improvement among the higher ranks'. In doing so improvement was to be made 'fashionable'.

¹⁰⁸ Ibid., p. 15. These sentences are not in the version of the *Prospectus* dated 21 January 1800.

¹⁰⁹ Lloyd, H.O., 'Davy's lectures at the Royal Institution', Transcript of video, www.futurelearn.com/info/courses/humphry-davy/0/steps/44620

¹¹⁰ Tyrrell, H.J.V., 'Acquiring and Constructing the Royal Institution', in James, F.A.J.L. (ed.), *The Common Purposes of Life: Science and Society at the Royal Institution of Great Britain* (Aldershot: Ashgate, 2002), p. 48. Managers Count Rumford and Thomas Bernard 'examined the prospect of renting' a house in Bond Street before settling on 21 Albemarle Street.

¹¹¹ Klancher, J., *Transfiguring the Arts and Sciences* (Cambridge: Cambridge University Press, 2013), p. 63

¹¹² Ibid.

¹¹³ Jones, B., *The Royal Institution: Its Founder and First Professors* (London: Longmans, Green and Co., 1871), p. 205.

John William Lubbock was not one of the fifty-eight who had registered their interest by March, 1799. Probably, he received one of the 500 copies of the proposals 'distributed among such Persons as the Managers may think most likely to give their assistance in forming the Institution', completed the form 'annexed' to it indicating that he was 'disposed to contribute to the execution of the Plan' and then returned it as directed to Sir Joseph Banks.¹¹⁴ Those doing so were 'requested to consider themselves as Candidates for Proprietors' places until they shall have been elected as such by a majority of the Managers'.¹¹⁵ John William Lubbock, therefore, became one of 281 original Proprietors through being elected by the first Managers, these being:

Earl Spencer, Count Rumford, Richard Clark Esq, who had been elected for a three-year term

Earl of Egremont, Rt.Hon. Sir Joseph Banks, Richard Joseph Sullivan, Esq – two years

Earl of Morton, Rt. Hon. Thomas Pelham, Thomas Bernard Esq – one year¹¹⁶

In becoming a Proprietor John William Lubbock was, very publicly, joining a group containing substantial numbers of the higher ranks. Not including Hon. and Rt Hon., 68 of the proprietors were drawn from those with a high station in society, as shown below (table 1.2):

¹¹⁴ *Proposals for forming . . . a Public Institution*, p. 48.

¹¹⁵ *Ibid.*, p. 49.

¹¹⁶ *Ibid.*, p. 45.

Rank	Duke	Earl	Baron	Bishop	Baronet	Knight
Number of Proprietors	4	17	20	2	21	4

Table 1.2 Number of Royal Institution proprietors by rank.¹¹⁷

John William Lubbock's fellow proprietors included the heads of four senior Whig aristocratic families: the Dukes of Bedford and of Devonshire, the Earl Spencer (a first Manager and the Institution's second President, from 1813 to 1825) and Lord Holland.¹¹⁸ It would be incorrect, however, to suggest that the Institution's management was in any way dominated by Whigs: Benjamin Thompson, Count Rumford, who is considered to be the prime mover in the setting up of the Institution, was an American-born Royalist and he was assisted in his venture by Royal Society President and High Tory, Sir Joseph Banks, at whose house the first meeting of proprietors took place. 48 Proprietors were Fellows of Banks's Royal Society. The Earl of Morton, Royal Institution Manager and Royal Society Vice-President, was Banks's deputy on the (rare) occasions when he was unable to Preside.

As has already been noted, Lloyd has highlighted the importance of women subscribers, one of whom being Lubbock's mother Mary, in making the Royal Institution fashionable. She points, in particular, to the influence of a small group, (never more than twelve in number), of 'distinguished patronesses' who were given power over female subscriptions. Lloyd connects their activities with those of the eighteenth century 'bluestockings', pursuing philanthropic projects and presenting learning as virtuous.¹¹⁹

¹¹⁷ *Prospectus, Charter, Ordinances and Bye-Laws of the Royal Institution of Great Britain*, pp. 63-67.

¹¹⁸ *Ibid.*

¹¹⁹ Lloyd, 'Rulers of Opinion', pp. 117, 128.

Moyra Haslett has shown that such 'bluestocking gatherings', continued to be considered the 'preserve of an aristocratic elite', into the nineteenth century, with only those of 'talent and rank' admitted.¹²⁰ At the Royal Institution, Lloyd argues, these upper-class women 'made great diffusers of scientific knowledge' with the 'power of being able to change tastes'.¹²¹ Haslett's image of an upper-class intellectual woman, often subject to satire, chimes with the recollections of Lubbock's cousin, Henry Bury, recalling visits to his aunt, Lady Mary Lubbock:

Her Ladyship generally placed somebody next to her on the sofa, & conversed in the lowest whisper & in an earnest tone as if the subject of discussion where of the most mysterious character & of (at least) European importance – whereas it perhaps related to the chance of having to go into court mourning & the expediency of delaying the purchase of another costume . . .¹²²

Lloyd's distinguished patronesses include Lady Elizabeth Hippisley, the wife of long-serving Royal Institution manager Sir John, who is known to have had an interest in practical chemistry. Lloyd states that Lady Hippisley 'corresponded with Davy and other chemists about her experiments' and that 'Davy gave her a method of analysing fossil shells'.¹²³ Early in 1804, Davy advised the Board of Management, that Lady Hippisley had made a 'valuable contribution of minerals' for the establishment of a mineralogical collection.¹²⁴ The Hippisleys are, perhaps, the Lubbocks' earliest connection to active participation in science: they are often found together in the fashionable news, particularly after John William succeeded his father as baronet in 1816. Most notably, in June 1817, Sir John William and

¹²⁰ Haslett, M., 'Bluestocking Feminism Revisited: The Satirical Figure of the Bluestocking', *Women's Writing* 17 (2010), p. 439.

¹²¹ Lloyd, 'Rulers of Opinion', p. 231.

¹²² Unpublished recollections of Henry Bury, c1855, Lubbock family archive.

¹²³ Lloyd, 'Davy's lectures at the Royal Institution'.

¹²⁴ Unwin, P.R. and Unwin, R.W., 'Humphrey Davy and the Royal Institution of Great Britain', *Notes and Records of the Royal Society* 63 (2009), p. 15.

Lady Lubbock were presented to Queen Charlotte at a 'Drawing Room' held at the Queen's Palace (Buckingham House) by Sir John and Lady Hippisley, respectively.¹²⁵

Klancher considers the 'Institution' to have been 'a historic invention at the turn of the nineteenth century', which marked the start of a relatively short-lived 'age of institutions'.¹²⁶ All modelled to some degree on the first, the Royal, they 'became distinctive for the social makeup of their spectators'. 'The Royal' he states, 'claimed its "fashionables"', the Surrey and London had their dissenters of all kinds, the Russell drew in its more professional audience'.¹²⁷ They were distinctive, too, he suggests, in 'what kinds of authority were at work in administering them'.¹²⁸

The London Institution for the Advancement of Literature and the Diffusion of Useful Knowledge was founded in 1806, largely due to the efforts of Whig MP, Richard (Conversation) Sharp, a prosperous London merchant from a Dissenter family, and Royal institution Proprietor and banker, Sir Francis Baring.¹²⁹ John William Lubbock, along with a number of other Royal Institution Proprietors, became a Proprietor of the London Institution (where he was also a Visitor between 1812 and 1820).¹³⁰ Berman described this as a 'breakaway movement' with 'institutional control' and the 'uses of science' at issue.¹³¹ The London's Managers and Visitors were to be City men like Lubbock, in contrast to the Royal's largely aristocratic mix laden with Dukes and Earls.¹³² What Berman saw as a 'changed constituency' at the London is evident from the almost total absence of aristocratic names

¹²⁵ *Morning Post*, 27 June 1817; *Morning Chronicle*, 27 June 1817; *La Belle Assemblée*, July 1817.

¹²⁶ Klancher, *Transfiguring the Arts and Sciences*, pp. 1-2, 27.

¹²⁷ *Ibid.*, p. 3.

¹²⁸ *Ibid.*, pp. 5-6.

¹²⁹ Upcott, W and Brayley, E.W., *A Catalogue of the Library of the London Institution* (London, 1835), vi.

¹³⁰ Berman, *Social Change and Scientific Organization*, p. 92; *The Charter and Bye-laws of the London Institution for the Advancement of Literature and the Diffusion of Useful Knowledge* (London, 1823), p. 66.

¹³¹ Berman, *Social Change and Scientific Organization*, p. 92.

¹³² *Prospectus, Charter, Ordinances and Bye-Laws of the Royal Institution of Great Britain*, p. 91.

in the list of Proprietors.¹³³ City addresses predominate, John William Lubbock's is given as Mansion House Street (where his bank was located) rather than St James's Place. 'The *City* character was stamped upon every stage of the proceedings', stated a contemporary observer, Thomas Frognall Dibdin, describing the institution's foundation.¹³⁴ It was to be, as Berman noted, 'an institution for merchants and bankers'.¹³⁵ Proprietors shares were 'fixed for the present at 75 guineas', a considerable sum reflecting, perhaps, an anxiety to avoid the financial difficulties with which the Royal (which had initially charged 50 guineas) had been afflicted.¹³⁶ It also served to emphasise that the London was not to be considered inferior to her older sister.

In May 1825 John William Lubbock is recorded as being one of four 'promoters' of the 'City of London Literary and Scientific Institution', which opened that month, at 165 Aldersgate Street, for the purpose of instructing the 'middle and commercial classes'.¹³⁷ John William became one of four Trustees who, nine years later and with the Institution having a new lecture theatre and Library of over 5,000 books, were thanked by members for becoming 'personally responsible for the debt, originally amounting to 1,000/'.¹³⁸ The City of London Institution seems to have escaped the notice of historians even though it was in existence for about twenty-five years from its foundation.¹³⁹ Unlike the Royal and the London

¹³³ Berman, *Social Change and Scientific Organization*, p. 92; *The Charter and Bye-laws of the London Institution*, pp. 51-78. The 1,000 proprietors listed in 1825, for example, include only two aristocrats: former banker Lord Carrington and the Marquess of Bute, noted for developing the coal and iron industries.

¹³⁴ Dibdin, T.F., *Reminiscences of a Literary Life* (London: Major, 1836), p. 238.

¹³⁵ Berman, *Social Change and Scientific Organization*, p. 92.

¹³⁶ *A Catalogue of the Library of the London Institution*, vi; Berman, *Social Change and Scientific Organization*, p. 19. By 1807 the cost of Royal Institution Proprietorship had risen to 200 guineas.

¹³⁷ *Morning Post*, 21 May, 1825.

¹³⁸ *Spectator*, 8 March 1834, 6 September, 1834.

¹³⁹ *The Scots' Magazine*, 1 November 1825; *Morning Chronicle* 10 September 1847; Hudson, J.W., *The History of Adult Education* (London: Longman, 1851), p. 169; *Daily News*, 6 May 1853. The City of London Literary and Scientific Institution was founded on 30 May 1825. 'It is gratifying to observe . . . that this Institution flourishes' the *Morning Chronicle* wrote in 1847, but by about 1850 it seems to have disappeared. It is not included in Hudson's list of metropolitan institutions (1851) although he makes reference to its foundation in 1825. In 1853 the lease on its premises was up for sale.

it was intended for those of more modest means and it was established in the wake of the financial collapse of the Surrey Institution (1807-1823) and the failed attempt to resurrect this as the Metropolitan Literary Institution.¹⁴⁰ Both Klancher, more recently, and J.N. Hays in his earlier examination of the 'London lecturing empire', consider there to have been just four 'major' or 'formal' institutions – the Royal, the London, the Surrey and the Russell – but the City of London, which was of similar character to the Russell, is deserving of inclusion and further scholarly research.¹⁴¹

The City of London's founders invited political economist John Ramsay McCulloch, the leading disciple of the recently deceased Ricardo, to deliver a speech at the institution's opening. Scotsman McCulloch began by observing that while in his native land 'the middling . . . orders have had access for a long period to our universities . . . England has hitherto remained destitute of seminaries for the scientific and literary instruction of the middling ranks of society'.¹⁴² This was to be remedied by 'the delivery of lectures on the most interesting and important departments of Literature and Science; including Polite Literature, History, Mathematics, [and, appropriately,] the principles of Trade and Commerce'.¹⁴³ To these subjects would soon be added 'French, German, Italian, Greek and Latin Languages; 'the knowledge of all the modern languages is by means of these institutions widely diffused in this metropolis', observed the *Morning Chronicle*.¹⁴⁴ As Klancher highlights, with the emergence of Institutions in London in the early 1800s, the universities would have to accommodate a 'new entrant into their sphere'.¹⁴⁵ Institutions like the City of London provided education for those who were denied access to Oxford or Cambridge – the many

¹⁴⁰ Klancher, *Transfiguring the Arts and Sciences*, p. 5; *Morning Post*, 13 March 1823.

¹⁴¹ Klancher, *Transfiguring the Arts and Sciences*, p. 69; Hays, J.N., 'The London Lecturing Empire', in Inkster, I. and Morrell, J. (eds), *Metropolis and Province: Science and British Culture, 1780-1850* (London: Hutchinson, 1983), p. 94.

¹⁴² 'A Discourse delivered at the Opening of the City of London Literary and Scientific Institution, 30th May 1825', *The Scots' Magazine*, 1 November 1825.

¹⁴³ *Ibid.*

¹⁴⁴ *Morning Chronicle*, 30 October 1829.

¹⁴⁵ Klancher, *Transfiguring the Arts and Sciences*, p. 44.

for whom their financial situation, faith or gender was an insuperable barrier. The annual subscription for gentlemen was two guineas which the *Morning Chronicle*, reviewing the progress of the institution in 1829, considered to be 'trifling in its amount for each individual member but important by its useful application'.¹⁴⁶ The 'Ladies Subscription to the lectures' only, was 'one guinea per annum' suggesting that some (most?) were not expected to want access to the library, for which a further half guinea was required. John William Lubbock's involvement with the City of London Institution, beginning in 1825, enhanced his standing within the community and enabled him to be seen to be discharging the social obligations of a man of rank, in the manner of a true member of the aristocracy. However, it also demonstrates an active interest in popular education, one that would be echoed, two years later, by his son's joining the Society for the Diffusion of Useful Knowledge. Socially, however, Sir John William Lubbock moved in higher circles, the highest of which were to be found at the *British Institution*.

The British Institution for Promoting the Fine Arts in the United Kingdom, founded in 1805 and opening at 52 Pall Mall in September of that year, was an exclusive private society formed to exhibit works of art.¹⁴⁷ It is one of Klancher's five 'major arts-and-sciences institutions' found in the Metropolis, the other four being the Royal, London, Surrey and Russell.¹⁴⁸ Spring and Summer exhibitions were held each year, usually showing paintings on loan from members. John William Lubbock, not yet having inherited the baronetcy, became a Hereditary Governor in 1814. For this he had first to be nominated by an existing governor and then subscribe '100 gns or upwards in one sum' and be 'balloted for'.¹⁴⁹ The prestige attached to this may be gauged from the following report in the *Morning Post* of 27 June:

¹⁴⁶ *Morning Chronicle*, 30 October 1829.

¹⁴⁷ Smith, T., *Recollections of the British Institution for Promoting the Fine Arts in the United Kingdom* (London: Simpkin and Marshall, 1860), pp. 1-14.

¹⁴⁸ Klancher, *Transfiguring the Arts and Sciences*, p. 69.

¹⁴⁹ *Catalogue of Pictures, British Institution for Promoting the Fine Arts in the United Kingdom* (London, 1814), pp. 6, 8.

The British Institution – The great number of illustrious personages and lovers of the Fine Arts who compose the list of Governors of this Institution gives a happy presage to its future eminence. Since the commencement of the present year, the following Noblemen and Gentlemen have had their names inscribed in the list of patrons of British Art.¹⁵⁰

John William Lubbock appears in the list of nineteen names which follow and which is headed by that of the Marquess of Lansdowne. The list of Governors for 1814 includes the Prince of Wales, who was the Institution's President, and all the Royal Dukes and Princesses. To visit to the galleries, therefore, was to mingle with the elite. The Duke of Bedford was a Vice-President and, from 1815, a Director. The Earl Spencer was a Visitor.¹⁵¹ Linda Colley sees the British Institution as being a primarily aristocratic concern which 'allowed patricians to influence the development of British Art without conceding a national gallery', to 'flaunt . . . wealth and culture and seem a patriot into the bargain'.¹⁵² Klancher, however, believes it was 'less straightforward', pointing out that a number of leading City merchants were significant figures in the early days of the institution. One such was John Julius Angerstein who was important both as a lender and an administrator.¹⁵³ While it seems that John William Lubbock never loaned a painting to the Institution, his next-door-neighbour and fellow banker, Samuel Rogers (of 22 St James's Place), contributed to nearly every exhibition. Like Angerstein, he had invested his wealth in fine art and his time in becoming a connoisseur of it. In 1814, he loaned six paintings, (five by Gainsborough) to the exhibition staged 'in Honour of the Memory of those Distinguished Artists and for the Improvement of British Art'.¹⁵⁴ 'Improvement', here, relates to the Institution's School of Art and the practice of opening the galleries from between August and November so that students ('rising artists' –

¹⁵⁰ *Morning Post*, 27 June, 1814.

¹⁵¹ *Catalogue of Pictures, British Institution*, pp. 6, 8.

¹⁵² Colley, L., *Britons: Forging the Nation, 1707-1837* (New Haven Ct: Yale University Press, 2005), p. 176.

¹⁵³ Klancher, *Transfiguring the Arts and Sciences*, p. 71.

¹⁵⁴ *Catalogue of Pictures, British Institution*, title page.

mostly in their early twenties) could make ‘studies’ after the summer exhibition had closed to visitors.¹⁵⁵ As Klancher points out, the Institution’s ‘Improvement of British Art’ was strictly controlled with rules governing what part of a painting might be copied; ‘no artist could play any role in its management whatever’.¹⁵⁶ ‘Improvement’ would not be allowed to threaten the property of the aristocrat (or affluent merchant) by facilitating the copying or forgery of their priceless paintings.

John William Lubbock’s fellow bankers, the Barings, were heavily involved with the British Institution. Sir Francis Baring (first Baronet) was one of first Directors, chairing their first meeting in 1805.¹⁵⁷ Following his death in 1810, son Thomas succeeded him as Baronet and as one of the Institution’s Governors and Directors.¹⁵⁸ Fine Art became a major interest of the Baring family (other sons, Alexander and Henry, were also Governors) and a means of consolidating their position in Society. In 1816, Sir Thomas loaned twenty paintings to the Institution for an exhibition of ‘Pictures of the Italian and Spanish Schools’; ten were by Leonardo da Vinci.¹⁵⁹ One of these, a cartoon for the ‘Last Supper’, shared the South Wall of the South Gallery with just one other exhibit, a Raphael cartoon loaned by ‘His Majesty’.¹⁶⁰ The Lubbocks, however, turned, not in the direction of Art to enhance their status, but, somewhat indirectly through the acquisition of a country estate, to Science.

John William Lubbock did not move into St James’s Place until the death of his uncle in 1816. Up to this time he resided at 19 Duke Street (since demolished), on the other side of St James’s Park, which he had, as reported in June 1802, ‘fitted up in an elegant and

¹⁵⁵ Smith, *Recollections of the British Institution*, p. 39.

¹⁵⁶ Klancher, *Transfiguring the Arts and Sciences*, p. 71.

¹⁵⁷ *Ibid.*, p. 11.

¹⁵⁸ *Catalogue of Pictures, British Institution for Promoting the Fine Arts in the United Kingdom*, (London, 1813), p. 4.

¹⁵⁹ *Catalogue of Pictures of the Italian and Spanish Schools, British Institution for Promoting the Fine Arts in the United Kingdom* (London, 1816), pp. 11-17.

¹⁶⁰ *Ibid.*, p. 16.

sumptuous stile [sic]'.¹⁶¹ In 1808, he purchased an estate – High Elms, in Downe, West Kent, for £5,250. This action cannot be unconnected to his being aware, from April, 1806, that he would inherit a baronetcy from his uncle and that he himself had, by now, an heir, male, to whom the baronetcy would pass. We have already made reference to Hilton's observation with regard to the Baring bankers' land ownership 'destiny'.¹⁶² Sir Francis Baring bought Stratton Park in 1801 from the Duke of Bedford and over the next seven years he remodelled the house and filled it with the 'finest furniture and the best old masters' at a cost at the time of £150,000.¹⁶³ Perhaps Baring was an inspiration for the more modest High Elms acquisition. Another banker, great-uncle John Lubbock's own first partner, Sir William Lemon, was also created a Baronet in this period and extensively remodelled and enlarged his home at Carclew House, adding two new wings in 1799. John William's focus at High Elms, however, was not primarily on the House, but on the estate itself. In 1808, the estate totalled 260 acres, comprising a house, home farm and two lodges. Over a twenty-year period, further land was acquired, trebling the size of the holding, the latest agricultural practices were introduced and there was a continuous programme of work on new farm buildings and landscaping.¹⁶⁴

It was, Bord suggests, the agrarian Whigs – the great landowning families such as the Bedfords and the Spencers – for whom 'enlightened estate management' became of central importance at the turn of the nineteenth century.¹⁶⁵ These innovative methods were not the exclusive preserve of the Whigs, but they demonstrated them most clearly and most publicly. John, 6th Duke of Bedford' was a member of the Board of Agriculture and Improvement. Together with his brother, Francis, 5th Duke, (whom he succeeded in 1802) he had instigated

¹⁶¹ *Morning Post*, 2 June, 1802.

¹⁶² Hilton, *A Mad, Bad and Dangerous People?*, p. 132.

¹⁶³ Orbell, J., 'Baring, Sir Francis, first baronet, (1740- 1810)', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/1382>

¹⁶⁴ Wilson, K., *A Place in the Country . . . High Elms. Downe. Kent* (London: London Borough of Bromley, 1982), p. 4.

¹⁶⁵ Bord, *Science and Whig Manners*, p. 103.

a series of investigations into feedstuffs for cattle, this period marking the development of beef cattle from oxen which had been primarily draught animals.¹⁶⁶ The 6th Duke, at Woburn, and fellow Whig Thomas Coke (Coke of Norfolk), at Holkham, were the foremost agricultural improvers of the day, promoting agricultural meetings including sheep shearing competitions which soon became Society events – ‘more of a cultural statement than a practical contribution to economic growth’, Hilton suggests.¹⁶⁷ Boyd takes a similar view describing this as ‘conspicuous improvement’.¹⁶⁸ However, the agrarian Whigs considered their interest in farming improvement to be anything but superficial. This may be gauged from the words of a man himself described as ‘the great patron of English Agriculture’: third Earl Spencer (formerly Lord Althorp).¹⁶⁹ As Ellis Wasson observed, Spencer’s reflections on the life of a recently-deceased Thomas Coke also shed light on the Earl’s personal feelings about agriculture:

. . . he found, as every man who will apply himself to agriculture will, the high interest of the pursuit, his taste was formed, the habits of his life accommodated themselves to it, and applying the whole energy of his mind to the collection and dissemination of all the knowledge which he could derive from practical and scientific farmers, he has effected the great improvements which . . . have been a source of continued happiness to himself.¹⁷⁰

Although Spencer was referring to Whig icon, Coke, these remarks, as will become clear from the following section, could easily have been used to describe John William Lubbock’s serious engagement with agriculture.

¹⁶⁶ Gibbs, B.T.B., *The Smithfield Club, a Condensed History of its Origins and Progress* (London: James Ridgway, 1857), p. 51. The first ‘experiment’ involved two oxen – ‘Mark’ and ‘Spot’.

¹⁶⁷ Bord, *Science and Whig Manners*, p. 107; Hilton, *A Mad, Bad and Dangerous People?*, pp. 135-36.

¹⁶⁸ Bord, *Science and Whig Manners*, p. 108.

¹⁶⁹ Wasson, E.A., ‘The Third Earl Spencer and Agriculture, 1818-1848’, *Agricultural History Review* 26 (1978), p. 89. Spencer as described in the *British Farmers’ Magazine*.

¹⁷⁰ *Ibid.*, p. 93. Spencer’s comments are taken from the *Journal of the Royal Society of Agriculture of England* (1843).

‘Is it going too far’, asks Hilton, ‘to say that agriculture seemed unchanging, and indeed unchangeable, in the hundred years before 1850?’¹⁷¹ ‘Even in the modernised South East’, he adds, ‘there remained a considerable number of small and relatively inefficient family farms’. This may have described High Elms in 1808, but by 1816 it was becoming a ‘modern’ estate.¹⁷² Many of the changes, suggest the influence of the Board of Agriculture, in particular that of its *General View of the Agriculture of Kent with Observations on the Means of its Improvement*, one of a series of County surveys, which offered 180 pages of detailed advice on all aspects of estate management.¹⁷³ Innovative practice demonstrated at High Elms included the sowing of new cereal crops and the development of market gardening. The introduction of dairy cattle (much-prized Alderneys), pigs and poultry, with a reduction in sheep rearing. The construction of new farm buildings including cowsheds and a purpose-built granary, arranged to form an enclosed yard.¹⁷⁴ While some ‘improvements’, such as the vinery, the peach house and the asparagus fields, were simply to produce embellishments for the master’s table, the fundamental aim was the achievement of efficiency in food production. The work of the farm and John William Lubbock’s involvement with it can be glimpsed through the entries in a surviving Day Book from the period 1815-1822 which passed between High Elms and St James’s Place allowing communication between Lubbock and his estate manager, John Ranson. John William’s first instruction, dated 17 May 1815 is as follows: ‘Send me by the cart next Tuesday the Farmers’ Journal 4 October 1813 to 26 Decr 1814 viz No.315 to 379 for the purpose of being bound up’.¹⁷⁵ This publication is *Evan’s and Ruffy’s Farmers Journal and Weekly Advertizer*, its appearance in 1811 is, in itself, an indication of increased interest in agricultural improvement nationally.

¹⁷¹ Hilton, *A Mad, Bad and Dangerous People?*, p. 8.

¹⁷² Wilson, *A Place in the Country*, p. 7.

¹⁷³ Boys, J., *General View of the Agriculture of Kent with Observations on the Means of its Improvement* (London: Sherwood, Neely and Jones, 1813).

¹⁷⁴ Wilson, *A Place in the Country* p. 15. See also remarks in Boys, *General View of the Agriculture of Kent*, pp. 79, 148, 159.

¹⁷⁵ High Elms Daybook. Entry for 17 May 1815. Lubbock family archive.

By the 1820s Sir John William was a member of the 'Smithfield Club' and was competing in its London shows. The Club was founded in 1802 having been instituted as the Smithfield Cattle and Sheep Society in 1798. The 6th Duke of Bedford was the first Club President and Sir Joseph Banks was an original member.¹⁷⁶ The Club saw its activities as having 'tended materially to increase the supply of animal food of superior quality to meet our greatly increased population and consumption'.¹⁷⁷ Lord Althorp, Whig MP and future third Earl Spencer, succeeded Bedford as President in 1825 and was presiding at the Christmas Show, 1827, where Sir John William was competing. Lord Althorp himself exhibited, as the newspapers reported, a 'beautiful fat heifer', 'Mr Coke MP of Norfolk exhibited for the prize a pen of three extremely fine and valuable sheep'.¹⁷⁸ The *Observer* gave details of the Lubbock entry:

Sir John W. Lubbock, Bart., three 17 months and 2 weeks old Pigs bred and fed by him near Farnborough, Kent, from a Boar of John Greggs Esq of Millfield Hill, Northumberland, on barley meal since February 10, 1827; and for three months past, the three pigs have had 31 bushels barley meal.¹⁷⁹

The widespread and detailed coverage of the event indicates a high level of public interest at the time. The *Observer* report provides evidence of selective breeding and of careful attention to animal nutrition. Serious, but at the same time fashionable involvement in agricultural improvement provided Sir John William, therefore, with a further means by which he was able to interact at the highest level within Whig Society. The exclusivity of the event, however, was a concern to Althorp, the President, who, in 1829, made changes to the

¹⁷⁶ Powell, E.J., *History of the Smithfield Club from 1798 to 1900* (London: Smithfield Club, 1902), p. 84.

¹⁷⁷ *Ibid.*, p. 83.

¹⁷⁸ *Morning Post*, 15 December 1827.

¹⁷⁹ *Observer*, 17 December 1827.

criteria for entering exhibits to encourage more farmers to attend the show and to make it easier for them to compete with the aristocracy.¹⁸⁰

John William was an early member of the Horticultural Society of London, founded in 1804 for the 'improvement of horticulture in all its branches, ornamental as well as useful'.¹⁸¹ Papers in the Society's *Transactions* advised on how fruits, vegetables and ornamental plants, exotic and otherwise, might be cultivated.¹⁸² Horticultural Society President, Thomas Andrew Knight, had been described by Humphry Davy as 'one of the most enlightened philosophers who have studied the physiology of vegetation'.¹⁸³ In 1821, Knight's was one of the signatures on Sir John William's election certificate for the Royal Society, of which Davy was now, following Banks's death in 1820, President.¹⁸⁴ Other signatures include those of Robert Brown, the foremost botanist of the day, Davies Gilbert, a future Royal Society President (1827-1830) and Sir John William's partner, Edward Forster, FRS, who was a botanist of some distinction and the Treasurer of the Linnean Society.¹⁸⁵ John William was also elected a Fellow of the Linnean in 1821.¹⁸⁶ These scientific acquaintances may all be described as belonging to the Banksian era during which science was dominated by Natural History, although Royal Society President Banks had died the year previously. Banks had encouraged Knight to become Horticultural Society President and to draw up the list of 'Objects which the Horticultural Society have in View' (1805).¹⁸⁷ Banks and Knight were regular contributors to the *Proceedings* of each other's Societies. Gilbert was Royal Society Treasurer and had been Banks's Vice-President; Brown had been Banks's own librarian

¹⁸⁰ Wasson, 'The Third Earl Spencer and Agriculture, 1818-1848', p. 94.

¹⁸¹ *Transactions of the Horticultural Society of London*, Vol. 1 (1821), i.

¹⁸² *Transactions of the Horticultural Society of London*, Vol. 5 (1824).

¹⁸³ Davy, H., *Elements of Agricultural Chemistry in a Course of Lectures for the Board of Agriculture* (London, 1814), p. 9.

¹⁸⁴ Sir John William Lubbock Election Certificate, 15 November 1821, Royal Society Archive EC/1821/32.

¹⁸⁵ *Ibid.*

¹⁸⁶ *List of the Linnean Society of London* (London, 1821).

¹⁸⁷ *Transactions of the Horticultural Society of London* vol. 1 (1821), p. 1.

(although he would later ally himself with the reform group). In 1820, John William had also been elected a Fellow of the Geological Society, by now less Banksian although it had been founded with Banks's support in 1807.¹⁸⁸ Bord has drawn attention to the relatively large number of Whig and Independent MPs (Sir John William being identified as one of the latter) who joined the Geological Society in this period, which coincides with the its assertion of independence from Banks's Royal Society.¹⁸⁹ He notes, also, the early membership of Whig aristocrats, the Duke of Devonshire and the Marquess of Lansdowne. Lansdowne was a Vice-President in the year that Sir John William was elected.¹⁹⁰

Sir John William's Royal Society election certificate, written out by Davies Gilbert, summarises nicely his enthusiasm for matters scientific: 'Sir John William Lubbock, Bart – a gentleman very conversant with various branches of science and zealous, on all occasions, in his endeavours to promote its interests'.¹⁹¹ It was natural, therefore, for Sir John William to be attracted, in 1824, to membership of the newly founded Athenaeum Club, for which premises were to be built in Pall Mall. 'Instituted for the association of individuals known for their scientific or literary attainments', the club's first Chairman was Sir Humphry Davy, Michael Faraday was the first Secretary and the names of Sir John William and his 21-year-old son Mr Lubbock are to be found in the list of its 484 founder members.¹⁹² The list includes no fewer than twenty Earls (one being Earl Spencer), five Marquesses (including Lansdowne) and five Dukes (two of whom are Bedford and the King's brother and future Royal Society President, the Duke of Sussex).¹⁹³ A Prince – Leopold, the King's son-in-law and future first

¹⁸⁸ Woodward, H.B., *A History of the Geological Society of London* (London: Longman's, Green and Co., 1908), pp. 15, 281. Having himself joined the Society in January 1808, Banks resigned in February 1809 because, in his opinion, the Society had 'deviated from the principles they had entertained at their first establishment' – perhaps the intention to publish their own Transactions.

¹⁸⁹ Bord, *Science and Whig Manners*, pp. 70-71.

¹⁹⁰ Woodward, *The History of the Geological Society*, p. 304.

¹⁹¹ Sir John William Lubbock Election Certificate, 15 November 1821, Royal Society Archive EC/1821/32.

¹⁹² Waugh, F.G., *Members of the Athenaeum Club, 1824-1887* (London, 1889). First list of members dated 22 June 1824.

¹⁹³ *Ibid.*; *Morning Chronicle*, 1 February 1825.

King of the Belgians – completes the roll call of royalty and aristocracy with which the affluent banker might associate. It was Sir John William Lubbock's being a Hereditary Governor of the British Institution which guaranteed that he would be amongst the first to be invited to join.¹⁹⁴ His son's membership might have been facilitated by the presence of Lubbock next-door neighbour, Samuel Rogers, on the Club's first committee.¹⁹⁵

Sir John William Lubbock was a Fellow of the Horticultural, Geological, Linnean and Royal Societies, but it would be stretching a point to describe him as a man of science. After his death in October 1840, the Marquis of Northampton, delivering the President's obituaries of deceased Fellows at the Royal Society Anniversary meeting the following month, was unable to describe any particular scientific achievements of Sir John William. He chose instead to say of him that, 'it is not one of the least distinctions of such a father, that his name and honours have been inherited by one whose profound acquirements in the most difficult branches of science have merited and received the highest honours which this Society is able to confer'.¹⁹⁶ The origin of his son's 'profound acquirements' will be discussed in the section which follows.

1.5 'French Mathematics'

Lubbock's father, John William, attended Charterhouse School in the City of London. With a reputation for providing a fine education in Classics, it was to be one of the seven 'Great Public Schools' covered by the Public schools Act of 1868, the others being Eton, Harrow,

¹⁹⁴ Wheeler, M., *The Athenaeum* (New Haven Ct: Yale University press, 2020), p. 21. Athenaeum founder, John Wilson Croker, stipulated that membership should be offered only to: 'Gentlemen who have published some literary or professional work, or a paper in the Philosophical transactions – Members of the Royal Academy – Trustees of the British Museum – Hereditary and Life Governors of the British Institution'.

¹⁹⁵ *Ibid.*, p. 30.

¹⁹⁶ *Abstracts of the Papers Communicated to the Royal Society of London from 1843 to 1850 inclusive* (London, 1850), p. 265.

Rugby, Shrewsbury, Westminster and Winchester.¹⁹⁷ It was, however, as Youssef Cassis has shown, unusual for a banker to have attended a public school at this time, only 10% having done so in the period 1800-1820.¹⁹⁸ Most of John William's banking contemporaries, Thomas and Alexander Baring for example, were educated domestically and through an informal apprenticeship in the family counting house. However, at the end of the eighteenth century, Frank Musgrove suggested, a domestic education began to be seen as inadequate for 'Individuals who were moving into . . . social positions for which their family traditions and experience provided little training'.¹⁹⁹ 'A newly enriched family could not enter the superior class culture on wealth alone'.²⁰⁰ In spite of Charterhouse's links with the City, John William Lubbock chose for his son, not his own alma mater, but Eton. T. W Bamford's detailed social analysis of public school pupils in the first half of the nineteenth century demonstrated that Eton educated a greater proportion of the sons of 'titled' parents in this period.²⁰¹ In the second decade of the century, during which Lubbock attended the school, 20% of pupils are in the titled category, compared with lowest-ranking Rugby at 7%.²⁰² Eton, therefore, was the choice of the aristocracy and those wishing to emulate them. Lubbock is recorded on the three-yearly school lists as being in the Fifth Form – Upper Division in 1817 when he was 14. He does not appear on the lists for 1813 or 1820.²⁰³ At Eton, under the tutelage of strict-disciplinarian Dr John Keate, Lubbock received the liberal education in Classics – typically the

¹⁹⁷ 'An Act to make further Provision for the good Government and Extension of certain Public Schools in England, in Great Britain', HC Debate 16 June 1868, *Hansard* vol. 192 cc1631-57. The act applied to boys entitled to receive 'gratuitous education'.

¹⁹⁸ Cassis, Y., 'Bankers in English Society in the Late Nineteenth Century', *The Economic History Review* 38 (1985), p. 213.

¹⁹⁹ Musgrove, F., 'Middle Class Families and Schools 1780-1880; Interaction and Exchange of Function between Institutions', *Sociological Review* 7 (1959), p. 169.

²⁰⁰ *Ibid.*, pp. 174-75

²⁰¹ Bamford, T.W., 'Public Schools and Social Class, 1801-1850', *The British Journal of Sociology* 12 (1961), pp. 224- 35.

²⁰² *Ibid.*, p. 225. Eton 245/1226 = 19.98%; Rugby 56/782 = 7.16%. There is insufficient data to calculate the percentage for Charterhouse, but, using other indicators, Bamford ranks the school sixth, just above Rugby.

²⁰³ Stapylton, H.E.C., *Eton School lists from 1791 to 1877* (London 1884), pp. 76-108.

study of ‘ancient authors’ especially Homer, Virgil and Horace – expected of a young gentleman.²⁰⁴ Mitchell describes Eton at this time as ‘not the most Whiggish of establishments’, suggesting that ‘good little Whigs went to Harrow’.²⁰⁵ However, while the Earls Spencer did typically attend Harrow and the Russells (Dukes of Bedford) went to Westminster, many senior Whigs had been sent to Eton. Amongst the more notable are Charles James Fox, Fox’s nephew Lord Holland, Thomas Coke of Norfolk, and three Whig Prime Ministers of the early nineteenth century – Lord Grenville, Earl Grey and Lord Melbourne. Of the 108 boys in Lubbock’s year group, nine are recorded as having gone on to become Whig MPs, compared with six who would be Tories.²⁰⁶

It can be fairly certain that Lubbock did not acquire any mathematics at school. In 1834, fifteen years after he left Eton and with the school’s curriculum coming under discussion, the *Quarterly Review* published ‘Some remarks on the present studies and management of Eton School’. (The comments also provide some indication of Lubbock’s standing within the scientific community at the time).

Whether the rudiments of the exact sciences, the higher branches of arithmetic, or the elementary parts of mathematics should be generally enforced, as a branch of school education, is a question which would deserve a profound and philosophical examination. The names of Sir John Herschel and Mr Lubbock may prove that the modern system of Eton instruction contains nothing fatal to the development of the most splendid scientific attainments. We have been informed that these gentlemen, though the hereditary right of Sir J Herschel to scientific knowledge must, of course, be taken into consideration, commenced their scientific career after they had left Eton.²⁰⁷

The *Quarterly* doubted whether there would be any advantage in incorporating mathematics as an ‘indispensable part of a public education’.²⁰⁸ Nevertheless, despite the article’s

²⁰⁴ Maxwell – Lyte, H.C., *The History of Eton College, 1440 – 1884* (London: Macmillan, 1889), pp. 354-60.

²⁰⁵ Mitchell, *The Whig World*, p. 36.

²⁰⁶ Stapylton, *Eton School lists from 1791 to 1877*, pp. 88-90.

²⁰⁷ *Quarterly Review* 52 (1834), p. 162.

²⁰⁸ *Ibid.*

sentiments, the perception of the usefulness of mathematics was by now changing and in 1836 Eton's first 'mathematical master' was appointed.²⁰⁹ Notwithstanding the article's comments, Eton's claim on Herschel was tenuous. He was sent to board as an eight-year-old in May 1800 but his mother withdrew him from the school after barely a term., sending him, instead, to a school run by a family friend.²¹⁰ Lubbock is, therefore, the only eminent mathematician of the early nineteenth century to whose education Eton can justly claim to have contributed.²¹¹

For Lubbock, having himself, unlike Herschel, no 'hereditary right' to scientific knowledge, the processes by which he acquired his mathematics are less clear. After leaving Eton at the age of sixteen, he was educated privately to prepare him for university.²¹² The Oxford Dictionary of National Biography entry for Lubbock, by Timothy Alborn, states that his private tutor was William Maltby.²¹³ This is incorrect: the tutor was William Maltby's cousin, Dr Edward Maltby, subsequently (1837) appointed Bishop of Durham by Prime Minister Melbourne, becoming one of just two Whig Lords Spiritual. (The confusion has possibly arisen because William Maltby was known to the Lubbocks: he was a life-long friend of Samuel Rogers and was the Librarian of the London Institution). Dr Edward Maltby is known to have acted as private tutor for several students from Eton.²¹⁴ Maltby was a distinguished classical scholar and he had also graduated as eighth wrangler (eighth place in

²⁰⁹ Maxwell – Lyte, *The History of Eton College, 1440 – 1884*, p. 481.

²¹⁰ Buttmann, G., *The Shadow of the Telescope: A Biography of John Herschel* (London: Lutterworth Press, 1970), p. 9.

²¹¹ William Cavendish, 7th Duke of Devonshire, attended Eton in the early 1820s and achieved success in Mathematics at Trinity, Cambridge. However, he made no subsequent contribution to mathematics.

²¹² Rouse Ball, W.W., *Trinity College, Cambridge* (London: Dent and Co., 1906), p. 84. Sitting an entrance examination for Lubbock's intended college (Trinity, Cambridge) had become a requirement in 1810.

²¹³ Alborn, T.L., 'Sir John William Lubbock, Third Baronet. (1803-1865)', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/17119>

²¹⁴ Liddon, H.P., *The Life of Edward Bouverie Pusey* (London: Longmans, 1893), p. 19. Pusey, (a future principal promoter of the Oxford Movement), who was in the form above Lubbock's at Eton was tutored for Oxford by Dr Maltby for fifteen months from October 1817.

the first class of the Mathematical Tripos) at Pembroke College, Cambridge, in 1792.²¹⁵ There is nothing to indicate, however, that he instructed Lubbock in mathematics and, indeed, the subject had by then undergone significant change at Cambridge since Maltby's time as an undergraduate. In later years Maltby would be elected a Fellow of the Royal Society (1824) and have significant involvement in the founding of the new London University (UCL). He would be responsible for introducing Lubbock to the Society for the Diffusion of Useful Knowledge and propose him for membership of its Committee.²¹⁶ Lubbock joined Maltby at his home in Buckden, Huntingdonshire, in the summer of 1819 and, although his time there was punctuated by periods of ill health when he had to remain in London, he continued his tuition with Maltby until the end of 1820.²¹⁷

Lubbock's father did not attend university; in the first two decades of the nineteenth century, as Cassis has shown, only 5% of bankers had done so.²¹⁸ However, Cassis suggests, 'to be the son of a banker did not . . . necessarily mean belonging to the upper class'.²¹⁹ He sees 'education at one of the two ancient universities' as the 'criterion of absorption, into the elite grouping'.²²⁰ In Lubbock's generation of bankers over a quarter, including Lubbock himself, would be Oxbridge educated.²²¹ According to Lubbock's Royal Society obituary of 1865, 'his father had intended him for Oxford but at his own earnest request, he was placed at Trinity College, Cambridge, in 1821'.²²² In seeking to shed some light on his insistence on attending this College, three possible contributing factors emerge: a wish to study at a

²¹⁵ Ibid.

²¹⁶ Edward Maltby to John William Lubbock, 27 January 1829, Royal Society Lubbock Collection M37.

²¹⁷ Edward Maltby to Sir John William Lubbock, 28 July 1819, 27 September 1820, Royal Society Lubbock Collection M35, M36.

²¹⁸ Cassis, 'Bankers in English Society in the Late Nineteenth Century', p. 213.

²¹⁹ Ibid., p. 212.

²²⁰ Ibid.

²²¹ Ibid., p. 213. The figure is 26%.

²²² *Proceedings of the Royal Society of London. Obituary Notices of Fellows Deceased* (London, 1866), p xxxii. It is not known who wrote Lubbock's obituary, but it was clearly someone thoroughly familiar with higher mathematics and the man himself. Perhaps John Herschel.

College renowned for its liberal attitudes, an awareness of the Trinity's position as the foremost educator of the aristocracy, a desire to study so-called 'continental mathematics' being taught there.

This was a period of intense change for Trinity. A new Master, Christopher Wordsworth, brother of the poet, had been appointed in 1820.²²³ Wordsworth, concerned to find that most undergraduates had to be accommodated in Town (which he considered detrimental to discipline) was initiating an ambitious programme of extension to College buildings.²²⁴ Notwithstanding Wordsworth conservative views and Tory political affiliation, many of Trinity's Fellows in this period were ardent Whigs, reflecting the College's long-standing association with liberal politics, one which Martha Garland traces back to its foundation in the sixteenth century.²²⁵ Richard Brent, in his discussion of the origins of 'Liberal Anglicanism', highlights the importance of the 'Trinity school of liberal theologians' who, together with their counterparts at Oxford, the 'Oriental Noetics', 'anticipated an era when religious party strife would cease and Christians would collaborate in a common cause'.²²⁶ Trinity was sympathetic to reform, both in the country and the college, and to dissenter relief.

By the end of the eighteenth century, Christopher Reid suggests, Trinity had become the 'largest and most prestigious' College with a major role in educating the 'English political elite'.²²⁷ 'Between 1790 and 1820', he notes, '151 men who were elected to the House of Commons passed through its gates'.²²⁸ To this may be added that a large number of these

²²³ Winstanley, D.A., *Early Victorian Cambridge* (Cambridge: Cambridge University Press, 1955), p. 59.

²²⁴ *Ibid.*, p. 60.

²²⁵ Winstanley, *Early Victorian Cambridge*, p. 72; Garland, M.M., *Cambridge before Darwin: The ideal of a Liberal Education* (Cambridge, Cambridge University Press, 1980), p. 18.

²²⁶ Brent, R., *Liberal Anglican Politics: Whiggery, Religion and Reform, 1830-1841* (Oxford: Clarendon Press, 1987), pp. 144-83 (p. 167).

²²⁷ Reid, C., 'Whig Declamation and Rhetorical Freedom at Trinity College, Cambridge 1770-1805', *The Review of English Studies* 64 (2013), p. 630.

²²⁸ *Ibid.*, p. 631.

were Whigs including: Charles Grey (later Prime Minister, 2nd Earl Grey), Henry Petty-Fitzmaurice (3rd Marquess of Lansdowne), John Spencer (Lord Althorp and 3rd Earl Spencer), William Lamb (Prime Minister, Lord Melbourne).

It is, however, most probably mathematics which drew Lubbock to Cambridge and Trinity. Continental mathematical methods, derived from Leibnitz, began to be introduced at Cambridge in the early years of the nineteenth century in place of Newton's dot notation of fluxions and, by the end of the century's first quarter, they were widely accepted in university teaching. Robert Woodhouse, Fellow of Caius College, Cambridge, is credited with bringing Leibnitz notation to England with his book, *Principles of Analytical Calculation*, published in 1803.²²⁹ David Philip Miller identifies a James Ivory paper of 1809, published in the Royal Society's *Philosophical Transactions*, as an 'early and outstanding effort to employ differential calculus in original mathematical research'.²³⁰ The paper, 'On the Attractions of Homogenous Ellipsoids', also makes use of integral calculus in its analysis.²³¹ In 1812, John Herschel and George Peacock (Senior and Second Wranglers respectively in 1813), together with Charles Babbage, founded the Analytical Society with the aim of introducing to Cambridge the mathematical analysis of French mathematicians such as Pierre-Simon Laplace and Joseph Louis Lagrange in opposition to what Babbage referred to, punningly, as the 'dot-age' of the University.²³² In October of that year, Herschel, inspired by Woodhouse's book, submitted to the Royal Society a paper 'On a Remarkable application of Cotes' Theorem' which was followed up by three further papers on mathematical analysis (1814, 1816, 1818). Herschel and Peacock's 1816 translation of *Traité du calcul différentiel et du calcul intégral*, by Sylvestre Francois Lacroix, soon became adopted as a university

²²⁹ Woodhouse, R., *Principles of Analytical Calculation* (Cambridge: Cambridge University Press, 1803).

²³⁰ Miller, 'The Royal Society of London 1800-1835', p.118.

²³¹ Ivory, J., 'On the Attractions of Homogenous Ellipsoids' *Philosophical Transactions of the Royal Society of London* 99 (1809), pp. 345-72.

²³² Babbage, C., *Passages from the Life of a Philosopher* (London: Longman 1864), p. 28.

textbook.²³³ These publications may have inspired the teenage Lubbock to study mathematics. He may also, quite possibly, have attended Babbage's course of lectures on astronomy at the Royal Institution in 1815.²³⁴

By the time Lubbock arrived at Cambridge in 1821, Peacock, in particular, had used his influence to establish the continental method in mathematics teaching at the University, although Trinity was one of just two Colleges which had adopted it at this stage.²³⁵ Lubbock's tutor in mathematics at Trinity was William Whewell who had graduated second wrangler on taking his B.A. degree in 1816. He had been elected a Fellow of Trinity in 1817 and then appointed lecturer at the College in 1818.²³⁶ In 1819 he had published his first book: *An Elementary Treatise on Mechanics: Designed for the Use of Students of the University*, which was the first applied mathematics work in English to adopt the notation found in continental mathematics.²³⁷ In 1823, during Lubbock's time with him, he published *A Treatise on Dynamics* which used French techniques of analysis.²³⁸ 'The continental mathematics had been recently introduced into general study', the writer of Lubbock's Royal Society obituary states, 'and Mr Lubbock, perceiving their superior power as means of investigation, spent his first long vacation in Paris, and became a confirmed follower of that school'.²³⁹ It is believed that he met Laplace himself.

Lubbock's arrival at Cambridge in 1821 coincided with Whewell's joining of the recently-formed Astronomical Society and also with the appearance of Woodhouse's

²³³Buttmann, *The Shadow of the Telescope*, p. 12.

²³⁴ Swade, D., 'Babbage, Charles (1791-1871)', *Oxford Dictionary of National Biography* <https://doi.org/10.1093/ref:odnb/962>

²³⁵ Buttmann, *The Shadow of the Telescope*, p. 39.

²³⁶ Todhunter, I., *William Whewell, D.D. An Account of his Writings with Selections from his Literary and Scientific Correspondence* (London: Macmillan, 1876), p. 11.

²³⁷ Whewell, W., *An Elementary Treatise on Mechanics: Designed for the Use of Students of the University* (Cambridge: Pitt Press, 1819).

²³⁸ Whewell, W., *A Treatise on Dynamics. Containing a considerable Collection of Mechanical Problems* (Cambridge: Cambridge University Press, 1823).

²³⁹ *Proceedings of the Royal Society of London. Obituary Notices of Fellows Deceased* (London, 1866) p xxxii

Treatise on Astronomy, Theoretical and Practical.²⁴⁰ Historian of Mathematics, Niccolò Guicciardini, believes that Woodhouse, who in his later years turned his attention to the mathematics of astronomy, ‘deserves to be remembered as one of the first and most influential reformers of British Mathematics’. He singles out Woodhouse’s *Elementary Treatise on Physical Astronomy* (1818) as being of particular importance, presenting, as it did ‘the main mathematical techniques of Laplace’.²⁴¹ John Wright’s account of his time at Trinity a few years before Lubbock captures the sense of wonder of a young man encountering the study of Physical Astronomy:

With Astronomy I was both delighted and astonished, not having previously entertained any but the most imperfect ideas of what it discloses and demonstrates . . . The study of Astronomy, mathematically handled – not what they call Astronomy at ladies’ boarding-schools, is delectable in the extreme – sublimity itself.²⁴²

Cambridge University’s new astronomical observatory was opened in 1823 under the direction of Woodhouse, now Plumian Professor. In this period, Allan Chapman suggests, British astronomy was ‘vastly better at accumulating accurate observations than it was at doing anything useful with them’.²⁴³ However, in the 1820s the importance of *physical* astronomy was being realised increasingly. In 1825, the year in which Lubbock left Cambridge, political economist J. R. McCulloch, seeking to emphasise the importance of his own fledgling science, made the following comparison: ‘The object of the statistician is to describe the condition . . . while the object of the political economist is to discover the causes.

²⁴⁰ Woodhouse, R., *Treatise on Astronomy, Theoretical and Practical* (Cambridge: Cambridge University Press, 1821).

²⁴¹ Guicciardini, N., *The Development of Newtonian Calculus in Britain, 1700-1800* (Cambridge: Cambridge University Press, 1989), p. 131.

²⁴² Wright, J.M.F., *Alma Mater; or Seven Years at the University of Cambridge. By a Trinity Man* vol. 1 (London: Black, Young and Young, 1827), pp. 225-26. Wright graduated in 1819.

²⁴³ Chapman, A., *The Victorian Amateur Astronomer: Independent Astronomical Research in Britain, 1920-1920* (Leominster: Gracewing, 2017), p. 3.

He is to the statistician what the physical astronomer is to the mere observer'.²⁴⁴ Lubbock was to be a physical astronomer; he rarely looked into the eyepiece of a telescope, and if he did it was someone else's. As such he fails to make it into Allan Chapman's list of 'Grand Amateur' astronomers. This includes any from the solely positional astronomers up to the more mathematically inclined who, like the grandest – John Herschel – both observed and reduced their observations.²⁴⁵ Chapman, explaining his choice of this term, reminds us of the 'Latin sense' of the word amateur – 'one who loves'.²⁴⁶ For Lubbock, *physical* astronomy became a 'labour of scientific love'.²⁴⁷

'Though his power and reading as a mathematician were well known', it was later stated, 'Lubbock was only placed first of the Senior Optimes (head of the second class of university honours) in the Mathematical Tripos of January 1825'.²⁴⁸ As his former tutor, Maltby would write: 'He took a good degree and probably would have taken a better, if he had not read so much French Mathematics'.²⁴⁹ Whewell wrote to Lubbock to commiserate:

Above I have written the two first classes of your year in the order in which the marks place them. I am extremely sorry not to have to announce to you, as I hoped I should have had, that you are in the first. From what I have learnt, if you had done as well in all the subjects as you did in some of them, there would have been no doubt about it . . .

If this be a disappointment to you, as it is to me, it will not, I hope, discourage you from pursuing mathematics as you must know by this time that you are not likely to find any difficulties in them which you will not easily overcome.²⁵⁰

²⁴⁴ McCulloch, J.R., *The Principles of Political Economy: with a Sketch on the Rise and Progress of the Science* (Edinburgh, 1825), pp. 59-60.

²⁴⁵ Chapman, *The Victorian Amateur Astronomer*, pp. 53-74.

²⁴⁶ *Ibid.*, p. 8.

²⁴⁷ *Ibid.*, Chapman quotes the words of astronomer N.R. Pogson

²⁴⁸ *Proceedings of the Royal Society of London. Obituary Notices of Fellows Deceased* (London 1866) p. xxxiii

²⁴⁹ Reidy, M.S., *Tides of History: Ocean Science and Her Majesty's Navy* (Chicago: University of Chicago Press, 2008), p. 85.

²⁵⁰ Whewell to Lubbock, January 1825, Royal Society Lubbock Collection W 232.

Lubbock was not discouraged from pursuing mathematics and, on returning to London, soon found outlet for his abilities in the form of the Society for the Diffusion of Useful Knowledge. James Carlile, in an early evaluation of the importance of the Society, identified 35 individuals active in the Society's earliest years, including John William Lubbock.²⁵¹ Carlile's comments on the Society's Committee describe its religious diversity but general 'Whiggishness':

A more capable committee was never brought together, and when we add that it included a Quaker, a Jew, a Bishop (for Maltby became Bishop of Durham) and more than one agnostic, it would appear to have been fairly representative, save for the fact that it included no one who could be regarded as an opponent of reform.²⁵²

Carlile's article draws heavily on the memoirs of the Society's main publisher, Charles Knight, which were published in 1864 and which demonstrate Lubbock's importance to the organisation, from an early stage. Knight vividly described how, in the middle of November 1827, he put to Society Chairman, Brougham, his idea for an almanac, confirming that he could get it out before the end of the year 'with a little help in the scientific matters'. Knight recalled Brougham's response as being: 'You shall have help enough. There's Lubbock and Wrottesley and Daniell and Beaufort – you may have your choice of good men for your astronomy and meteorology, your tides and your eclipses'.²⁵³ The resultant *British Almanac and Companion* would appear annually for 37 years from 1828 and, although not without its early critics, is considered the first reliable almanac for a general readership in Great Britain.²⁵⁴

²⁵¹ Carlile, J., 'The Society for the Diffusion of Useful Knowledge', *The Open Court* 33 (1919), pp. 70-76.

²⁵² *Ibid.*, p. 71.

²⁵³ Knight, C., *Passages of a Working Life during Half a Century* (London 1864), p. 62.

²⁵⁴ *Mechanics Magazine* 277 (1829), pp. 284-88; Reidy, *Tides of History*, pp. 81-88.

Lubbock would be a major contributor to the *Almanac* and, in particular, to its *Companion*, and it is in the latter that he published his first work on the Tides.²⁵⁵ Lubbock explained in 19 detailed pages of the *Companion* for 1830, how he combined theory, derived from Laplace, with 9,000 high tide observations from London Docks to produce tables which show a ‘truly wonderful’ coincidence between theory and observation.²⁵⁶ The mathematician’s satisfaction at his achievement is evident and contrasts markedly with the interpretation of both Laura Snyder and Michael Reidy who attribute Lubbock’s interest in the tides at London to his having a financial interest in the recently-opened St Katharine docks.²⁵⁷ (It was in fact Lubbock’s *father* who was one of the enterprise’s financiers). Lubbock also called on the government to ‘direct observations of the tides to be made with accuracy in all the institutions at the ports which are under its control’.²⁵⁸

It was not usual for *Almanac* articles to be attributed to an author, but an exception was made in this case. SDUK Secretary Thomas Coates wrote to Lubbock to inform him that ‘the Almanack committee are anxious that you should permit them to insert your name as the author of the article on the tides in the Companion – they bade me ask your leave’.²⁵⁹ Society Chairman, Henry Brougham, wrote to Lubbock praising the work: ‘The paper is one of the highest importance and I only grudge it being thrown away on our Companion. It ought to have been in the Phil.Trans. . . . I am quite in admiration of your work’.²⁶⁰ The *Spectator*, in a highly favourable review of the *Companion*, gave Lubbock public recognition for the work:

²⁵⁵ Knight, C., *Passages of a Working Life during half a century* (London 1864) pp. 65, 125.

²⁵⁶ *The Companion to the Almanac; or Year Book of General Information for the Year 1830* (London: Charles Knight, 1830), pp. 49-68.

²⁵⁷ Reidy, *Tides of History*, pp. 71, 85; Snyder, L.J., *The Philosophical Breakfast Club* (New York: Broadway Books, 2011), p. 173.

²⁵⁸ *The British Almanac of the Society for the Diffusion of Useful Knowledge for the Year 1830* (London: Charles Knight, 1830), p. 5.

²⁵⁹ Coates to Lubbock, 2 November 1829, Royal Society Lubbock Collection C 298.

²⁶⁰ Brougham to Lubbock, probably late 1829, Royal Society Lubbock Collection B 482.

The Companion to the Almanac of the Society for Useful Knowledge, is the cheapest half-crown's worth of solid entertainment and really useful knowledge we have seen since its predecessor of last year appeared. With the Almanac itself, it will form a most valuable and interesting volume. We must point to an ingenious and learned essay on the theory of tides by Mr LUBBOCK as particularly deserving a careful perusal.²⁶¹

15 (out of 57) members of the first published Committee of the SDUK (1829) were Fellows of the Royal Society, although barely half of these could be considered to have had an active involvement in science.²⁶² 25-year-old Lubbock was drawn to the SDUK through numerous friends or acquaintances of the family including his former tutor, Edward Maltby, who proposed Lubbock for membership of the Committee in January 1829.²⁶³ SDUK Treasurer William Tooke was, as has been noted above, a close friend of Lubbock's father, Sir John William.²⁶⁴ The SDUK Committee brought Lubbock into contact with some key figures at the philosophical heart of Whig politics in the period before the Great Reform Bill. In addition to Chairman (and future Lord Chancellor), Henry Brougham, there was Vice-Chairman Lord John Russell (a future Home secretary and Prime Minister), Lord Althorp (the then leader of the Whigs in the Commons) and Thomas Spring Rice MP (future Chancellor of the Exchequer).²⁶⁵

In November, 1827, Lubbock was elected a Fellow of the Linnean Society, the first of five Learned Societies to which he would belong, but the only one to which he would not contribute a paper. In 1828 he joined the Astronomical Society. He already knew many members socially and had procured wine and sherry for the Secretary, Trinity Fellow Richard

²⁶¹ *Spectator* 11 December 1829.

²⁶² *The British Almanac of the Society for the Diffusion of Useful Knowledge for the Year 1829* (London: Charles Knight 1829) p. 1.

²⁶³ Edward Maltby to John William Lubbock, 27 July 1829, Royal Society Lubbock Collection M37.

²⁶⁴ Jenkins, T., 'Truro', *The History of Parliament: The House of Commons*, www.historyofparliamentonline.org/volume/1820-1832/comstituencies/truro

²⁶⁵ Bord, *Science and Whig Manners*, pp. 83-101.

Sheepshanks, ('I am no great judge of wine'), on several occasions.²⁶⁶ At first sight this might seem trivial point, but Thora Hands argues that in this period 'purchasing, serving and consuming good quality wines and spirits were key ways to demonstrate levels of cultural capital and good taste'.²⁶⁷ Using Bourdieu's ideas about taste, which he illustrated with reference to art appreciation, she suggests that, in a similar manner, a knowledge of wine required 'a certain degree of cultural capital that was most evident in people from high social class backgrounds'.²⁶⁸ Wine committees at clubs like the Athenaeum, (of which both Lubbock and Sheepshanks were members), 'acted as guardians of taste'.²⁶⁹ By this interpretation we might say that, intentionally or otherwise, Lubbock who is junior to Sheepshanks in both age and scientific reputation at this time, is emphasising his social superiority and, through sharing his connoisseurship, assisting the senior man in elevating his own social position.

Sheepshanks was anxious that Lubbock should be persuaded to join the Astronomical Society:

Sedgwick and Whewell are very desirous, as well I, that you should some fine day become a member of our body. I would not press this upon your notice again if I did not seriously think that the connection would be advantageous to both sides and especially that it would make you a member of a body containing far more sincere love for science and honest admiration of her cultivators than I believe at present to exist elsewhere. We have our faults but jealousy and libelling are not as yet very conspicuous in the catalogue.²⁷⁰

Sheepshanks's final comments are ironic in view of his later, very public disagreement with Sir James South, soon to become Astronomical Society President, but the letter demonstrates that the young Lubbock was held in high regard by astronomers and

²⁶⁶ Sheepshanks to Lubbock, probably early 1828, Royal Society Lubbock Collection S106, S107.

²⁶⁷ Hands, T., *Drinking in Victorian and Edwardian Britain: Beyond the Spectre of the Drunkard* (Basingstoke: Palgrave MacMillan, 2018), pp. 145-46.

²⁶⁸ *Ibid.*, p. 150.

²⁶⁹ *Ibid.*

²⁷⁰ Sheepshanks to Lubbock, ,probably early 1828, Royal Society Lubbock Collection S106, S107.

mathematicians.²⁷¹ Lubbock was elected to the Society's Council in 1829, serving for five years including two as a Vice-President (1832 and 1833).²⁷²

On 15 January, 1829, Lubbock was elected a Fellow of the Royal Society, his election certificate having been 'suspended' for the required ten meetings since it was read on 8 May 1828.²⁷³ The election certificate was written out by physicist Captain Henry Kater, at the time Treasurer of the Society, and it was he who introduced Lubbock at a Thursday meeting on 13 November 1828.²⁷⁴ The other signatures, which reveal the breadth of contact that ensured Lubbock's successful election, are, in order, as follows:

Thomas Young – polymathic physician

Edward Forster – botanist and banking partner of Sir John William Lubbock

Thomas Tooke – political economist, at the time a Director of Royal Exchange Assurance (with Sir JWL)

Dr Edward Maltby – Lubbock's former tutor and now a SDUK Committee colleague

Charles Savill Onley – former MP (with Sir JWL)

George Peacock – Trinity Fellow and one of the outstanding mathematicians of the period

William Vaughan – FLS, F(R)AS, Director of Royal Exchange Assurance and of the London Dock Company (with Sir JWL)

William Hasledine Pepys – founder member, and later the Secretary, of the Geological Society

William Somerville – physician and husband of mathematician, Mary, with whom Lubbock was in frequent correspondence.²⁷⁵

²⁷¹ Hoskin, M., 'Astronomers at War: South 'v' Sheepshanks', *Journal for the History of Astronomy* 20 (1989), pp. 175-212.

²⁷² *Monthly Notices of the (Royal) Astronomical Society of London* vol. 1 (1827-30), pp. 116, 168, vol. 2 (1831-34), pp. 24, 76, 165.

²⁷³ Election Certificate: John William Lubbock, Royal Society Archive EC/1829/01.

²⁷⁴ Kater to Lubbock, 30 October, 1828, Royal Society Lubbock Collection K2.

²⁷⁵ Mary Somerville to Lubbock, various letters 1829, Royal Society Lubbock Collection S 284-288.

Miller suggests that ‘mathematical practitioners’ found it difficult to ‘gain admission to Royal Society circles’ and that they were, in consequence, ‘marginal to the Banksian learned empire’.²⁷⁶ Stockbroker Francis Baily, for example, delayed soliciting for admission until after Banks’s death. However, this is not to say that there were no capable mathematicians at a senior level within the Society, even in Sir Joseph’s time. The most notable of these were Thomas Young (the Society’s Foreign Secretary) and Davies Gilbert (Banks’s choice for his successor). Young had been censured by Herschel for his use of ‘ancient fluxional notation’ but by the mid-1820s, after Banks’s death, Young was contributing mathematical papers to the *Philosophical Transactions* which made use of differential calculus.²⁷⁷ Gilbert’s paper of 1826 on the Menai Bridge was an early example of the use of sophisticated mathematics in an applied setting, to modify a design. Lubbock was joining, therefore, a Royal Society which was coming to value mathematics and mathematicians, as was society, more generally.

Lubbock’s mathematical interests in the late 1820s were diverse. This has simply not been appreciated by historians of science and has contributed to his being overlooked. William Ashworth, for example, does not mention Lubbock as one of his ‘business astronomers’ in which group are found the likes of Baily, Babbage, Gompertz. Perhaps this is because he was not a *founder* member of the Astronomical Society, but he surely merits inclusion.²⁷⁸ In Lubbock’s very first paper, ‘On the Calculation of Annuities’, read to the Cambridge Philosophical Society on 26 May 1828, he was following in the footsteps of

²⁷⁶ Miller, ‘The Royal Society of London 1800-1835’, pp. 98, 107, 113.

²⁷⁷ Young, T., ‘A Finite and Exact Expression for the Refraction of an Atmosphere nearly Resembling that of the Earth’, *Philosophical Transactions of the Royal Society of London* 114 (1824), pp. 159-61 ; Gilbert, D., ‘On the Mathematical Theory of Suspension Bridges with Tables for Facilitating their Construction’ *Philosophical Transactions of the Royal Society of London* 116 (1826), pp. 202-18; Ashworth, W.J., ‘The Calculating Eye: Baily, Herschel and Babbage and the Business of Astronomy’, *British Journal for the History of Science* 27 (1994), p. 433, quoting Schweber, S.S., *Aspects of the Life and Thought of Sir John Frederick Herschel* (New York: Ayer, 1981).

²⁷⁸ Ashworth, ‘The Calculating Eye’, pp. 409-41.

Babbage, and, in particular, Baily who had both investigated this.²⁷⁹ It was closely followed by 'On the Comparison of Various tables of Annuities'.²⁸⁰ Of these papers it was later said:

Mr Lubbock showed his familiarity with Laplace, before any one in Britain, by two papers . . . on the calculation of annuities, and on comparison of tables. At the time of publication there was no actuary, except Mr Benjamin Gompertz, who could read them; the state of things is now different, and the papers have been reprinted in the Assurance Magazine.²⁸¹

'On the Determination of the Orbit of a Comet' which was read before the Astronomical Society on 9 January 1829 was Lubbock's first offering on physical astronomy.²⁸² His first paper to appear in the *Philosophical Transactions of the Royal Society* was 'On the Pendulum', read on March 11 1830.²⁸³ In this he advocated the use of mathematics to express multiple parameters in the analysis of observations which would be the hallmark of his future papers on the Tides and on Lunar and Planetary Theory.²⁸⁴ Lubbock's *synthetic* method for tidal prediction (to use a term later coined for it by George Darwin) gave much better predictions than earlier methods and was in use by the Admiralty into the twentieth century.²⁸⁵

'On the Census', published in the *Philosophical Magazine* of June 1830, reveals Lubbock's interest in statistics.²⁸⁶ It was published in the hope that, with the Census of 1831 approaching, something might be done to 'give to these researches an accuracy equal to that

²⁷⁹ Lubbock, J.W., 'On the Calculation of Annuities and on some Questions in the Theory of Chances', *Transactions of the Cambridge Philosophical Society* 3 (1828), pp. 141-154.

²⁸⁰ Lubbock, J.W., 'On the Comparison of Various Tables of Annuities', *Transactions of the Cambridge Philosophical Society* (1829), pp. 321-41.

²⁸¹ *Proceedings of the Royal Society of London. Obituary Notices of Fellows Deceased* (London 1866), xxxii. The papers were reprinted in 1855.

²⁸² Lubbock, J.W., 'On the Determination of the Orbit of a Comet', *Memoirs of the Royal Astronomical Society* 4 (1830), pp. 39-58.

²⁸³ Lubbock, J.W., 'On the Pendulum', *Philosophical Transactions of the Royal Society of London* 120 (1830), pp. 201-08.

²⁸⁴ Cartwright, D.E., *Tides, a Scientific History* (Cambridge: Cambridge University Press, 1999), p. 91.

²⁸⁵ *Ibid.*, p. 92.

²⁸⁶ Lubbock, J.W., 'On the Census', *Philosophical Magazine* 7 (1830), pp. 416-20.

which has been attained in almost every other branch of science'.²⁸⁷ Early in 1828, Lubbock had attended, as a visitor, several meetings of the Political Economy Club.²⁸⁸ A closed club limited to thirty members which had been founded in 1821, it met every month for discussion related to economic policy or theory. Founder member and Whig MP, David Ricardo, considered the most eminent political economist since Adam Smith, and who died in 1823, had been a friend of the Lubbocks and banked with them.²⁸⁹ Lubbock's invitation to attend the 1828 meetings probably came through his uncle, banker Henry Entwistle (his mother's brother) who was also a founder member. In October, 1828, Lubbock used contacts made through Royal Exchange Assurance (of which his father was a Director) to obtain data from the yearly Bills of Mortality for Northampton and in May 1830 he submitted written observations to Davies Gilbert's Commons Population Bill Committee.²⁹⁰ That Lubbock was an innovator in the application of mathematics to such questions is shown by a letter from Whewell asking for assistance on the 'law of population' for a friend of his:

He is on the point of publishing a book on political economy which I consider a most valuable and important addition to the science and in the case of his speculations he comes to have occasion for some calculations which he is not mathematician enough to manage.

The author is Mr Jones of Caius College whose present residence is Brasted in Kent (not far from your father's country house)²⁹¹

Mr Jones is Richard Jones, Professor of Political economy at King's College, London, (1833) and a founding member of the Statistical Society of London (1834). Jones and Whewell were both liberal Tories but it was Whigs who turned increasingly to theories of political economy

²⁸⁷ Ibid., p. 416.

²⁸⁸ *Political Economy Club, Founded in London, 1821, Minutes of Proceedings, 1821 – 1882. Roll of Members and Questions Discussed* (London, 1882), pp. 90-93.

²⁸⁹ Sraffa, P., *The Works and Correspondence of David Ricardo*, p. 66.

²⁹⁰ William Macquire to Sam Fenning, 24 October, 1828, Royal Society Lubbock Collection M 20; John Rickman to Lubbock, 22 May 1830, Royal Society Lubbock Collection R 68.

²⁹¹ Whewell to Lubbock, 22 June 1829, Royal Society Lubbock Collection W 248.

and the use of statistics in this period.²⁹² The first President of the Statistical Society was the third Marquess of Lansdowne.

A little-known paper is 'On Notation', read to the Astronomical Society on 11 December, 1829, and published in the *Memoirs*, Volume 4.²⁹³ In this, Lubbock argued that 'notation should be as simple, as distinct, as expressive and, above all, as uniform as possible'. With 'great diffidence' he submitted, 'for consideration' a set of rules resulting from an analysis of notation used by fifteen of the most distinguished astronomers and mathematicians of Britain and the Continent. Lubbock concluded by saying 'I shall be happy if this short paper induces attention to a subject which appears to me to have been too much neglected'.²⁹⁴ 'I am really glad that you are trying to purify our notation', Whewell told him. 'Let the march of analysis be as uniform as that of a Prussian regiment'.²⁹⁵ At the age of 26, Lubbock was not afraid to lecture (politely) the mathematical world on its shortcomings. Astronomer William Henry Smyth wrote to congratulate Lubbock on the paper:

I have read your paper with much interest because I consider the necessity of a common notation to be quite imperative. . . I certainly think it will merely prove a forerunner to a more extensive conventional series of symbols by which mathematical writings may be rendered universally available. You will therefore render the utmost service to science in pursuing it closely.²⁹⁶

Mary Somerville also wrote to Lubbock to congratulate him on this and other papers. Of greater interest, perhaps, is that Somerville, already acknowledged as an outstanding mathematician, frequently asked Lubbock to comment on her work: 'As you were so kind as to say you would give me your opinion of my account of the lunar theory I send it to you and shall value your observations much', she wrote in August 1830, referring to a draft section

²⁹² Mitchell, *The Whig World*, pp. 110-12.

²⁹³ Lubbock, J.W., 'On Notation', *Memoirs of the Royal Astronomical Society* 4 (1830), pp. 471-80.

²⁹⁴ *Ibid.*, p.480.

²⁹⁵ Whewell to Lubbock, 17 November 1829, Royal Society Lubbock Collection W 250.

²⁹⁶ Smyth to Lubbock, 9 April 1830, Royal Society Lubbock Collection S 217.

from *The Mechanism of the Heavens*, published in 1831.²⁹⁷ 'When we come home I hope we shall have the pleasure of seeing you', she added. Mathematicians comprised yet another circle of acquaintance.

1.6 Concluding remarks

It can be seen that the confident and capable young man who, in November 1830, would become Treasurer and Senior Vice-President of the Royal Society was the product of a process which had begun in the years just before his birth and which would not have been possible in an earlier age. Lubbock's great-uncle John used his position within a growing and increasingly influential upper-middle class, to obtain, for the family, a baronetcy. His father, John William, used his engagement with agricultural and horticultural science as a means of gaining improved status within Society (in particular, Whig Society) and within a scientific community dominated, at the time, by Sir Joseph Banks. It was Lubbock's father and mother who established the family's position within the Metropolitan intellectual world. In this period the Lubbocks turned, both culturally and politically, towards the Whigs. The Lubbock story provides strong support for ideas about the importance of cultural emulation in this period. In addition to being in possession of rank complemented by education at Eton and Cambridge, Lubbock himself was able to use his exceptional mathematical competence to attain the highest status as a man of science in a new scientific era which now valued such skills above all others. It was Lubbock's standing, both in science and society, which would enable him to lead the Royal Society through the decade to come. This chapter has helped to establish Lubbock's social, political and intellectual position, the understanding of which will be of fundamental importance in the interpretation of what is to follow.

²⁹⁷ Somerville to Lubbock, 25 August 1830, Royal Society Lubbock Collection S286.

Chapter 2. The transformation of the Royal Society, 1830 – 1835

2.1 Introduction

The events leading up to the contested Royal Society Presidential election of November 1830 held a fascination for historians of science throughout the second half of the twentieth century. Many authors turned their attention to the examination of the circumstances in which, from 1820 onwards, dispute between senior figures within the scientific world, on the question of reform of the Society, became increasingly bitter before developing into outright conflict.¹ That many of the key players were controversial and colourful characters easily given to the vilification of their opponents only served to make the period of greater interest to those studying it. In the wake of the deeply divisive election described in detail in a number of texts, the Royal Society's ability to survive the trauma and emerge stronger in the 1830s, without being replaced by the nascent British Association, comes as something of an anti-climax. This chapter will attempt to shed some light on how this was achieved.

'Through the study of organised scientific sociability', Denise Philips suggests, 'one can watch the modern professional scientific community slowly coalescing out of its early modern counterpart'.² She identifies the nineteenth century as being of particular importance in the development of an 'organizational tradition' in scientific practice; elite

¹ In particular: Gleason, M.L., *The Royal Society of London: Years of reform, 1827-1847* (New York: Garland, 1991); Hall, M.B., *All Scientists Now: The Royal Society in the Nineteenth Century* (Cambridge: Cambridge University Press, 1984) pp. 37-62; Lyons, H.G., *The Royal Society 1660–1940: A History of its Administration under its Charters* (Cambridge: Cambridge University Press, 1944), pp. 229-274; MacLeod, R.M., 'Whigs and Savants: Reflections on the Reform Movement in the Royal Society, 1830-1848', in Inkster, I. and Morrell, J.B. (eds), *Metropolis and Province* (London: Routledge 1983), pp. 59 -66; Miller, D.P., 'The Royal Society of London 1800-1835: A Study in the Cultural Politics of Scientific Organisation', (Ph.D. thesis, University of Pennsylvania 1981), pp. 297-311, 346-366; Todd, A. C., *Beyond the Blaze. A Biography of Davies Gilbert* (Bradford Barton: Truro, 1967), pp. 221–266; Williams, L.P., 'The Royal Society and the Founding of the British Association for the Advancement of Science', *Notes and Records of the Royal Society of London* 16 (1961), pp. 221-33; Foote, G.A., 'The Place of Science in the British Reform Movement 1830 – 1850', *Isis* 42 (1951), pp. 192-208.

² Phillips, D., 'Academies and Societies' in Lightman, B.V. (ed.), *A Companion to the History of Science* (Chichester: Wiley, 2016), p. 234.

societies, such as the Royal, 'defined what counted as science'.³ William Lubenow, focussing on the 'social processes' rather than the organization of knowledge, detects a 'shift in the social landscape' within learned societies as the nineteenth century progressed.⁴ He draws parallels with Paul Langford's description of political management in this period moving from a 'court-based culture to a club-based culture' with unpretentious discretion replacing 'display'.⁵ In both respects – organizational and social – the 1830s represented a period of major change for the Royal Society as it emerged from the Banksian era with new priorities. Contrary to the accepted view, this thesis will argue, significant changes in the operation of the Society *were* made, and at an early stage following the election. While these both improved its efficiency and went some way to addressing previous criticisms, they also represented an evolution in the scientific character of the institution. Paradoxically, by electing the King's brother as its leader in November 1830, the Society began to free itself from Presidential autocracy. There were, it will be argued, two key elements to this: the Duke of Sussex's being prepared to relinquish to a degree his absolute power coupled with the emergence of John William Lubbock in the role of what was, in effect, the Society's executive chairman. It is not possible to identify a similar figure in the Royal Society's earlier years, or subsequently. It was the vision and drive of Lubbock, the scientific, clubbable businessman, which shaped the development of the Society in this decade.

The criticisms of the Royal Society that were voiced with increasing strength as the 1820s progressed were essentially of two types. On a fairly simple level, many related to the undeniable administrative inefficiency of the organisation which, it was broadly agreed, rendered it unfit as a champion of the nation's science. Of greater complexity were those

³ Ibid.

⁴ Lubenow, W.C., *'Only Connect': Learned Societies in Nineteenth-Century Britain* (Woodbridge: Boydell Press, 2015), ix, p. 129.

⁵ Ibid.; Langford, P., 'Politics and Manners from Sir Robert Walpole to Sir Robert Peel', *Proceedings of the British Academy* 94 (1996), p. 125.

which concerned the intrinsic character of the institution: the ethos derived from its composition and governance. Here there was a wide spectrum of opinion with many of the scientific members, particularly the reformers amongst the astronomers and geologists, pressing for a Society no longer dominated by non-scientific gentleman and members of the nobility. Their stated aspiration was for a Royal Society free from the power of patronage and run instead by men of science, chosen on merit. The fixation with this 'struggle', which can be traced to Henry Lyons' original account, 'The Scientific Revolt', has led historians to neglect other significant and far-reaching changes which were made in the period before 'victory', in the shape of statute revision restricting Fellowship, was achieved in the late 1840s.⁶ This chapter will begin by considering the nature of the reforms proposed in the last years of the 1820s and the circumstances of the contest of November 1830 itself before focussing on the significance of Lubbock's actions in the election's immediate aftermath. It will then examine Lubbock's pivotal role in how the Society chose to organise both itself, through improved internal arrangements, and science more generally through the establishment of new systems for the review and publication of papers and for the recognition and reward of scientific achievement within a revised structure of branches of science.

2.2 Background to the Election of 1830

The deliberations of the Society's Council and the reports of committees it appointed during 1827, the final year of Sir Humphry Davy's Presidency, give an insight into perceived failings and how it was thought they might be remedied. From January of that year Davy, in poor

⁶ Lyons, *The Royal Society 1660 – 1940*, pp. 229-274. This chapter has the title 'The Scientific Revolt, 1820-1860'; Williams, L.P., 'The Royal Society and the Founding of the British Association for the Advancement of Science', pp. 221-33. Williams's account, in particular, is couched in the now-familiar, martial tones adopted by later authors.

health since the previous autumn, was travelling on the continent In Italy and then Austria.⁷ It was in this period with Davies Gilbert, Treasurer and Vice-President, in charge of Society affairs that serious attempts at reform were initiated.⁸ In February two committees were appointed by the Council: the first to produce a catalogue of ‘instruments belonging to the Royal Society’ and a second – a ‘sub-committee of papers’ – to overhaul a system under which there were lengthy delays in the reading and publishing of papers communicated.⁹ More-significant change was suggested at a Council meeting in March when James South proposed that ways of limiting membership should be considered because ‘the present mode leaves room for too indiscriminate an admission’. The Assistant Secretary was accordingly instructed to prepare an analysis of membership which revealed that only a small proportion of Fellows could be considered as active men of science.¹⁰ In addition, a ‘Committee on Candidates Certificates’, meeting in April, concluded that since 1800 far more signatures on election certificates were those of Fellows who had not contributed papers to the Society, compared with the previous century.¹¹ In the light of this, a special sub-committee was appointed ‘to consider the best means of limiting the number of members admitted into the Society and to make suggestions on that subject as may seem to them conducive to the welfare of the Society’.¹²

The committee, which included Charles Babbage, John Herschel and James South and which reported to the Council in June, recommended a severe restriction on the number of new Fellows elected: just four annually – the most suitable from amongst those whose certificates were submitted in the preceding year – until the total membership had declined

⁷ Paris, J.A., *The Life of Sir Humphry Davy, Bart. LL.D.*, vol. 2 (London: Colburn and Bentley, 1831), p. 297-302

⁸ Hall, *All Scientists Now*, pp. 32-33.

⁹ *Ibid.*, p. 27.

¹⁰ Minutes of the Council of the Royal Society, 1 March 1827, as quoted in Todd, *Beyond the Blaze*, p. 226.

¹¹ Miller, ‘The Royal Society of London 1800-1835’, p. 302.

¹² Minutes of the Council of the Royal Society, 3 May 1827, as quoted in Todd, *Beyond the Blaze*, p. 227.

to 400 (it was 714 at that time).¹³ Two further and significant reforms were proposed. Firstly, the appointment of a permanent committee to keep a strict control over the Society's finances and secondly, that recommendations for members of the future Council should be a matter for 'the diligent and anxious deliberations of the expiring Council.'¹⁴ The Council would no longer 'be limited to the acceptance of a list presented to them' by the President.¹⁵ On 1 July, at the commencement of the Society's long summer vacation, Gilbert received a letter from Davy, still abroad (now in Salzburg), asking him if he would 'be so good as to communicate my resignation to the Council' because of his 'severe and long continued illness'.¹⁶ The long vacation precluded further consideration of the Committee's recommendations which were shelved until after the Anniversary Meeting of 30 November, 1827, at which Gilbert was elected President, unopposed.¹⁷ Although, under Gilbert's Presidency, the Papers Committee made some progress and there was increased scrutiny of finances, consideration of the membership reforms was postponed repeatedly by a now more reactionary Council, and then quietly forgotten about.¹⁸ The question of reform had not gone away, however, and it would resurface with increased vigour in 1830.

From early in 1828 it had been Gilbert's intention that he should be succeeded as President by Augustus Frederick, Duke of Sussex, sixth son of George III and brother of the then sovereign, George IV.¹⁹ Most Fellows, however, were unaware of this until the approach of the Anniversary Meeting of 1830. The Duke was elected a Fellow on 22 May 1828 under a procedure reserved for Princes of the Blood Royal and Peers whereby he could be proposed (by Gilbert) and elected at the same meeting. Notwithstanding the Council's generally

¹³ Hall, *All Scientists Now*, p. 26; Gleason, *The Royal Society of London*, p. 129.

¹⁴ Report of the Limitation of Admissions Committee, Royal Society Domestic Manuscripts DM 1.36, as quoted in Miller, 'The Royal Society of London 1800-1835', p. 304.

¹⁵ Committee Book of the Royal Society, p. 161, as quoted in Todd, *Beyond the Blaze*, p. 227.

¹⁶ Paris, J.A., *The Life of Sir Humphry Davy, Bart. LL.D.*, vol. 2 (London: Colburn and Bentley, 1831), p. 301

¹⁷ Minutes of the Council of the Royal Society, 26 November 1827, Royal Society Archive CMO/10.

¹⁸ Miller, 'The Royal Society of London 1800-1835', p. 310.

¹⁹ Todd, *Beyond the Blaze*, p. 242.

compliant nature, it was prompted on 26 June to amend the Statutes to require notice of such intention to be given at a previous meeting, thus limiting Presidential power.²⁰

In MacLeod's view, 'the deepest difficulty in interpreting the history of institutions in this period lies in untangling the complex relationship between events at the RS and parallel events in British political life'.²¹ Perhaps MacLeod was referring to enfranchisement generally, but if 'parallel events' implies that something akin to a Tory-reactionary/Whig-reformist struggle was in evidence within the Royal Society, as it was in the country at large, then there is little to support this view in the circumstances which brought the Duke of Sussex to the Presidency. The Duke was a life-long Whig and a vocal supporter of liberalism. Notably, within the House of Lords, he had been a keen advocate of Catholic Emancipation. An active supporter of parliamentary reform, he would later have an important role in the crafting and eventual passing of the Great Reform Bill in 1832.²² Although, as a young man, Davies Gilbert had espoused radical views and had been, in the early 1790s, an enthusiastic supporter of the French revolutionaries, those days were long past: he had been a confirmed Tory since having been disquieted by the period of civil unrest which followed the ending of the war with France in 1815.²³ That Davies Gilbert's choice of successor was opposed to him politically was of little consequence to the retiring President. What was important was that Sussex was a man of considerable learning and, crucially, rank.

In 1830, old divisions reared their head once again and received a very public airing, in particular, through three publications: Babbage's *Reflections on the Decline of Science in England*, South's *Thirty-Six Charges against the President and Council of the Royal Society*

²⁰ Minutes of the Council of the Royal Society, 26 June 1828, as quoted in Todd, *Beyond the Blaze*, p. 242.

²¹ MacLeod, 'Whigs and Savants', p. 56.

²² Gillen, M., *Royal Duke, Augustus Frederick, Duke of Sussex (1773-1843)* (Sidgwick and Jackson: London, 1976), pp. 184-92.

²³ Todd, *Beyond the Blaze*, pp. 32-33, 159-68.

and Granville's *Science without a Head*.²⁴ The substance of the criticism which they contain will be discussed in later sections but it should be noted that Babbage sent Lubbock a copy of his *Reflections*. Lubbock suggested in reply that Babbage might have 'entitled' it 'with more truth "On the Decline of Science in London"' for there is nothing in your book on the state of science at Cambridge or in Edinburgh, and I do not think that in these places science is on the wane'.²⁵ Lubbock, therefore, for whom Sir James South and other prominent reformers such as William Fitton and Francis Baily were family friends, (and would remain so), was at the centre of the debate regarding the future of science.²⁶

The three publications provided an overture to events in the days leading up to the Presidential election which reveal the true extent of division within the Society. An impromptu committee of reformers, meeting on 11 November, passed a resolution that the 'President and Council be recommended to take into their consideration the propriety of making out a list' of suitable candidates from whom fellows could select the new Council in the coming election.²⁷ In response, the Council meeting of 15 November voted by a narrow majority (six votes to four) to recommend for the new Council eleven who were existing members, carrying on as was normal practice for a second year, and to provide a list of twenty-nine others from whom Fellows could select ten.²⁸ This list, which was selected at the subsequent meeting (18 November) contained the name of Herschel, but not that of the Duke of Sussex, who, if not elected to the Council, would be ineligible to stand for President. However, Sussex reiterated his intention, as noted in *The Times* of 23 November, 'to offer

²⁴ Babbage, C., *Reflections on the Decline of Science in England and on some of its Causes* (London, 1830); South, J., *Thirty-Six Charges against the President and Council of the Royal Society* (London, 1830); Granville, A.B., *Science without a Head, or the Royal Society Dissected* (London, 1830).

²⁵ Lubbock to Babbage, late April 1830, quoted in Gleason, *The Royal Society of London*, p. 191. Gleason incorrectly attributes the letter to Sir John William Lubbock.

²⁶ See, for example, South to Lubbock, 7 June 1832 – 'to you, your family and friends, my observatory is always accessible, as if it were your own'. Royal Society Lubbock Collection S 305.

²⁷ Minutes of the Council of the Royal Society, 11 November 1830, Royal Society Archive CMO/11.

²⁸ Minutes of the Council of the Royal Society, 15 November 1830, Royal Society Archive CMO/11.

himself as candidate . . . the only Fellow of the Royal Society who has, up to the present moment, declared such to be his intention.’²⁹

A reluctant John Herschel was thrust into an election contest with the Duke when a group of sixty-three Fellows notified *The Times* on 25 November that they were ‘of opinion that Mr Herschel, by his varied and profound knowledge and high personal character is eminently qualified to fill the office of President’ and that they ‘intend putting him in nomination on the ensuing day of election’.³⁰ These ‘Declarationists’ (as termed by MacLeod) were a diverse group, mainly, but by no means exclusively, active men of science, representing the range of scientific interest and a spread of political opinion.³¹ MacLeod has suggested that the circulation of this declaration was ‘spurred by Babbage’ but, in general, the list can be said to represent moderate opinion within the scientific Fellows, which was the intention of Fitton and Roderick Impey Murchison who gathered the signatures. Amongst the fourteen additional names which appear in a revised list published in *The Times* of 29 November is that of John William Lubbock, publicly demonstrating his support for Herschel and reform.³² The disquiet engendered by the impending vote may be gauged from the comments of physician Sir Alexander Crichton in a letter to his friend, the reformer Murchison:

This contest will do infinite injury to the Royal Society; one or other of the candidates ought to be induced to withdraw. If the Duke is resolved to stand . . . I think the sincere well-wishers of Herschel ought not to bring him forward but this I say with perfect submission and respect. Oh Dear! Oh Dear!³³

²⁹ *The Times*, 23 November 1830 quoting a report in the *Athenaeum*.

³⁰ *The Times*, 25 November 1830.

³¹ Miller, ‘The Royal Society of London 1800-1835’, pp. 358-59; MacLeod, ‘Whigs and Savants’, pp. 64-65.

³² *The Times*, 29 November 1830.

³³ Crichton to Murchison, 24 November, 1830. Full letter printed in Morrell, J.B. and Thackray, A., *Gentlemen of Science. Early Correspondence of the British Association for the Advancement of Science* (London: Royal Historical Society, 1984), p. 31.

It is usually recorded that at the St Andrew's Day Anniversary Meeting of 30 November, with barely one third of Fellows voting, the poll for President was 119 to 111 in favour of the Duke of Sussex. However, Herschel was technically ineligible to stand for President since, in the vote preceding that for the Officers, he had failed, first, to be elected to the Council. Hall, who is alone in noting this, suggests that his ineligibility 'was apparently overlooked' but a report in *The Times* of 1 December and a letter appearing in the paper the following day make it clear that the vote was for the *Council*, a choice between that of Sussex or that of Herschel.³⁴ This would seem to be in accordance with the normal practice, usually a formality, of electing the Council first, followed by the Officers. Whatever the exact circumstances of the unprecedented vote, one which required at least three hours to be concluded, it represented a rejection both of Herschel himself and of most (twelve out of twenty) of the members of his proposed Council.

2.3 The Senior Vice-President

Herschel's proposed Council had, at his own request, been selected for him by Babbage, Fitton and Francis Beaufort while the Duke's had been chosen at a meeting at the house of Thomas Pettigrew, (Sussex's advisor).³⁵ Eight Fellows had found themselves nominated for the Councils of both Herschel and Sussex.³⁶ Amongst these was John William Lubbock, who was nominated for Treasurer on both lists and was duly elected to that position. Hall notes that 'the Treasurer was not after all Gilbert,' but Lubbock, suggesting that there had been an expectation that the retiring President would resume his former role and, indeed, South, in his *Thirty-Six Charges*, had accused the Council of allowing Gilbert 'openly to bargain for his

³⁴ Hall, *All Scientists Now*, p. 58; *The Times*, 1 and 2 December, 1830.

³⁵ Herschel to Babbage, 26 November 1830, Royal Society Herschel Collection 2.257 as quoted in Miller, 'The Royal Society of London 1800-1835', p. 359; *ibid.*, p. 383.

³⁶ MacLeod, 'Whigs and Savants', p. 85.

return to the post of Treasurer.³⁷ However, Lubbock had been nominated for Treasurer at a Council Meeting on 19 November, over which Gilbert was presiding, and it is clear from a later letter that Lubbock considered Gilbert himself to have been primarily responsible for his appointment. 'I believe you were instrumental in placing me in the situation I have had the honour to hold at the Royal Society,' he would write.³⁸ While it is perhaps going too far to suggest that Gilbert groomed Lubbock for a position within the Society, throughout 1830 Gilbert had contributed significantly to the enhancement of Lubbock's reputation by, for example, asking him to attend Society committee meetings to give his opinion on meteorological observations, seeking his views on papers communicated to the Society and providing letters of introduction to the Admiralty relating to his work on the Tides.³⁹ In May, Lubbock had submitted written evidence to the House of Commons Population Bill Committee, of which Gilbert was chair.⁴⁰ Henry Kater, Treasurer under Gilbert (and who had proposed Lubbock for Fellowship some two years previously) was retained on the Council in spite of his having signed the declaration for Herschel but he had no wish to continue managing the Society's financial affairs.⁴¹

The composition of the new Council which came together for the first time for dinner at the Crown and Anchor, Strand, in the evening of election day, has not been examined elsewhere.⁴² There were fourteen men of science on the Council including four astronomers (Peter Barlow, Kater, Lubbock and the Astronomer Royal, John Pond), three mathematicians (William Cavendish, Gilbert and George Peacock), two physicians (Peter Mark Roget – who was the senior Secretary – and Alexander Wilson Philip) and two

³⁷ Hall, *All Scientists Now*, p. 64; South, J., Charge No. 24. As printed in *The Times*, 11 November 1830.

³⁸ Minutes of the Council of the Royal Society, 19 November 1830, Royal Society CMO/11; Lubbock to Gilbert, probably November 1835. Royal Society Lubbock Collection L 443.

³⁹ Gilbert to Lubbock, January, June and July 1830. Royal Society Lubbock Collection G 38-41.

⁴⁰ John Rickman to Lubbock, 22 May 1830. Royal Society Lubbock collection R 68.

⁴¹ Hall, *All Scientists Now*, p. 52.

⁴² *The Times*, 1 December 1830.

naturalists (John George Children – junior Secretary – and Nicholas Aylward Vigors). The engineer George Rennie, the King’s surgeon Sir Astley Cooper and the chemist Michael Faraday completed the list of scientific men. The seven non-scientific members included the President himself, the antiquarian Henry Ellis, the Secretary to the Admiralty John Barrow and the illegitimate son of the King (and therefore Sussex’s nephew) Colonel Fitzclarence. In addition within this non-scientific group, there were three senior Tory politicians, out of office following Earl Grey’s formation of a Whig government just over a week previously. These were former Secretary of State for War and the Colonies Sir George Murray, former First Lord of the Admiralty Viscount Melville and former Home Secretary Sir Robert Peel. Together with Gilbert, they constituted a strong Tory presence on the Duke’s Council. Six of the Council could be described as politically Whig – Sussex, Cavendish, Lubbock, Peacock, Roget and Vigors. However, with the exception perhaps of Vigors, who two years later would become a Whig/Radical M.P., they represent moderate opinion.

The mean age of Council members was 50, to the nearest year, and they had been Fellows for an average of 14 years. (In contrast, Lubbock was 27 and had been a Fellow for just under two years). Somewhat surprisingly, five members of the Council which the Duke had nominated had signed the declaration for Herschel. These are Ellis, Kater, Rennie and two late signatories – Barlow and Lubbock. There was also Faraday who supported reform but did not sign.⁴³ Overall, however, the Council was not one which seemed at all likely to support, let alone press for, reform measures. ‘Thorns do not produce figs,’ Fitton observed to Lubbock when assessing the likelihood.⁴⁴ Roget, writing six days after the election, hoped that Sussex might ‘eventually succeed in obtaining the cooperation of those who now

⁴³ Faraday was one of the thirty-three Fellows who signed the request for information on Gilbert’s negotiations with Sussex. However, he wrote a foreword to and facilitated the publication of Gerard Moll’s counter to Babbage’s *Reflections* ‘without being considered as expressing an opinion on the subject either one way or the other’. Moll, G., *On the Alleged Decline of Science in England by a Foreigner* (London, 1831).

⁴⁴ Fitton to Lubbock, 13 December 1830, Royal Society Lubbock Collection F 68.

assume so hostile an attitude and threaten to secede from the Society'.⁴⁵ He had grave misgivings, however, continuing:

The greatest evil in our present condition is the very imbecile Council which was nominated at the meeting at Mr Pettigrew's house and which I fear will paralyse our efforts to conduct the affairs of the Society in a way they ought for the advantage of Science and of the real interests of the Society. . . I foresee very clearly that ours will not be a bed of roses, at least for some time to come . . .

It is at this juncture, just days after the election, that we must turn our attention to John William Lubbock to examine his actions regarding three key issues, on two of which he would oppose the wishes of the new President. These would have considerable bearing on the power of the Council and Lubbock's importance within it. On 4 December Lubbock received notification of the Duke's first Council meeting in the form of a printed notice, with details completed by hand, as used in previous years. 'By Order of the President' 'These are to give notice that a Council of the Royal Society is appointed to meet on *Monday* the 6th of *December 1830* at *one o'clock*.' However, 'at their Apartments in Somerset House, Strand' had been neatly crossed out and replaced with a hand-written '*Kensington Palace*.' Lubbock replied immediately to the Secretary:

I beg most respectfully to decline attending any meeting of the Royal Society held elsewhere than at Somerset House, and I request you if such meeting to be held on Monday next to enter as a minute that I protest against all the proceedings considering it to be derogatory to the dignity of the Royal Society and prejudicial to its interests that meetings of the Council should be held anywhere but at the apartments of the Society.⁴⁶

Lubbock sent a copy of this letter to William Fitton, thus ensuring that those in the reform camp were aware of it. Fitton praised the 'right and manly feeling which it displays,' adding:

⁴⁵ Roget to William Swainson, 5 December 1830 as quoted in Miller, 'The Royal Society of London 1800-1835', p. 383.

⁴⁶ Printed notice, 3 December 1830 and Lubbock reply, Royal Society Lubbock Collection R 301.

‘Your spirited and just protest therefore entitles you to the thanks of all good members of the institution and I trust will prove to be the commencement of a series of measures by which a better order of things may be restored’.⁴⁷ Lubbock next sought advice from family friend and leading reformer, Francis Baily, concerning the propriety of Council meetings being held away from Somerset House. Baily consulted the first three Charters of the Royal Society before replying on 8 December that, although there was some ambiguity, the first Charter ‘concedes to the President, Council and Fellows, that the President and Council may hold their meetings anywhere within 10 miles of the City of London.’⁴⁸ The Fellows must concur with this, Baily emphasised. There is no indication of any meeting having been held at Kensington Palace on 6 December; Sussex’s first Council meeting was held on Thursday, 9 December, at Somerset House where all subsequent meetings would be held. While it is not possible to determine to what extent this was in consequence of Lubbock’s strongly-worded letter, what is significant is that he should feel the need to make a stand on this issue.

Another matter was of greater concern to Baily. In the same letter he went on to ask Lubbock:

But, whilst we are on this subject of law and equity, what do you say to his R.H not having paid his admission fee, and contribution. By the express words of the statutes, he has forfeited his election and I have no doubt a Quo Warranto would oust him.⁴⁹

It had emerged that the Duke of Sussex had never paid his admission fees on becoming a Fellow in 1828. His election was, therefore, technically void. Baily was suggesting the possibility of a legal challenge and Gilbert, whose decision it had been to waive the admission fees, was sufficiently concerned to visit the lawyers of King’s Bench to ask for ‘an

⁴⁷ Fitton to Lubbock, 7 December 1830, Royal Society Lubbock Collection F 65.

⁴⁸ Baily to Lubbock, 8 December 1830, Royal Society Lubbock Collection B 42.

⁴⁹ Ibid.

extemporaneous opinion'.⁵⁰ On 9 December Gilbert sent Lubbock a copy of the case he had presented. In it he explained that 'HRH tendered his admission for composition which I declined accepting on the grounds that no money had ever been paid to the Society by an individual in his station of life.'⁵¹ It seems that the lawyers agreed that there was precedent for this. However, it is Gilbert's looking to Lubbock for support on this matter that is of particular interest. The following Sunday (12 December) at the house of Sir James South, Lubbock was harangued on the subject of the recent election by South himself, and by Charles Babbage – 'you sustained the attack with forbearance', South wrote apologetically afterwards.⁵² Lubbock's reply sets out his position clearly:

Whether or not I agree in opinion with Mr Babbage with respect to the affairs of the Society or the inexpediency of the election of the Duke of Sussex I should be wanting in propriety if I were to take pleasure in listening to violent and unreasonable attacks on him and upon the Council which I think only calculated to bring the Society into disgrace.⁵³

Exactly two weeks on from the election, Lubbock had shown that he was prepared to challenge the Duke's authority while, at the same time, supporting his position as President. This latter point was reinforced in Lubbock's letter to Fitton of 7 March 1831. 'I can only assure you with the utmost sincerity that I believe no member of the Society is more anxious for the interests and for the improvement of its constitution than our Royal President,' he stated.

The third issue concerned the status of the Treasurer as a Vice-President. It had been customary for there to have been two Vice-Presidents, chosen by the President, and it was usual for the Treasurer to be one of these. Soon after the election the Duke announced his

⁵⁰ Gilbert to Lubbock, 9 December 1830, Royal Society Lubbock Collection G 42.

⁵¹ Ibid.

⁵² South to Lubbock and Lubbock to South, 14 December 1830, Royal Society Lubbock Collection S 298.

⁵³ Ibid.

intention to choose six Vice-Presidents. A further innovation, one which was perhaps based on a suggestion by Granville in *Science without a Head*, was to be that each of the six would have responsibility for a particular area of science.⁵⁴ This was communicated to the Vice-Presidents through Secretary Children, as would be the President's usual practice. Lubbock wrote to the Duke on 20 December stating his objections to the proposal and also pointing out that the Treasurer had previously been considered the senior Vice-President (as had certainly been the case with Gilbert under Davy and Kater under Gilbert).⁵⁵ The following day he received a letter from Peacock, an intimate of the Duke's with an ease of access denied to other Council members. Peacock explained that 'his RH is very anxious to have the power of requesting particular Vice Presidents to act, in his absence on particular nights and on particular occasions in a manner to be hereafter settled'.⁵⁶ The letter continued:

He is evidently distressed by the feeling which you attach to the union of Vice President and Treasurer as giving you necessary precedence on the occasions above the other Vice Presidents: this does not appear to be sanctioned by precedent and therefore you would do no injury to the office of Treasurer by foregoing this claim: as I am quite sure that you have no object in view but the good of the Society and as you would gratify HRH greatly by complying with his wishes I have to write this note to you on this subject.

This is an instruction from a more senior figure, albeit one who had signed Lubbock's election certificate, to respect the President's wishes and acquiesce. Peacock added: 'I shall be at the Royal Society tomorrow a little before 4 o'clock when I hope to be able to talk to you on this subject'.

It is not known how Peacock came to be an intimate of the Duke's but he was clearly an influential figure with the Society's President (see p. 132). Miller suggests that Peacock,

⁵⁴ Granville, A.B., *Science without a Head*, pp. 83-88. Granville's complicated suggestion was for Fellows to belong to 'classes' of science such as Astronomy, Geology, Medical Science etc.

⁵⁵ Children to Lubbock, 20 December 1830, Royal Society Lubbock Collection C 120.

⁵⁶ Peacock to Lubbock, 21 December 1830, Royal Society Lubbock Collection P 99.

Lubbock and Roget were part of a small group within the Society which 'set to work almost immediately after the election to reduce the polarization into hostile groups which the Duke's accession had produced.'⁵⁷ While Lubbock and Roget often worked closely, there is no evidence of their working with Peacock who, although having the ear of the President, had antagonised the reformers by supporting the Duke in the election and, in consequence, had lost his influence with them. Fitton reported to Lubbock that Richard Jones, economist and Cambridge Analytical Society member, had told him that he 'cannot get over Peacock having voted against his old friend Herschel!'⁵⁸

On 30 December Sussex wrote again (relayed by Children) on the subject of the Vice-Presidents offering the inducement that it might be possible to circumvent normal procedure with regard to papers: 'I see no reason why a Vice President should not endeavour to get some paper immediately connected with his nominal department laid before the Society on the night of his presidency'.⁵⁹ It may be assumed that Lubbock remained unconvinced by the Duke's plans and was not content to have only equal status with the other Vice-Presidents because, on 28 January, 1831, he wrote to the President to tender his resignation. Sussex, out of London at the Brighton Royal Pavilion, replied in person stating that he 'has received Mr Lubbock's note with extreme regret . . . and it is with the greater regret he does so as he did and does work with confidence to Mr Lubbock's advice and cooperation for re-establishing the Royal Society upon a more liberal and active footing . . .'⁶⁰ Marie Louise Gleason makes reference to this part of Sussex's letter as evidence of the Duke's reliance on his Treasurer's support but fails to remark on the document's greater significance – that it is in response to Lubbock's resignation.⁶¹ The letter continued:

⁵⁷ Miller, 'The Royal Society of London 1800-1835', p. 384.

⁵⁸ Fitton to Lubbock, 7 December 1830, Royal Society Lubbock Collection F 65.

⁵⁹ Children to Lubbock, 30 December 1830, Royal Society Lubbock Collection C 113.

⁶⁰ Duke of Sussex to Lubbock, 3 February 1831, Royal Society Lubbock Collection A 308.

⁶¹ Gleason, *The Royal Society of London*, p. 304.

The Duke is consequently unwilling to accept of Mr Lubbock's resignation until he has had the pleasure of seeing and conversing with him on the subject as his only wish is to consult, the welfare of the institution, and the goodwill of the Society, among whom he considers Mr Lubbock as one of its most efficient and important members.

It is not clear exactly how the matter was resolved but Lubbock did not carry through his resignation, the plan for Vice-Presidential 'departments' was dropped and Lubbock was confirmed as the *Senior Vice-President* with authority to call and chair Council meetings in the (increasingly frequent) absence through poor health of the President.⁶² This episode demonstrates the importance which the Duke attached to retaining Lubbock in a senior position within the Society. The following month, at a private levee, the Duke presented Lubbock to King William IV thus cementing the strong relationship with his Treasurer that would characterise the early years of his Presidency.⁶³

2.4 Changes to the operation of the Society

2.4.1 Progress in the first year of Sussex's Presidency

As early as 13 December 1830, Lubbock was discussing informally with Fitton the possible formation of a committee to revise the Statutes; one on which members of the reform group would be invited to serve. Fitton's response was, and would remain, cool, but it does demonstrate that he considers the idea to be Lubbock's:

I do really think that many of the best members of the R. Society, whom I know, would not act on such a committee as you think of, with so large a number . . . of the old school to outvote and outmanoeuvre them.⁶⁴

⁶² Charter dated 16 December 1830 and signed by the Duke of Sussex giving Lubbock authority to deputise in the office of President of the Royal Society, Royal Society Archive MM 21/80. This authority was confirmed in October 1831. Children to Lubbock, 6 October 1831, Royal Society Lubbock Collection C116.

⁶³ *Spectator*, 19 March 1831 reporting the holding of a Court and Levee on 16 March.

⁶⁴ Fitton to Lubbock, 13 December 1830, Royal Society Lubbock Collection F 68.

Nevertheless, a few days later, at the Duke's second Council Meeting (16 December), it was resolved that a committee 'for the purpose of revising the Charter and Statutes' should be appointed, to consist of the Council with the 'power to add to their number such Fellows as they may think proper' (eventually there would be 21 additional members).⁶⁵ By the end of January, seven other committees had been appointed or reappointed, several of which would address failings as perceived by the Society's critics.⁶⁶ This early signally of intent by the President and his Council has previously gone unremarked. Lubbock served on five of these committees and was the Chair of two. In a first step towards reconciliation, leading members of the reform group were invited to serve and some accepted.⁶⁷ Herschel declined the invitation to serve on the two committees for which he was nominated.⁶⁸ Even the harshest critic, South, whose *Charges* 28 – 30 had bemoaned the waste of public money on the optical glass experiments, was invited to serve on a committee to look into this matter. He declined declaring, from his past experience of Royal Society committees, 'I have no wish to expose myself to a repetition of similar annoyances'.⁶⁹ Lubbock's role in establishing this particular committee (of which he himself was not a member) is shown by a letter to him from Peter Barlow who had previously made some suggestions regarding the construction of achromatic lenses:

⁶⁵ Minutes of the Council of the Royal Society, 16 December 1830, Royal Society Archive CMO/11.

⁶⁶ Minutes of the Council of the Royal Society, 9 and 16 December 1830, 20 January 1831, Royal Society Archive CMO/11. The 'Papers' Committee was reappointed and the 1829 committee to advise Government on Babbage's 'Engines' was resurrected and supplemented with additional members. In addition to the Charter and Statutes Committee, the other new committees were the Glass for Optical Purposes Committee, Meteorological Committee, Arundel MSS Committee, Honorary Rewards Committee and the Committee to examine Barlow's Telescope. Lubbock was chair of the last two.

⁶⁷ Ibid. Beaufort, Dollond and Daniell (who chaired the Meteorological Committee) accepted. Baily declined.

⁶⁸ Minutes of the Council of the Royal Society, 20 January 1831, Royal Society Archive CMO/11.

⁶⁹ Ibid.; South, *Thirty-Six Charges*; Minutes of the Council of the Royal Society, 20 January 1831, Royal Society Archive CMO/11.

I was not aware till I received your letter that any question had been before the Council relative to my proposition and I am much obliged to you for having brought it forward. I have certainly no objection to the plan you have proposed, on the contrary I shall be glad to avail myself of the opportunity it affords of explaining my views on the subject.⁷⁰

In early March, Fellows chosen for the Charter and Statutes Committee, including leading reformers, received official notices of their appointment while Lubbock continued informal approaches to solicit the participation of individuals such as Baily, Fitton, Whewell and Babbage.⁷¹ Babbage's response was that it would be 'degrading' to cooperate. Baily, Fitton and Whewell also declined but did offer some constructive comments and hinted at the possibility of future participation. For Fitton, a necessary precondition would be the resignation of the Duke of Sussex, but he was advised by Lubbock that he would be mistaken to believe 'that there was any probability that the President would resign which of all things is the most unlikely'.⁷² Other notable scientific figures who refused to serve included Herschel – 'claims on his time are such as will not permit his devoting any portion of it to the discussion of the subject' – and botanist Robert Brown whose letter simply stated that it was 'not in his power to attend.' (Brown, Baily and Fitton all used this identical phrase).⁷³ Most of the leading reformers, therefore, boycotted the Committee. Seven influential figures who had signed the declaration for Herschel did, however, agree to join. These were: hydrographer Francis Beaufort; chemist John Frederic Daniell; geologists George Greenough, Roderick Impey Murchison, and Adam Sedgwick; astronomer Richard Sheepshanks; radical M.P. and medical reformer, Henry Warburton.⁷⁴

⁷⁰ Barlow to Lubbock, 25 December 1830, Royal Society Lubbock Collection B 111.

⁷¹ Baily to Lubbock, 9 March 1831, Royal Society Lubbock Collection B 44; Fitton to Lubbock, 9 March 1831, Royal Society Lubbock Collection F 66; Whewell to Lubbock, January 1831, Royal Society Lubbock Collection W 256.

⁷² Lubbock to Fitton, 11 March 1831, Royal Society Lubbock Collection F 66.

⁷³ Minutes of the Council of the Royal Society, 17 March 1831, Royal Society Archive CMO/11.

⁷⁴ Royal Society Domestic Manuscripts 1.38 and Council Minutes, 17 March 1831 as quoted in Hall, *All Scientists Now*, p. 233; Minutes of the Council of the Royal Society, 12 April 1831, Royal Society Archive CMO/11.

Even before the committee had met for the first time its composition changed significantly through the resignation from the Council, in April, of the three senior Tory politicians: Melville, Murray and Peel. Having failed to attend any of the eight Council meetings which had been held up to that point, their collective resignation was prompted by a letter from the Secretary, on the Council's instruction of 17 March, enquiring 'whether it is likely that you will be able to give [the Council] the advantage of your attendance'.⁷⁵ It would seem that this action was planned in advance since the Duke's nephew, Fitzclarence, attended a Council meeting for the first and only time on 17 March and thus escaped being sent this letter. It is recorded that Melville, Murray and Peel 'intimated their inability to attend, from the pressure of other avocations' and their departure allowed them to be replaced, following a ballot of Fellows, at the Society's meeting of 28 April. On the Council's recommendation, the meeting elected: Daniell (a reformer and already on the Statutes Committee), optical instrument manufacturer, George Dollond (like Daniell, one who had signed the declaration for Herschel) and Keeper of Natural History at the British Museum, Charles Konig, who was appointed as the Society's Foreign Secretary.⁷⁶ Both the Council and the Committee became, therefore, considerably more scientific and reform-minded than might have been expected, one third of both the members of Council (7 out of 21) and the Committee members (14 out of 42) now having signed the declaration for Herschel.

On 18 April, some three weeks before the Committee's first meeting, Children wrote to Lubbock as follows:

His Royal Highness wishes to have a consultation with yourself, Captain Kater and the Secretaries before the Charter Committee is summoned, and he requests that

⁷⁵ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive* (London, 1837), p. 85; Minutes of the Council of the Royal Society, 17 March 1831, Royal Society Archive CMO/11.

⁷⁶ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 46; Minutes of the Council of the Royal Society, 12 April 1830, Royal Society Archive CMO/11. It appears that Konig had already been elected to the Council as 'Foreign Secretary' in December 1830 on a ballot of Council members, not Fellows.

we will in the meantime draw up a sketch of the principal changes proposed to be introduced into the statutes.⁷⁷

This small group was therefore charged with preliminary planning before the full Charter and Statutes Committee met for the first time, with the President in the chair, on 7 May. There were subsequent meetings on 16 May and 14 July before a draft report was presented to the Council on 28 July, and approved on 11 August.⁷⁸ The changes introduced as a result of the committee's recommendations were included in the Report of the Council at the Anniversary Meeting on 30 November.⁷⁹ This report was in itself an innovation which became a normal feature of this meeting.

Hall considers the changes outlined at the Anniversary Meeting to represent a 'modest degree of statute reform' but, in the context of what had occurred previously, some are particularly noteworthy.⁸⁰ Two relate to the process by which new fellows were elected: six signatures now required on Certificates instead of three and elections restricted to four occasions during the year. With most new Fellows having upwards of ten signatures on their election certificates, the requirement for six was, in some senses, meaningless. However, it represented a symbolic response, albeit limited, to the long-standing complaints about the ease with which new Fellows could get themselves elected. Granville had in fact suggested six as an appropriate figure, but as part of a procedure which would see Fellows elected to a 'class' of science.⁸¹

There was, however, to be no limitation on the numbers of new Fellows elected. Such an amendment had been proposed by Beaufort, seconded by Murchison, but rejected

⁷⁷ Children to Lubbock, 18 April 1831, Royal Society Lubbock Collection C 114.

⁷⁸ Hall, *All Scientists Now*, p. 233; Minutes of the Council of the Royal Society, 28 July and 11 August 1831, Royal Society Archive CMO/11.

⁷⁹ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 85.

⁸⁰ Hall, *All Scientists Now*, p. 69.

⁸¹ Granville, *Science without a Head*, pp. 83-87, 94.

in a ballot of committee members on 16 May.⁸² The financial implications of restricting membership may have had a bearing on this decision together with, as the Council explained, ‘the difficulties and expenses that would attend the procuring of a new charter’.⁸³ In consequence, admission procedures continued largely unchanged. Peacock later wrote to Lubbock expressing concern regarding the new Fellows who had been elected since the change in the Statutes. ‘Although many good men have been admitted since that time’, he conceded, ‘the general class of persons admitted has greatly deteriorated’.⁸⁴ He was to be particularly concerned at the election, in February 1833, of ‘Dr Nolan whose Bampton Lectures contain a targeted attack upon all scientific institutions’. Nolan’s certificate was written out by one signing himself ‘W Cantaur’ – this is William Howley, Archbishop of Canterbury. In many respects therefore, the Society remained far removed from the reformists’ ideal of being one which elected men of science, on merit.⁸⁵

The Council reported that it was now to be a requirement that ‘lists of persons whom the Council recommend to the Society for election as Council and Officers for the ensuing year to be prepared previous to the Anniversary Meeting’.⁸⁶ Gleason, under the misapprehension that Fellows had previously been able to select the new Council from the complete membership, states that the Statutes Committee, in making this recommendation, had ‘usurped the right of the Fellows to choose their new officers’. In fact, the new procedure was exactly that which the Committee of 1827 had recommended to prevent Fellows having to accept a list drawn up by the President as had been the practice under Banks, Davy and also under Gilbert who was determined that the Society should be ‘rescued’ from such

⁸² Minutes of the Charter and Statutes Committee, 7 and 16 May 1831, Royal Society Archive, CMB/30; Gleason, *The Royal Society of London*, p. 308.

⁸³ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 85.

⁸⁴ Peacock to Lubbock, 7 December 1833, Royal Society Lubbock Collection P 101.

⁸⁵ Frederick Nolan Election Certificate, Royal Society Archive EC/1833/03. Nolan’s lecture had the title ‘Analogy of Revelation and Science Established’.

⁸⁶ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 85.

‘democratic opinion’.⁸⁷ In a sense, however, Gleason is correct in stating that the Council now ‘functioned as a self-perpetuating autonomous body’ although, as will be shown, control over the process rested largely with the Officers.⁸⁸

In addition, the Anniversary Meeting was told, ‘an abstract of the accompts in each year is to be prepared by the Treasurer and printed for the use of the Fellows.’ Lubbock’s overhaul of the Society’s financial arrangements will be discussed in a later section. The Council was also able to report that orders had been given for the completion of the Library catalogue (also discussed below) and that a list of the Society’s philosophical apparatus had been prepared ‘with the kind assistance of Mr Dollond’.⁸⁹ This list would form the basis for Kater and Lubbock’s printed ‘Instruments and Apparatus belonging to the Royal Society’ (1834) which, as Rebekah Higgitt notes, was ‘relied on well into the twentieth century’ and was a major step in the process which saw the Society turn an accumulation of ‘uncatalogued, unnumbered and broken objects’ into something ‘more obviously resembling a collection’.⁹⁰ A list of eighty-two numbered and annotated items may seem of little consequence but its production is just one of many indications of a new ethos within the Society, one that was now characterised by action and efficiency. Lubbock’s involvement in the detail of such administrative matters is illustrated by his letter requesting Kater to make instruments in his possession available to Dollond so that they can be ‘inscribed with Royal Society numbers – 27, 31 46 and 60’ from the list.⁹¹ A copy of this letter, together with copies of hundreds more which Lubbock wrote on official matters, is to be found in the ‘Letter Book of the Officers and Assistant Secretaries of the Royal Society’ which he introduced

⁸⁷ Gilbert to Peel, 22 November 1827, Brit. Mus. Peel papers, Vol. 214, as quoted in Todd, *Beyond the Blaze*, p. 237.

⁸⁸ Gleason, *The Royal Society of London*, p. 353.

⁸⁹ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 87.

⁹⁰ Higgitt, R., ‘Instruments and Relics: The History and Use of the Royal Society’s Object Collections c1850-1950’, *Journal of the History of Collections* 31 (2019), pp. 469, 471.

⁹¹ Lubbock to Kater, 7 March 1832, Royal Society Archive MS/425/56.

immediately on his appointment, a first step towards making the institution more business-like.⁹²

For the first time, recommendations for the new Council had been sent to Fellows for their consideration more than two weeks before the Anniversary Meeting.⁹³ All members 'residing within the limits of the three-penny post' received balloting lists, thus ensuring a much wider distribution than usually employed by the Society (two-penny post). The new Council which was elected by the Fellows in November 1831 was substantially different from that of the previous year: the remaining non-scientific members (excluding the President) had gone, reforming surgeon Joseph Henry Green had replaced Sir Astley Cooper and two other prominent reformers, Murchison and Whewell, were now included. An indication of the injection of 'new blood' is that ten members of the Council would be serving on it for the first time. Murchison, initially reluctant, was persuaded to serve by Lubbock, whose role in the complex process of determining the composition of the new Council will be discussed below.⁹⁴ Whewell's assessment, that the names were now 'nearly as good as are to be had,' attests to the significance of the change.⁹⁵ Whewell was one of five members from the universities of Oxford and Cambridge (there had previously been just one), lessening the metropolitan domination of the Council. Lubbock's formalising of the Council meeting schedule such that it met on the second Thursday of each month facilitated the attendance of out-of-town members.⁹⁶

In his Address at the November Anniversary Meeting of 1831 the President commented: 'the labours of your Council during the past year have been more than

⁹² Letter Book of the Officers and Assistant Secretaries of the Royal Society, Royal Society Archive, MS/425.

⁹³ Minutes of the Council of the Royal Society, 10 November 1831, Royal Society Archive CMO/11.

⁹⁴ Murchison to Lubbock, 17 November 1831, Royal Society Lubbock Collection M 214, M215.

⁹⁵ Whewell to Murchison, 16 November 1831, as quoted in Miller, 'The Royal Society of London 1800-1835', p. 389.

⁹⁶ Smyth to Lubbock, 11 December 1831, Royal Society Lubbock Collection S 218; Hudson to Lubbock, 5 May 1832, Royal Society Lubbock Collection H 507.

commonly important, and have been directed to objects which deeply concern the welfare, good government and general utility of our establishment.⁹⁷ While the President's willingness to accept and even encourage change is sometimes overlooked, it is John William Lubbock who should be considered both the instigator and principal architect of much of what had been achieved in Sussex's first year.

2.4.2 The selection of the new Council

As Hall notes, without comment on the implication: 'Lubbock took the Chair almost invariably at Council meetings while he was Treasurer (1830-1835)'.⁹⁸ Examination of the correspondence reveals that there was much more to his role, however. In this he was assisted by the two Secretaries: Roget and Children. In receipt of an honorarium of £100 per annum, the Secretaries were, in a sense, employees of the Society and, although they would offer opinion (Roget's generally carrying greater weight), decision making, especially on day-to-day matters, was often left to Lubbock (who received no payment for the considerable responsibility of Treasurer). These three would liaise with the President (who was often influenced by Peacock) with regard to the important decisions that the Council would need to take. The interactions are illustrated particularly well by the process of arriving at the list for the new Council to be recommended to the Fellows ahead of the Anniversary meeting of 30 November 1832. With the Society adjourning for Long Vacation on 21 June, and no Council Meeting to be held until 11 October, this small group was responsible for the convoluted process of selecting names for the list. Nearly five months later, this list would need to be presented to the Society as the Council's unanimous recommendation. With Buckland, Christie, Green, Maton, Murchison and Whewell continuing for a permitted second year, and

⁹⁷ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 80.

⁹⁸ Hall, *All Scientists Now*, p. 65.

all the Officers willing to carry on, there were ten vacancies. As will be seen, the overriding aim was to achieve a balanced Council but the process also reveals Royal Society micropolitics at work.

Towards the end of July Lubbock sent to Children for comment a proposed list that he and Roget had put together. Children responded:

I fear Faraday cannot spare time to be on the Council. I know that Rob't Browne cannot – of Telford I know nothing personally. Are Clift and Green wanted on the same Council? All the rest are very good provided the Oxford and Cambridge members will attend.⁹⁹

Children's concern about the attendance of members based at the two universities was well-founded. In the previous year (1831/32), not one of the five had attended even half of the sixteen meetings and Oxford Professor of Geology, Buckland, had attended only two.¹⁰⁰ Children clarified his comments by explaining 'I am very far indeed from wanting to leave out Oxford and Cambridge men. I only wish that those elected should have the inclination and power to attend, and my doubt about Faraday arose from his begging off at the last nomination'.¹⁰¹ He added: 'I think the list you have selected with Roget excellent. The only difficulty is whom to reject. I have sent a copy of it to His Royal Highness.' At the end of August Lubbock sent a revised list of names to Roget who replied as follows: 'I am much obliged to you for sending me the enclosed notes and list which I return. I concur with you perfectly on the remarks you make on the names contained in the latter.' Correspondence with Children shows the list to be: Faraday, Baily, Clift, De la Beche, Hatchett, Cumming, Powell, Brunel or Telford (both engineers), Pepys, Brown or Bicheno (botanists),

⁹⁹ Children to Lubbock, 22 July 1832, Royal Society Lubbock Collection C 134. (Clift and Green were both from the Royal College of Surgeons).

¹⁰⁰ Minutes of the Council of the Royal Society, 8 December 1831 to 30 November 1832, Royal Society Archive CMO/11.

¹⁰¹ Children to Lubbock, 24 July 1832, Royal Society Lubbock Collection C 135.

Sheepshanks or Rigaud (astronomers).¹⁰² On 27 August Children received a proposed list, 'made out by the President,' which was communicated by Peacock and included the following: 'Baily, Hatchett, Powell, Bicheno, Faraday, Browne [sic], Gompertz, Daniell, Brunel, Prout, Sir C Bell'.¹⁰³ This was markedly different from that of Lubbock and Roget but Children added: 'I certainly understand His Royal Highness to wish only to suggest, by no means to dictate, to the Council. For my own part, all I am anxious for, and I am sure I may say the same for His Royal Highness, is a good working Council.' There was further correspondence from which it seems the President had to be dissuaded from nominating several Fellows including the historian, Henry Hallam. 'He is a man of letters and, unless there is a personal objection, I cannot see why we should not have a person of that description on the Council,' the Duke pleaded, unsuccessfully.¹⁰⁴

The Council Meeting of 11 October, with Lubbock in the Chair, nominated, by ballot, the following new members of the Council: Baily, Brown, Brunel, Cumming, Faraday, Hatchett, Herschel, Kater, Prout, Sheepshanks.¹⁰⁵ The nomination of Kater, was perhaps out of courtesy to a loyal servant of the Society since he had already informed Lubbock that he had no wish to stand again.¹⁰⁶ Herschel's nomination, made in the knowledge that he was planning to leave for South Africa in less than a year, was a further demonstration of a desire for reconciliation and was almost certain to be declined, as it would be.¹⁰⁷ Brown, Faraday, Hatchett and Prout also declined. At the beginning of November, therefore, there was still considerable uncertainty. One vacancy was filled by inviting a second astronomer, Rigaud, to serve.¹⁰⁸ There was also a mysterious letter from Children to Lubbock concerning 'certain

¹⁰² Children to Lubbock, 27 August 1832, Royal Society Lubbock Collection C 144.

¹⁰³ *Ibid.*

¹⁰⁴ Children to Lubbock, 17 September 1832, Royal Society Lubbock Collection C 154.

¹⁰⁵ Minutes of the Council of the Royal Society, 11 October 1832, Royal Society Archive CMO/11.

¹⁰⁶ Minutes of the Council of the Royal Society, 10 November 1831, Royal Society Archive CMO/11.

¹⁰⁷ Minutes of the Council of the Royal Society, 25 October 1832, Royal Society Archive CMO/11.

¹⁰⁸ Children to Lubbock, 1 November 1832, Royal Society Lubbock Collection C 160.

hints you have received respecting a certain person,' referred to as 'Mr _'¹⁰⁹ On 8 November the Council made late nominations to replace those who had declined and these were accepted.

Of the ten names finally recommended to the Fellows in advance of the Anniversary Meeting of 30 November, seven are on Lubbock and Roget's original list, while only three are on the Duke's. Benjamin Gompertz, mathematician and member of the Astronomical Society, is the only name to appear on the President's list alone. The Duke had explained that 'after long and mature consideration' he 'must insist' on Gompertz appearing on the list.¹¹⁰ It is not known how hydrographer Francis Beaufort and geologist George Greenough came to fill the remaining two places but they came into contention only at a very late stage. Lubbock's frustration at the laboriousness is evident from his comments to David Brewster, made when it seemed that potential Council members might instead accept responsibility within the newly-formed British Association: 'nobody could form an idea of the difficulty of obtaining proper persons to do the business of the Royal Society . . . the indifference of the members was great'.¹¹¹

The overall conclusion from this somewhat haphazard process is that, in this year at least, the new members of the Council were chosen predominantly by Lubbock, with the assistance of Roget, and that the President was, in general, accepting of their choice. This resulted in a Council containing no fewer than twelve men who had signed the declaration for Herschel. In 1830, Babbage had complained that at Council elections 'printed lists are prepared and put into the hands of members on their entering the room and thus passed into the ballot box,' and that 'the fact is they are private nominations by the President usually

¹⁰⁹ Children to Lubbock, 2 November 1832, Royal Society Lubbock Collection C 161.

¹¹⁰ Children to Lubbock, 1 November 1832, Royal Society Lubbock Collection C 160.

¹¹¹ Brewster to Vernon Harcourt, 4 March 1832, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 133.

without notice to the Council'.¹¹² This was no longer true: Fellows were sent the Council's recommendations two weeks before the Anniversary Meeting and Babbage's assertion that the President had 'the absolute nomination of the whole Council' was now far from correct. The extent to which the lists were 'openly discussed in the Council,' as Babbage suggested they should be, is however, a moot point.

2.4.3 Royal Society finances.

In 1939, Royal Society Treasurer, Sir Henry Lyons, expressed the view that the most important innovation introduced by the Council in 1831 was 'one requiring the annual publication of the Treasurer's Report and of the income and expenditure accounts of the past year'.¹¹³ This was, he stated, due to the 'advice and influence of Mr J.W. Lubbock, the Treasurer'.¹¹⁴ It represented an immediate response to Granville's complaints that 'the treasurer's strong box and his ledger are hermetically sealed, like Aladdin's Cave' and that 'the mode in which the treasurers have hitherto made their report is an insult to the good sense, honesty and privileges of every member'.¹¹⁵ In 1829 for example, Granville remonstrated, nearly all (£4647) of the Society's 'prodigious' income (£4943.15s.8d) had been spent without Fellows being given any information regarding the uses to which their money had been put.¹¹⁶ South's accusation was that funds were 'converted into white-bait, rose-water and sauterne.'¹¹⁷ 'I should say bad Barsac,' Granville corrected him, while

¹¹² Babbage, *Reflections on the Decline of Science*, p. 140.

¹¹³ Lyons, 'One Hundred Years Ago. 1839', *Notes and Records of the Royal Society of London 2* (1939), p. 92.

¹¹⁴ Lyons, 'The Society's Finances Part II – 1831-1938', *Notes and Records of the Royal Society of London 2* (1939), p. 47.

¹¹⁵ Granville, *Science without a Head*, pp. 74, 100.

¹¹⁶ *Ibid.*, p. 101.

¹¹⁷ South, *Thirty-Six Charges*, Charge 20.

agreeing that the Society must explain satisfactorily 'to what purpose is so large an expenditure incurred.'¹¹⁸

Lyons, writing in 1939, noted that between 1831 and 1833 Lubbock 'reorganised the system of accounts and introduced a procedure which only recently had to be revised to meet modern requirements'.¹¹⁹ His first act as Treasurer was to arrange that the Society's funds and securities should be deposited with the family Bank of Lubbock and Forster (both Lubbock's father, Sir John, and his banking partner, botanist Edward Forster, were Fellows of the Royal Society). By 20 January, 1831, he had made the first of many investments of Society money – '£118.9.6 in the purchase of £146.0.10 three per cent consols' (Government Bonds).¹²⁰ Over the next two years Lubbock carried out a thorough examination of the Society's finances which enabled him to present to the Council, in November 1833, a detailed report on the Society's financial position. Lyons' comprehensive examination of the Society's finances during this period highlights the importance of Lubbock's work as Treasurer, the significance of which should not be underestimated.¹²¹ For the most part, the details will not be examined again here but some discussion of financial decisions taken by the Council will be helpful in understanding the issues concerning membership of the Society.

In 1823, the Council had raised the annual subscription from £2.12s to £4 and the composition fee (the alternative to annual payment) from 26 guineas to £40.¹²² There was an additional membership fee of £10 to be paid on election. Fellows paying annually were required to give a bond as guarantee that they would pay their subscriptions. This encouraged most to compound instead with the result that, of the 579 Fellows elected in the twenty years up to 1833, only 113 were paying annually.¹²³ The cost of membership for most

¹¹⁸ Granville, *Science without a Head*, p. 77.

¹¹⁹ Lyons, 'One Hundred Years Ago. 1839', p. 93.

¹²⁰ Minutes of the Council of the Royal Society, 20 January 1831, Royal Society Archive CMO/11.

¹²¹ Lyons, *The Royal Society 1660–1940*, pp. 234-40.

¹²² *Ibid.*, p. 234.

¹²³ *Ibid.*, p. 238; Lyons, 'The Society's Finances Part II – 1831-1938', p.48.

new Fellows was, therefore, £50; a significant sum for those of limited means, including many men of science. William Whewell's membership fees were paid for him by an unknown 'eminent philosopher' when he was elected in April 1820.¹²⁴ In 1831 and now Cambridge Professor of Mineralogy, he would lament that 'the *average* incomes of the professorships of physical science is under £200 and . . . several of these professorships do not exceed £100 per annum'.¹²⁵ In 1833, Peacock wrote twice from Cambridge to Lubbock on the cost of membership: 'There are several other persons here who should be Fellows but who do not like the expense. Such men are Henslow, Miller, Jenyns, [?], Murphy and most especially Airy'.¹²⁶ 'Men of science will reflect seriously before they will pay 50L'.¹²⁷ (Professor of Botany, Henslow, was never to become a Fellow of the Royal Society). Perhaps in response to such concerns, from November 1831 new Fellows who opted to pay annually were no longer required to give a bond guarantee and the numbers paying by this method rose from 90, to 193 by November 1839.¹²⁸ Lubbock felt it necessary to comment, in his report of November 1833, that 'it being now optional for members to compound or not for their annual payments the compositions will most probably go on decreasing, or may cease altogether'.¹²⁹ With many long-standing Fellows still paying only £2.12s annually, Lubbock warned that 'until the amount of the present annual subscription of four pounds has come into full operation a temporary inconvenience will be experienced'.¹³⁰ A Finance Committee was appointed in, December 1833, to look into the question of admission fees. The committee's report, delivered in May 1834, recommended raising the composition fee from £40 to £60. Peacock wrote again to Lubbock to express his concern:

¹²⁴ Todhunter, I., *William Whewell D.D. Master of Trinity College Cambridge* (London: Macmillan 1876), p. 29.

¹²⁵ *Ibid.*, p. 50.

¹²⁶ Peacock to Lubbock, 13 February 1833, Royal Society Lubbock Collection P 100.

¹²⁷ Peacock to Lubbock, 7 December 1833, Royal Society Lubbock Collection P 101.

¹²⁸ Lyons, 'One Hundred Years Ago. 1839', p. 95.

¹²⁹ Lyons, *The Royal Society 1660-1940*, p. 237.

¹³⁰ *Ibid.*

I hope this will not be done without the most absolute necessity: if it is, I don't see a possibility of introducing the really good men of the present day into the society: there is no doubt but that the lists are degenerating and unless some young and vigorous blood can be injected into the veins of the venerable old lady, she will perish . . .¹³¹

As a compromise, the Council resolved that composition fees should be raised in line with the committee's recommendations, but not for any Fellows whose work had been published in the *Philosophical Transactions*.¹³²

In June 1828, the Council, concerned about the non-payment of subscriptions, had established rules for dealing with Fellows in arrears.¹³³ Subscriptions, payable in advance, were due on Lady Day (25 March) and failure to pay would result in the Fellow's name being 'suspended' in the Society's Meeting Rooms.¹³⁴ Fellows not having paid by the date of the Anniversary Meeting would be declared to have ceased to be members. In practice, these rules were only loosely observed and many Fellows were substantially in arrears. In 1831, however, Lubbock introduced a policy of strict enforcement.¹³⁵ On 12 May a printed reminder was sent to defaulters and the names of any who had not paid were suspended two weeks later. On 9 June, a list produced by the Assistant Secretary of Fellows still in arrears was presented to the Council.¹³⁶ This showed 15 to be one year in arrears, 5 to be two years in arrears and, an indication of the Society's laxity, that 4 Fellows had not paid their fees for three years. The Assistant Secretary was instructed to send letters to those concerned warning that would lose their membership. By the beginning of November, just two names, remained suspended and these Fellows were accordingly declared to have ceased to be members. The two concerned were the Chancellor of the Exchequer, Lord

¹³¹ Peacock to Lubbock, 7 May 1834, Royal Society Lubbock Collection P 101 (second letter).

¹³² Lyons, *The Royal Society 1660-1940*, p. 238.

¹³³ Hall, *All Scientists Now*, p. 39.

¹³⁴ Brown, M., 'How Not to Regain Paradise: Henry Bellenden Ker, FRS from 1819 to 1831,' *Notes and Records of the Royal Society of London* 50 (1996), p. 212.

¹³⁵ *Ibid.*

¹³⁶ Minutes of the Council of the Royal Society, 9 June 1831, Royal Society Archive CMO/11.

Althorp, and Henry Bellenden Ker. On 2 November, Althorp's Secretary wrote from Downing Street offering his Lordship's apologies and expressing his 'desire to be continued a member if such an indulgence should not be considered improper'.¹³⁷ With Lubbock in the Chair, the Council resolved that a reply should be sent to 'express the regret of the Council that they are precluded by the Vth section of Chapter III of the Statutes from complying with his Lordship's request'. Ker, wrote to Secretary Roget to enquire if it there were 'any means open to the expelled of regaining Paradise', continuing:

I think considering the great relaxation of former times . . . it would have been fairer on the defaulter if for the first time a special notice of the imminent danger had been given, particularly as the RS unlike other Societies has no collector.¹³⁸

Ker was not readmitted. The uncompromising stance in making an example of these Fellows in arrears is of particular interest. Althorp was a most senior figure both within Parliament and Whig Society, and he was also a colleague of Lubbock's on the Committee of the SDUK. Ker was also on this Committee; he had previously collaborated with Lubbock on several SDUK publications and would continue to do so.¹³⁹ Earlier in the year, he had agreed to serve on the Charter Committee, although he never attended a meeting.¹⁴⁰ Lubbock did, subsequently, ask Librarian James Hudson to enquire into the cost of employing a collector (5% of money collected), but this was not pursued.¹⁴¹ On 5 May 1832, some six weeks after subscriptions were due, sixty copies of the standard letter to Fellows in arrears were ordered, with instructions to the printer to 'keep the type standing'.¹⁴² One year later, on 6 May 1833, Assistant Librarian Robertson sent Lubbock the names and addresses of the eleven Fellows, included amongst them that of the Astronomer Royal, Pond, whose annual contributions

¹³⁷ Minutes of the Council of the Royal Society, 3 November 1831, Royal Society Archive CMO/11.

¹³⁸ Ker to Roget, 8 December 1831, Royal Society Archive DM/1/5; Brown, 'How Not to Regain Paradise', p. 213.

¹³⁹ Ker to Lubbock, several letters probably 1830-33, Royal Society Lubbock Collection K 14 – 17.

¹⁴⁰ Brown, 'How Not to Regain Paradise', p. 212.

¹⁴¹ Hudson to Lubbock, 3 May 1832, Royal Society Lubbock Collection H 506.

¹⁴² Hudson to Lubbock, 5 May 1832, Royal Society Lubbock Collection H 507.

remained unpaid.¹⁴³ By the time of the November Anniversary meeting, however, the Treasurer was able to report that 'no arrears, of any kind, remained unpaid or due to the Society'.¹⁴⁴

2.5 The Royal Society's organisation of Science.

2.5.1 The Royal Society Library

The improvement of the Royal Society Library, under Lubbock's direction and close supervision, represented a major achievement of the Presidency of the Duke of Sussex. Two of South's *Thirty-Six Charges* had related to the state of the Library:

33. For having buried the Society's books in cellars pronounced by the geologists too damp even for the reception of flints.

36. For having an average income of 2,000*l.* a year, which they spend in mace gilding, picture cleaning and other frivolities, whilst they purchase not a single book to add to their imperfect library.

It is a fact which will be scarcely credited in other countries that the Library of the Royal Society does not contain a single copy of the *Annales de Chimie*!!!¹⁴⁵

On 14 May 1829, Gilbert's Council, responding to complaints concerning the inadequacy of the Society's Library, had appointed a Committee to look into the possibility of exchanging the Society's Arundel manuscripts for scientific books held by the British Museum.¹⁴⁶

Although negotiations for a valuation of the manuscripts were begun and there was discussion about whether the Museum would offer books in return, or a cash payment, little real progress was made. With the accession of the Duke of Sussex the Council took immediate action to move matters forward. On 20 January 1831, perhaps in response to

¹⁴³ Robertson to Lubbock, 6 May 1833, Royal Society Lubbock Collection R 302.

¹⁴⁴ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 244.

¹⁴⁵ South, *Thirty-Six Charges*.

¹⁴⁶ Hall, M.B., *The Library and Archive of the Royal Society 1600-1900* (The Royal Society: London, 1992), p. 23.

Babbage's suggestion that the manuscripts should be sold instead, it was agreed that a letter should be sent to all Fellows to explain the reasoning behind the proposed exchange.¹⁴⁷ Council member Henry Ellis, conveniently the Principal Librarian at the British Museum, was asked to supervise negotiations and on 7 July, 1831, the Council agreed to accept an offer of £956. 0s. 3d from the Museum Trustees.¹⁴⁸ The Council meeting of 3 November reviewed regulations for the Library and a committee, consisting of the Treasurer (Lubbock) and the two Secretaries (Roget and Children) was appointed for its management.¹⁴⁹ Lubbock had, by this stage, already been liaising with Librarian Hudson for several months regarding the selection books for purchase.¹⁵⁰ Hudson reported to Lubbock:

I am much occupied in executing all your instructions and suggestions. The books marked for purchase amount to about £600. I have resolved to make my first insurance at the Royal Exchange.¹⁵¹

Fellow astronomer, Thomas John Hussey wrote to Lubbock suggesting the purchase of some 'works . . . not to be wanting in a scientific library' and referring to Lubbock as 'you, who have taken the RS library under your protection'.¹⁵² With the Society's having a substantial sum to spend, booksellers were prepared to offer substantial discounts. It was decided that English books would be purchased from Messrs Simpkin and Marshall of Ave Maria Lane, at a discount of 25% and foreign books at a discount of 22% from Paris publisher and bookseller, Jean-Baptiste Baillière, who had opened a Regent Street branch that year.¹⁵³ At the Anniversary Meeting of November 1831, the Council was consequently able to report

¹⁴⁷ Minutes of the Council of the Royal Society, 20 January 1831, Royal Society Archive CMO/11; Babbage, *Reflections on the Decline of Science in England*, x.

¹⁴⁸ Minutes of the Council of the Royal Society, 7 July 1831, Royal Society Archive CMO/11.

¹⁴⁹ Hall, *The Library and Archive of the Royal Society*, p. 24; Minutes of the Council of the Royal Society, 8 December 1831, Royal Society Archive CMO/11.

¹⁵⁰ Hudson to Lubbock, 21 May 1831, Royal Society Lubbock Collection H 500.

¹⁵¹ Hudson to Lubbock, probably late 1831, Royal Society Lubbock Collection H 502.

¹⁵² Hussey to Lubbock, July(?) 31 and 12 November 1831, Royal Society Lubbock Collection H 552 and 553.

¹⁵³ Minutes of the Council of the Royal Society, 28 July and 11 August 1831, Royal Society Archive CMO/11.

that the Library had been 'enriched by a very large addition of works on scientific subjects.'¹⁵⁴ The Library was 'ordered to be open every day, Sundays excepted, from eleven o'clock in the morning till four in the afternoon' and new regulations 'calculated to facilitate the borrowing of books out of the library, and for ensuring their regular return' were introduced.¹⁵⁵ The Council had also ordered 'the accurate completion of its catalogue, a task for the proper execution of which considerable time and labour have been required, and which is now nearly completed'.¹⁵⁶ This was unfortunately far from correct.

The catalogue, begun in the previous decade and arranged alphabetically by author, was found to be completely inadequate and on 9 February 1832 the Council agreed that work should begin on a new 'systematic' or 'classed' catalogue.¹⁵⁷ To supervise this, the Library Committee (Lubbock, Roget, Children), together with four (later, on 12 June, increased to twelve) additional members formed a 'Committee for Superintending the Publication of the Catalogue of the Library'.¹⁵⁸ Ellis, from the British Museum, gave Lubbock detailed advice on how the system might be organised: 'A the press, b the shelf, 12 the book upon the shelf. The book mark upon or opposite to the title page standing A.b.12'.¹⁵⁹ (A press is a cupboard for books). There was difficulty in deciding on categories, however. 'I can see no objection to adding Geodesy to Astronomy etc,' Children wrote to Lubbock. 'Where do you propose to put general works on Nat. Phil and Nat. Hist?'¹⁶⁰ In May, Professor Rigaud, having looked through proof sheets for Lubbock found 'so much which seems to require correction'.¹⁶¹ In

¹⁵⁴ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 86.

¹⁵⁵ *Ibid.*

¹⁵⁶ *Ibid.*

¹⁵⁷ Hall, *The Library and Archive of the Royal Society*, p. 24.

¹⁵⁸ *Ibid.*, p. 25.

¹⁵⁹ Ellis to Lubbock, 13 March 1832, Royal Society Lubbock Collection E 80.

¹⁶⁰ Children to Lubbock, 21 September 1832, Royal Society Lubbock Collection C 155.

¹⁶¹ Rigaud to Lubbock, 20 May 1832, Royal Society Lubbock Collection R 74.

October he would write that he understood 'how much easier it is to find faults than to avoid them', this after four pages of detailed criticism.¹⁶²

While Hall, in her text on the Library's history, does discuss the creation of the catalogue, her focus was largely on the dispute between the Society and the British Museum librarian later engaged to undertake this: the flamboyant 'Prince of Librarians', Antonio Panizzi.¹⁶³ For D.L. Emblen this was a 'long and vituperative contest' and for Edward Miller, in similar vein, an 'acrimonious controversy' as Panizzi strove to rescue the Society from what the Librarian described as 'egregious blunders' in its first attempts at a classed catalogue and to secure just recompense for his work.¹⁶⁴ The significance of the Society's wanting to create such a catalogue at this time passes unremarked. Emblen stated that he had been unable to determine 'precisely who, in the Royal Society, was the unfortunate author of that first attempt' but his prime 'suspect' was Lubbock.¹⁶⁵ This is confirmed by Society correspondence which shows that Lubbock was assisted in this, in particular, by Baillièrè who was familiar with the 'French Scheme', also known as the 'scheme of the French Booksellers'.¹⁶⁶ Henry Ellis and another senior figure at the British museum, Henry Hervey Baber (FRS), who was Panizzi's superior, are also believed to have advised on the principles of classification.¹⁶⁷

¹⁶² Rigaud to Lubbock, 10 October 1832, Royal Society Lubbock Collection R 75.

¹⁶³ Hall, *The Library and Archives of the Royal Society*, pp. 25-28; Miller, E., *The Prince of Librarians: The Life and Times of Antonio Panizzi of the British Museum* (Athens. O: Ohio University Press, 1967), pp. 84-88.

¹⁶⁴ Emblen, D.L., 'Roget vs. Panizzi – A Collision', *Journal of Library History* 4 (1969), p. 9; Miller, *The Prince of Librarians*, p. 88.

¹⁶⁵ Emblen, 'Roget vs. Panizzi', p.13. Emblen also considers Baily to be a 'suspect' but correspondence shows it to have been Lubbock. Baily in this period was still estranged from the Society.

¹⁶⁶ Lubbock to Rigaud, 22 May 1832, Royal Society Archive MS/425/97; Berwick Sayers, W.C., *An Introduction to Library Classification* (London: Grafton, 1918), pp. 86-88.

¹⁶⁷ Hall, *The Library and Archives of the Royal Society*, pp. 24-25; McCrimmon, B., 'Whose Ninety-One Rules? A Revisionist View', *Journal of Library History* 18 (1983), pp. 164-170. McCrimmon suggest that Panizzi, who succeeded Baber as Keeper of Printed Books at the British Museum in 1837, based his classification rules on the earlier work of his predecessor.

The classes which were approved by the Council on 9 February 1832 are shown below. Lubbock's own subjects head the list although they were not the classes with the largest number of items (the largest was Anatomy, Physiology and Medicine).

- 1 Mathematics (Algebra, Geometry, Probability, etc)
- 2 Astronomy and Navigation
- 3 Mechanics, Hydrostatics, Hydraulics
- 4 Optics, Catoptrics, Dioptrics, Light, Colours
- 5 Chemistry, Pneumatics, Meteorology
- 6 Electricity, Galvanism, and Magnetism
- 7 Natural Philosophy (General works on)
- 8 Geology, Mineralogy, and Fossils
- 9 Botany
- 10 Zoology
- 11 Anatomy, Physiology and Medicine
- 12 Natural History (General works on)
- 13 Transactions
- 14 Journals
- 15 Voyages and Travels
- 16 Maps and Charts
- 17 Tables on various subjects

It is not clear in what sense Emblen considers Lubbock to have been the 'unfortunate author' but it should be noted that this 'first attempt', with very little modification, is what

would appear in the catalogue when it was finally printed.¹⁶⁸ At the time, as Lubbock pointed out to Oxford Professor of Astronomy Stephen Rigaud who had agreed to assist in revising the proof, there was ‘no good London library on these topics’, neither was any similar classed catalogue in use.¹⁶⁹ In 1809, in a period when most British institutions adopted a simple alphabetical sequence of author entries for their libraries, the Royal Institution had produced a classed catalogue for its own.¹⁷⁰ The Institution’s arrangement of classes, which is clearly based on Jacques-Charles Brunet’s ‘French System’ in which ‘Sciences’ were not separated from ‘the Arts’, was retained for the second edition of the catalogue, published in 1821.¹⁷¹ These catalogues, Jon Klancher believes, ‘depict the newly reshaped category of bibliography standing prominently among the major forms of emerging knowledge’.¹⁷² However, the distinguished librarian W.C. Berwick Sayers, many years ago rejected ‘claims of a philosophical basis’ for these schemes considering them to be ‘groupings which their makers [originally, the Paris booksellers] found practically convenient’.¹⁷³ The London institution used a simple alphabetical system from 1813 until 1835 when it produced the first ‘systematically classed’ catalogue for its 27,000 books.¹⁷⁴ The extensive library of the Athenaeum Club, renowned for the breadth and depth of its contents, was still using an alphabetical system for its catalogue of 1845.¹⁷⁵

¹⁶⁸ *A Catalogue of the Scientific Books in the Library of the Royal Society*, (London, 1839). Acoustics has been added to Mechanics, Agriculture to Botany and Reports of the House of Commons has replaced Maps and Charts. There is also a miscellaneous section.

¹⁶⁹ Lubbock to Rigaud, 22 May 1832, Royal Society Archive MS/425/97.

¹⁷⁰ *A Catalogue of the Library of the Royal Institution of Great Britain* (London, 1821), xiiv -xv.

¹⁷¹ Berwick Sayers, *An Introduction to Library Classification*, pp. 86-88. The Royal Institution classes are very similar to those suggested by Brunet. The topics in the institution’s Class III – Science and the Arts – are almost identical to those in Brunet’s Class C.

¹⁷² Klancher, J., *Transfiguring the Arts and Sciences* (Cambridge, Cambridge University press, 2013), p. 92.

¹⁷³ Berwick Sayers, *An Introduction to Library Classification*, pp. 86,89.

¹⁷⁴ *A Catalogue of the Library of the London Institution: Systematically Classed* (London, 1835).

¹⁷⁵ *A Catalogue of the Library of the Athenaeum*, (London, 1845); Thevoz, S.A., *Club Government: How the Early Victorian World was Ruled from London Clubs* (London, Tauris, 2018), p. 150.

Set against this background, Lubbock's scheme for the classification of scientific works is impressively novel, perhaps ground-breaking. In 1838, when the dust was beginning to settle on the 'Panizzi Affair', Lubbock set out the reasoning behind his classification in his *Remarks on the Classification of the Different Branches of Human Knowledge* in which he stated that 'the classification of human knowledge is intimately blended with the question of the classification of books'.¹⁷⁶ Lubbock reviewed classification systems going back to Bacon, but rather than abandoning Bacon's system, as he believed Dugald Stewart had done with his dissertation for the *Encyclopaedia Britannica Supplement*, he proposed 'to consider, particularly, what modification the system of Bacon requires . . . to render applicable, if possible, to the classification of books'.¹⁷⁷ The philosophical basis for Lubbock's Royal Society classed catalogue, and its importance in the classification of scientific knowledge, are deserving of further study.

During the summer of 1832 Lubbock continued to look for additional scientific books to purchase, receiving willing approval from the Secretaries, as demonstrated by Children's letter of 27 July:

I most cordially agree in your proposal to order the mathematical books you allude to from Dickson and I think the Society extremely indebted to you for taking so much trouble in its service. To whatever amount you think it right to go, be certain of my perfect acquiescence – and no doubt Roget's will be as readily given.¹⁷⁸

At the Anniversary Meeting in November the Council was able to inform Fellows that about £1600 had been spent in purchasing, 'with the advice of the Library Committee', books to make the Library 'as complete as possible in all those departments of science'.¹⁷⁹ It was also

¹⁷⁶ Lubbock, J.W., *Remarks on the Classification of the Different Branches of Human Knowledge* (London: Knight, 1838), p. 2.

¹⁷⁷ *Ibid.*, pp. 2-3; Stewart, D., *A General View of the Progress of Metaphysical, Ethical and Political Philosophy* (Edinburgh, 1821).

¹⁷⁸ Children to Lubbock, 27 July 1832, Royal Society Lubbock Collection C 137.

¹⁷⁹ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 155.

reported that, after much discussion about how the catalogue might be arranged, it had been decided 'that the whole labour. . . should be confided . . .to one person only', and that the Council 'had accordingly engaged Mr Panizzi of the British Museum to undertake this charge'. The aforementioned Panizzi would work 'under the superintendence of the Committee' who would give advice on the organisation of scientific books into categories. This would prove to be particularly necessary as Panizzi, notwithstanding his criticism of the Society's early attempts at classification, had no special knowledge of, or interest in science. Panizzi was soon asking Lubbock for guidance:

I beg to trouble you with a few questions as to the proper entry of some works under the heads fixed by the committee.

Books respecting the calendar, almanacs and chronological works cannot, I apprehend, come nearer any other head than Astronomy: am I right?

Works on gunnery or artillery or on the doctrine of projectiles are to be united, I suppose, under Mechanics. Am I to understand that under this class are to be arranged . . . works on the effects of powers or moving forces: for inst: works on Steam Engines?¹⁸⁰

There were numerous complaints from Panizzi to the Treasurer on matters as diverse as the poor quality and price of the stationer's pencils – '9d each, Mr Robertson bought some much better for 3d or 4d' – , not having a 'desk to write upon' and, frequently, the slowness of payment for work done.¹⁸¹ It was a huge task, there were 2600 titles on Anatomy alone.¹⁸² There was also the question of insurance: Panizzi recommended that for the books this should be for £7000. 'We have not taken MSS into consideration,' he informed Lubbock. 'That of Newton's Principia is invaluable . . . what sum of money would be a compensation for its loss?'¹⁸³ At the Anniversary Meeting of November 1834 the Council was

¹⁸⁰ Panizzi to Lubbock, 8 January 1833, Royal Society Lubbock Collection P 58.

¹⁸¹ Panizzi to Lubbock, four letters probably June to December 1833, Royal Society Lubbock Collection P 53, P54, P56, P 57.

¹⁸² Panizzi to Lubbock, 12 December 1833, Royal Society Lubbock Collection P 55.

¹⁸³ Ibid. and Panizzi to Lubbock, 1833, Royal Society Lubbock Collection P 56.

able to report that 'the manuscript of the classed catalogue is very nearly completed and that the printing of it will be very soon commenced'.¹⁸⁴ One year later it had yet to appear although it was 'in great forwardness and will soon be completed'.¹⁸⁵ Finally, in November 1836, the President was able to announce that 'the catalogue is now printed, or more correctly speaking, *composed*, and is undergoing . . . revision' before being 'placed in the hands of Fellows'.¹⁸⁶ The delays are believed to have been due to the repeated revision which Panizzi insisted upon. The Library, the President stated in 1836, was now 'singularly rich and complete in journals and works on mathematical, physical, astronomical and anatomical science'. In that same year, Granville, still critical of the Society, would have at least to concede that the period 1830 to 1835 had seen the 'total reform of the Library Department' which, before 1830, had been a 'disgrace to the Society'.¹⁸⁷ It may now be quoted,' he continued, 'as a rich and well-regulated deposit of every work likely to serve the purposes of science'. As has been demonstrated, this was due, in very large part, to the efforts of Lubbock.

2.5.2 Scientific Papers

One of the principal functions of the Royal Society in the nineteenth century was the reading of papers communicated to it and their subsequent publication in the *Philosophical Transactions*; both stages requiring some form of vetting procedure. Since 1752 a Committee of Papers, consisting of the Officers and Vice-Presidents as permanent members, but authorised to call on any member with relevant expertise, had been responsible for the selection of papers. The creation of this body was perhaps prompted by an evolution in the

¹⁸⁴ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 305.

¹⁸⁵ *Ibid.*, p. 349.

¹⁸⁶ *Ibid.*, p. 431.

¹⁸⁷ Granville, A.B., *The Royal Society in the XIXth Century* (London, 1836), p. 181.

communications to the Society which, as Dwight Atkinson shows, developed during the eighteenth century from simple narratives of experiments or observations in the form of letters to reports of experiments or observations in 'progressively more detail'.¹⁸⁸ By 1825, only about one quarter of communications were in the form of letters and, in marked contrast to earlier years, less than half were now on natural history.¹⁸⁹ Articles were longer, more specialist and concerned increasingly with methodology.¹⁹⁰ On 3 May, 1827, in the face of such growing complexity and in an attempt to improve the efficiency of the procedure for the reading and publication of papers, the Council approved new rules which the Secretaries had devised.¹⁹¹ The Sub Committee of Papers consisting of the President, the Secretaries and two members of the Council would make the relevant decisions. The Junior Secretary (Children) was to send a standard letter to the author of any rejected paper informing him of the committee's decision. He was also to prepare an abstract of any paper read which would then be submitted to the committee for a decision on publication.¹⁹²

While authors might consider submitting their papers to other Learned Societies such as the Geological or Astronomical, or even to the respected *Philosophical Magazine*, the strong preference was to have one's work read and published by the preeminent Royal Society, with its international reputation. The system continued to be highly inefficient and arbitrary, however, and the many deficiencies were highlighted in Granville's, (at the time anonymous) publication of November 1830: *Science without a Head*.¹⁹³ Principal amongst the complaints was that 'at many of these meetings, members of the Committee of Papers have been present who have not the slightest pretension to any knowledge whatever of the

¹⁸⁸ Atkinson, D., "' Philosophical Transactions of the Royal Society," 1675-1975: A Sociohistorical Discourse Analysis', *Language in Society* 25 (1996), p. 336.

¹⁸⁹ Ibid., pp. 341, 343.

¹⁹⁰ Ibid., pp. 343, 345.

¹⁹¹ Hall, *All Scientists Now*, p. 27.

¹⁹² Ibid.

¹⁹³ Granville, *Science without a Head*.

subject under consideration, or indeed to science in general'.¹⁹⁴ 'Could a committee, containing only one physiologist, have judged rightly in rejecting a paper . . . by one of the most industrious physiologists in England?'¹⁹⁵ A rejected paper would sometimes not be returned to the author; being instead 'deposited in the Archives'.¹⁹⁶ Babbage, in a rare positive comment, had 'praise for the extreme regularity with which the volumes of Transactions are published' (in contrast with the 'negligent' Institute of France) but he regretted that the Society made no other use of this 'means of giving considerable publicity . . . to whatever we wish to have made known'.¹⁹⁷ In his view 'not only the public, but our own members are almost entirely ignorant of all its affairs'.¹⁹⁸ 'The list of the Officers, Council and members of the Royal Society is printed annually but who ever saw it bound up with the Philosophical Transactions?', he asked.¹⁹⁹

Noah Moxham and Aileen Fyfe identify three 'episodes' during which the Society's editorial practice was 'formalised in response to criticism'.²⁰⁰ The first is the 'move away from sole editorship' with the 1752 committee and the third what they see as a change to the 'gatekeeping processes' at the end of the nineteenth century. Their second episode, in response to the criticisms of Granville and Babbage, is the use of expert referees which was 'formalised' in 1832, coupled in the same year with the creation of a new periodical, the *Proceedings of the Royal Society*.²⁰¹ Lubbock had a key role in both of these innovations.

At the Anniversary Meeting of November, 1832, the President himself chose to report at length on 'one arrangement admirably calculated, in my opinion, to increase the

¹⁹⁴ Ibid., p. 54.

¹⁹⁵ Ibid., p. 58.

¹⁹⁶ Ibid.

¹⁹⁷ Babbage, *Reflections on the Decline of Science*, pp. 190-192.

¹⁹⁸ Ibid. p.192.

¹⁹⁹ Ibid. p.193.

²⁰⁰ Moxham, N and Fyfe, A., 'The Royal Society and the Prehistory of Peer Review, 1665-1965', *The Historical Journal* 61 (2018), p. 4.

²⁰¹ Ibid., pp. 4, 15.

usefulness and uphold the credit of the Royal Society' This was 'the Resolution adopted by the Council to allow no paper to be printed in the Transactions of the Royal Society unless a written report of its fitness shall have been previously made by one or more members of the Council, to whom it shall have been especially referred for examination'.²⁰² Alex Csiszar, like Moxham and Fyfe, identifies this as the beginning of the formal process of scientific peer review and he focusses specifically on the Society's first such written report, by Whewell and Lubbock, on a paper by Airy.²⁰³ Csiszar considers the idea to have originated with William Whewell quoting a letter written by Whewell to Roget on 22 March 1831 in which he discusses it.²⁰⁴ However, earlier that month (12 March) Whewell had already written to Lubbock to suggest that it would 'give spirit and value to the proceedings if papers were referred to committees who should give written reports upon them'.²⁰⁵ What is significant here is that Whewell was not on the Council at the time and, in fact, in the same letter had explained, to Lubbock's disappointment, that he was declining the invitation to serve on the Charter Committee 'for want of time'. The idea was Whewell's, but it required someone of Lubbock's position and influence to bring it to fruition. Airy's paper 'On the Inequality of Long Period in the Motions of the Earth and Venus' was read on 24 November 1831 and the Whewell/Lubbock report on it was read on 29 March 1832.²⁰⁶ Granville recalled the event as follows: 'The expression of approbation which fell from all fellows present at the reading of the first report of this kind, though not public, was yet great and sincere, and with great pleasure did I witness it'.²⁰⁷ Both the original paper and the report were published by the Society.

²⁰² *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 141.

²⁰³ Csiszar, A., 'Peer Review: Troubled from the start,' *Nature* 532 No.7599 (2016), pp. 306-08.

²⁰⁴ *Ibid.*, p. 306.

²⁰⁵ Whewell to Lubbock, 12 March 1831, Royal Society Lubbock Collection W 256.

²⁰⁶ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, pp. 77, 108.

²⁰⁷ Granville, *The Royal Society in the XIXth Century*, p. 118.

Further reports on papers submitted by Faraday and by Lubbock, himself, were read on 5 April and 3 May respectively, and subsequently published.²⁰⁸ Following this, although rigorous written reports continued to be produced, only one (another report on a Faraday paper) was published, and this without being read.²⁰⁹ ‘Even this single measure of improvement’, Granville lamented, ‘calculated to give a greater tone of importance to our meetings, and add variety and interest to their proceedings, has now no existence’.²¹⁰ The practice of reading them was perhaps discontinued because the reports occupied the business of the whole meeting on each occasion. Nevertheless, they had demonstrated the Society’s commitment to ensuring that what they published was research of only the highest quality. The written reports, as Moxham and Fyfe note, ‘turned refereeing into a very visible part of the Society’s editorial practice’.²¹¹

From 1831, abstracts of all papers read were to be published in the *Abstracts of the Papers printed in the Philosophical Transactions*, also known as the *Proceedings of the Royal Society*, an innovation which Lubbock was responsible for introducing. In addition to providing authors with speedy recognition for their work, these had the effect, as Fyfe and Moxham point out, of ‘redoubling the link between meetings and papers’.²¹² Children, having been sent a specimen copy by Lubbock, commented to him: ‘these abstracts will form an invaluable key to the Phil. Trans. Science is much indebted to you for the suggestion to print them’.²¹³ This measure was, however, not as novel as might have perhaps have been supposed: the Royal Astronomical Society (of which Lubbock was at the time a Vice-President) had, since 1827, produced its *Monthly Notices* which contained *Abstracts of Papers and Reports of the Proceedings of the Society*. ‘Two Notes by Mr Lubbock on the

²⁰⁸ Ibid., pp. 113, 121.

²⁰⁹ Ibid., p. 191.

²¹⁰ Granville, *The Royal Society in the XIXth Century*, p. 121.

²¹¹ Moxham and Fyfe, ‘The Royal Society and the Prehistory of Peer Review, 1665-1965’ p. 13.

²¹² Fyfe, A. and Moxham, N., ‘Making Public ahead of Print: meetings and Publications at the Royal Society, 1752-1892’, *Notes and Records of the Royal Society of London* 70 (2016), p. 364.

²¹³ Children to Lubbock, 19 April 1832, Royal Society Lubbock collection C 126.

Comet of Halley' (January 1831), for example, had appeared as a two page abstract, including data but not Lubbock's explanation of 'mode by which these elements were computed', before being published in full in the Society's *Memoirs* at the end of the year.²¹⁴

The publishing of the abstracts had been suggested by Babbage in *Reflections*, but the *Proceedings* were also to contain reports of the weekly meetings, including a detailed account of the Anniversary Meeting incorporating the President's Address, together with the reports from the Council and the Treasurer.²¹⁵ Abstracts of papers read since 1800 were also to be printed and Fellows were informed that 'the price of this work to subscribers will be ten shillings' which would 'barely cover the expenses'.²¹⁶ Babbage, writing to Rigaud ahead of the Oxford British Association meeting (which Rigaud was helping to organise), reminded him to 'give publicity to the fact that the Royal Society intend, if they can get 200 subscribers at cost price . . . to print the abstracts of the papers read at their meetings since 1800'. 'Do not let them fail for want of support', he urged.²¹⁷ In the same letter Babbage also makes reference to the work on the 'classed catalogue'. Joe Bord suggests that Babbage, unusually silent on perceived Royal Society failings in this period, was encouraged by others to refrain from 'further polemical controversy' but it is clear that he was aware of the many significant changes being effected within it.²¹⁸

The *Proceedings* enabled scientific developments and also Society business to be communicated to Fellows, and to a wider public, both quickly and relatively inexpensively (although for publications as a whole, as Fyfe has shown, there was a considerable 'annual

²¹⁴ Lubbock, J.W., 'Two Notes by Mr Lubbock on the Comet of Halley', *Monthly Notices of the Royal Astronomical Society* 2 (1831), pp. 5-6; Lubbock, J.W., 'On the Orbit of the Comet of Halley', *Memoirs of the Royal Astronomical Society* 4 (1831), pp. 509-16.

²¹⁵ Babbage, *Reflections on the Decline of Science*, p. 197.

²¹⁶ Hudson to Lubbock, 25 April 1832, Royal Society Lubbock collection H 505.

²¹⁷ Babbage to Rigaud, 28 April 1832, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 138.

²¹⁸ Bord, J., *Science and Whig Manners. Science and Political Style in Britain, c.1790-1850* (Palgrave Macmillan, 2009), p. 67. Bord's suggestion is based on a letter from Brougham to Babbage of 1842 written in the 'aftermath of the bitter battle over the election of the Duke of Sussex'.

deficit' with 'production costs' considerably above 'sales income').²¹⁹ By 1833, 1500 copies were being sold.²²⁰ A few years later, Charles Lyell, writing to Herschel and still critical of the Society's 'too great a facility of admission', had to acknowledge that it 'continues to be a good and rapid publishing machine'.²²¹

2.5.3 Medals and Lectures

The Council elected in November, 1830, had the power to recognise achievement through 'honorary rewards'. Individual men of science might be chosen to receive one of the three different Royal Society medals (the Copley, the Rumford and the Royal) or they could be appointed to deliver one of two lectures for which remuneration was provided (the Bakerian and the Croonian). A third 'lecture', (the Fairchild), was actually a sermon, on a subject of natural knowledge, for which the preacher received a small payment. Criticism of the procedure regarding these awards was a common and notable feature of the 1830 publications of Babbage, South and Granville.²²² Regarding the award of medals, a principal criticism was that the Council failed to communicate to the Society and public the adjudication system and that it frequently ignored its own regulations anyway. Babbage complained about the 'indistinct manner' in which the Copley Medal might be awarded to an individual 'for his various papers' and he commended Faraday for apparently declining the proposed award of the medal in 1829 for work that had not, at that stage, been published or even communicated to the Society.²²³ Babbage correctly highlighted the irregularity which

²¹⁹ Fyfe, A., 'Journals, Learned Societies and Money: *Philosophical Transactions* ca 1750-1900', *Notes and Records of the Royal Society* 69 (2015), pp. 278-79, 281.

²²⁰ Moxham and Fyfe, 'The Royal Society and the Prehistory of Peer Review, 1665-1965', p.15.

²²¹ Lyell, C., *The Life, Letters and Journals of Sir Charles Lyell, Bart* vol. 1 (London: John Murray, 1881), p. 465.

²²² South, *Thirty-Six Charges*, Charges 13-16; Babbage, *Reflections on the Decline of Science*, pp. 115-29; Granville, *Science without a Head*, pp. 60-72.

²²³ Babbage, *Reflections on the Decline of Science*, pp. 127, 129.

had seen the first awards of the Royal Medal (in 1826) being made for work undertaken several years previously in contravention of the rule, drawn up by the Council earlier in that same year, requiring it to be 'completed . . . in the year preceding the day of their award'.²²⁴ 'The Council had taken no pains to make known, either to the Society or the public, the rules they had made for the adjudication of these medals', Babbage complained.²²⁵ (The Council increased the time period to five years for the 1829 and 1830 awards allowing them to be presented for work carried out from the middle of the decade). In fact, the Society had no medals to present anyway, with the recent death of George IV whose head was to appear on the obverse (although a cast had been produced), and of Sir Thomas Lawrence, the artist producing the design for the reverse who had 'died without leaving behind him even a sketch of his ideas respecting it'.²²⁶ South accused the Council of showing 'the most marked disrespect to our deceased sovereign' by presenting 'empty boxes in lieu of Royal Medals'.²²⁷

The lectures, although commanding relatively small fees, had become sinecures which were, Granville protested, 'unjustly limited to a very small number of individuals who are favourites at head-quarters'.²²⁸ This was especially evident with the Croonian and Fairchild Lectures which seemed to Babbage 'rather to have been regarded as a pension' for the individuals who 'monopolized' them.²²⁹ Indeed, Sir Everard Home had delivered the Croonian Lecture on eleven occasions between 1817 and 1829, and Rev John Joseph Ellis had, by 1830, preached the Fairchild sermon on Whit Tuesday at St. Leonard's, Shoreditch, for twenty-six years running.

²²⁴ Minutes of the Council of the Royal Society, 26 January 1826, as quoted in Babbage, *Reflections on the Decline of Science*, p. 117.

²²⁵ Babbage, *Reflections on the Decline of Science*, p. 121.

²²⁶ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 216.

²²⁷ South, *Thirty-Six Charges*, Charge 16.

²²⁸ Granville, *Science without a Head*, p. 72.

²²⁹ Babbage, *Reflections on the Decline of Science*, p. 139.

On 9 December, 1830, the new Council appointed a committee to 'consider the regulations, both written and practically followed, under which the honorary rewards of the Society have been awarded, and to report, to the President and Council, the fittest modes, according to their judgement, of conferring these rewards in future'. The committee consisted of Lubbock and the two Secretaries together with Gilbert, Faraday and Kater, and its report, signed by Lubbock, was read to the Council of 24 October, 1831.²³⁰ Six recommendations clarifying the regulations regarding the award of the Copley Medal were made and accepted including, in answer to Babbage's criticism, the requirements that it should be presented for 'philosophical research either published or communicated to the Society' and that 'the subject shall be specified'.²³¹ Perhaps the most significant of the Committee's new regulations was that 'no limitation shall exist as to . . . the particular country to which its author may belong'.²³² The implications of this will be discussed below.

Recipients of medals were to be chosen by the Council in November, proposals having been made at least three weeks previously. In accordance with this, Peacock proposed that the Copley Medal should be presented to 'Professor George Biddell Airy for his paper in the Cambridge Philosophical Transactions on the Achromatism of the Eye Pieces of Telescopes', and this was confirmed by ballot on 24 November.²³³ The Bakerian Lecture would be awarded to the author of a 'physical science paper in the hands of the Secretary at the beginning of the year' and would be chosen at the first meeting of the Committee of Papers. The Croonian and Fairchild Lectures, it was recommended, should be allowed to lapse and, after seeking advice from the Society's solicitor, C. Few, the Croonian lecture was allowed to do so. £3 would instead be paid annually to the 'poor of the parish in which

²³⁰ Minutes of the Council of the Royal Society, 9 December 1830 and 24 October 1831, CMO/11.

²³¹ Minutes of the Council of the Royal Society, 24 October 1831, Royal Society Archive CMO/11.

²³² *Ibid.*

²³³ Minutes of the Council of the Royal Society, 24 November 1831, Royal Society Archive CMO/11.

Somerset House is situate' (St Mary Le Strand).²³⁴ However, a similar arrangement, it was advised, would not be possible with the Fairchild and Rev Ellis resumed his annual address in 1833, continuing to the end of the decade.²³⁵

The Honorary Awards committee report read to the Council on 24 October 1831 recommended no changes to the regulations regarding the award of the Royal Medals and at this same meeting three potential candidates were proposed – Poisson (by Lubbock), Cuvier (by Children) and Berzelius (by Faraday). Although this never came to ballot and, in fact, no Royal Medals were awarded in 1831, or in the following year, the international flavour of the nominations is evident. Three weeks prior to this Lubbock had journeyed to Paris to attend a meeting of the Bureau des Longitudes chaired by his nomination for a medal: Siméon Denis Poisson.²³⁶ Lubbock, mention of whom first appears in les procès-verbaux (minutes) of the Bureau on 4 March 1829, would be in frequent correspondence with its members in the 1830s and would be mentioned in the minutes on thirty-two occasions.²³⁷ In December 1832 Babbage would describe Lubbock as 'Mr Lubbock whose reputation was known on the continent of Europe'.²³⁸ From 1831, and in marked contrast to the earlier years of the century, roughly half of the recipients of the Society's most prestigious medal, the Copley, would come from continental Europe.²³⁹ Yakup Bektas and

²³⁴ Minutes of the Council of the Royal Society, 3 November 1831, Royal Society Archive CMO/11.

²³⁵ Anniversary Meeting Treasurer's Reports 1835-36, *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, pp. 356-58, 447-449; Anniversary Meeting Treasurer's Reports 1837-39, *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive*, pp. 29-31, 106-08, 185-87.

²³⁶ Les procès-verbaux du Bureau des longitudes 5 October 1831, <http://bdl.ahp-numerique.fr> 'M. Lubbock qui assiste à la séance rend compte d'un travail qu'il a entrepris sur les marées' – Mr Lubbock, who was attending the session, reported on work he had undertaken on the tides.

²³⁷ Les procès-verbaux du Bureau des longitudes 2 March 1831 to 13 December 1837, <http://bdl.ahp-numerique.fr>

²³⁸ *The Times*, 21 December 1832.

²³⁹ Seven out of the fourteen recipients of the Copley between 1831 and 1840, for example, were not from Britain or Ireland: Poisson (France) 1832, Plana (Italy) 1834, Berzelius (Sweden) 1836, Becquerel (France) 1837, Gauss (Germany) 1838, Liebig (Germany) 1840, Sturm (France) 1840, Ohm (Germany) 1841. Of the twenty-seven awards made between 1800 and 1830, only two were made to men not from Britain or Ireland: Ørsted (Denmark) 1820 and Arago (France) 1825.

Maurice Crosland, in their study of the awarding of the Copley Medal, note the ‘more outward-looking approach’ from 1831 and suggest it might be connected with the ‘debates on the “decline” of science in England’.²⁴⁰ The present study, however, would suggest that it was the Honorary Rewards Committee’s chairman, Lubbock, who set the internationalist tone for the Royal Society, celebrating outstanding scientific work from all countries, as now enshrined in the Copley regulations.²⁴¹ Poisson, who received the award in 1832 for his ‘Nouvelle Theorie de l’Action Capillaire’, communicated his thanks for the ‘honor’ through Lubbock.²⁴² The Copley therefore became a premier international scientific award in this period, and remains so to this day; the Royal Medal would come to be awarded primarily to British or Irish men of science, as was the original intention (see below).

Roy MacLeod, in his detailed study of the origins and awarding of the Royal Medal, suggested that the decision not to award Royal Medals in 1831 and 1832 may have been an ‘act of diplomacy’ because the medals had been a ‘focus of controversy’ (see below) but a more likely reason would have been the continuing absence of a medal to present.²⁴³ In December 1831, David Brewster, one of the recipients for 1830, concluded a letter to Lubbock by stating that he was ‘anxious also to know what is the cause of the delay in warranting the Royal Medals that have been adjudged’. ‘I wrote to the Secretary many months ago upon this point but was never favoured with an answer’.²⁴⁴ It would be almost another complete year (November 1832) before sculptor, Francis Leggatt Chantrey, presented proofs of the Medal for the Council’s approval.²⁴⁵ (According to MacLeod, Chantrey had died in 1830 but it was the death of his subject, George IV, which had

²⁴⁰ Bektas, M.Y. and Crosland, M., ‘The Copley Medal: The Establishment of a Reward System in the Royal Society, 1731-1839’, *Notes and Records of the Royal Society of London* 46 (1992), pp. 60, 68.

²⁴¹ Minutes of the Council of the Royal Society, 24 October 1832, Royal Society Archive CMO/11

²⁴² Minutes of the Council of the Royal Society, 10 January 1833, Royal Society Archive CMO/11

²⁴³ MacLeod, R.M., ‘Of Medals and Men: A Reward System in Victorian Science’, *Notes and Records of the Royal Society of London* 26 (1971), p. 86.

²⁴⁴ Brewster to Lubbock, 11 December 1831, Royal Society Lubbock Collection B423.

²⁴⁵ Minutes of the Council of the Royal Society, 30 November 1832, Royal Society Archive CMO/11.

occasioned delay).²⁴⁶ A small change was made in the order of the words in the motto around the image of Newton on the reverse, such that it read ‘Regis Munificentia Arbitrio Societatis’ – the King’s Generosity at the Discretion of the Society – in summary of the medal’s origin and purpose.²⁴⁷

In December 1825, Home Secretary Robert Peel had communicated to the Royal Society George IV’s proposal to ‘found two gold medals of the value of 50 guineas each, to be awarded as honorary premiums, under the direction of the President and Council of the Royal Society’.²⁴⁸ In contrast to the existing honorary rewards, it would be for the Society to determine ‘the regulations which it may be convenient to establish with regard to the appropriation of the medals’. ‘The unfettered nature of the gift excited admiration’, Babbage stated.²⁴⁹ It was also the King’s wish that the awards should be made ‘in such a manner as shall, by the excitement of competition among men of science, seem best calculated to promote the object for which the Royal Society was instituted’.²⁵⁰ It was clear that the Society, through poor communication to the scientific community, was failing to achieve this. ‘In no part of the printed Records of the Royal Society does the noble and patriotic gift of the late King – the foundation of the two medals – of 50 guineas each – appear registered!’, Granville observed in 1830.²⁵¹ The rules for the award of the medals were, in Babbage’s view, ‘only known to the members of the Council and a few of their friends’.²⁵² In addition, the vagueness of the adjudication criteria – ‘awarded for the most important discoveries or

²⁴⁶ MacLeod, ‘Of Medals and Men’, p. 86.

²⁴⁷ Minutes of the Council of the Royal Society, 1 December 1832, Royal Society Archive CMO/11.

²⁴⁸ Peel to Davy, 3 December 1825, as quoted in Babbage, *Reflections on the Decline of Science*, p. 115.

²⁴⁹ Babbage, *Reflections on the Decline of Science*, p. 116.

²⁵⁰ Ibid.

²⁵¹ Granville, *Science without a Head*, p. 68.

²⁵² Babbage, *Reflections on the Decline of Science*, p. 123.

series of investigations' – made for difficulty in assessing the relative merits of work in different disciplines.²⁵³

On 1 December, 1832, with the prospect of there being real medals to present in 1833, the Honorary Awards Committee was reappointed, now to be called the Medal Committee, to consider the revision of existing regulations.²⁵⁴ Supplemented by four additional members in Baily, Beaufort, Christie and Peacock, the committee's first report was read to the Council on 13 December. On 31 January 1833, the Council approved the adoption of its five recommendations, the first of these being the most significant:

Resolved 1. that the Royal medal shall be awarded by the Council to the author of the most important discovery or series of investigations on any one subject or branch of Knowledge which shall have been established or completed to the satisfaction of the Council within three years prior to the first day of May in the current year.

In addition to extending the time period to three years (from one), the new regulation took into consideration for the first time, branches of knowledge. The Council minutes of 28 March 1833 reveal that it had been decided that, for the purposes of adjudicating the award of medals, these would be: 'Astronomy; Chemistry; Geology and Mineralogy; Mathematics; Physics; Physiology, including the Natural History of Organised Beings'.²⁵⁵ MacLeod listed the branches, but without comment.²⁵⁶ That Astronomy, Mathematics and Physics should have the status of separate branches perhaps reflects the interests of the members of the Medal Committee at the time, not least those of the chairman, John William Lubbock. It contrasts with the divisions which the British Association would settle on, at their third meeting in Cambridge three months later, which placed all three of these disciplines in Section I (of six)

²⁵³ Minutes of the Council of the Royal Society, 26 January 1826, as quoted in Babbage, *Reflections on the Decline of Science*, p. 117.

²⁵⁴ Minutes of the Council of the Royal Society, 1 December 1832, Royal Society Archive CMO/11.

²⁵⁵ Minutes of the Council of the Royal Society, 28 March 1833, Royal Society Archive CMO/11.

²⁵⁶ MacLeod, 'Of Medals and Men', p. 87.

– Mathematics and General Physics.²⁵⁷ The Council drew lots to determine the order in which work in the six branches of scientific knowledge would be rewarded: in 1833 medals would be awarded in Astronomy and Physiology; in 1834 for Geology and Physics; in 1835 for Chemistry and Mathematics.²⁵⁸ The cycle would then repeat beginning with awards for Astronomy and Physiology in 1836.²⁵⁹

On 25 March, 1833, William IV's Private Secretary, Sir Herbert Taylor, wrote to the Duke of Sussex regarding the 'two gold medals which his Majesty has been pleased to grant to the Society' and communicating the King's wishes concerning the regulations for the award.²⁶⁰ The letter was read to the Council on 28 March by the Duke himself, making only his second appearance at a Council meeting that year. (He attended only five out of eighteen meetings in 1832/33). For the most part, these regulations are broadly the same as the recommendations of the Medal Committee of 31 January 1833, and on which they are clearly based. However, the second requirement was to be 'that the subject matter of enquiry shall be previously settled and propounded by the Council of the Royal Society, three years preceding the day of such award'. There is nothing similar in the Medal Committee's recommendations. It may be supposed that this measure was designed to foster 'the excitement of competition' referred to in Peel's letter over seven years previously and it originated outside the Council, apparently with the King but, most probably, on the advice of Sussex. MacLeod was incorrect, therefore, in believing these 'new regulations' to be the Council's: they were the King's.²⁶¹

²⁵⁷ *Report of the Third Meeting of the British Association for the Advancement of Science* (London: John Murray, 1834), xxxix.

²⁵⁸ Minutes of the Council of the Royal Society, 28 March 1833, Royal Society Archive CMO/11.

²⁵⁹ Minutes of the Council of the Royal Society, 13 May 1833, Royal Society Archive CMO/11.

²⁶⁰ Sir Herbert Taylor to the Duke of Sussex, 25 March 1833, as recorded in the Minutes of the Council of the Royal Society, 28 March 1833, Royal Society Archive CMO/11.

²⁶¹ MacLeod, 'Of Medals and Men', p. 87.

Yakup Bektas and Maurice Crosland describe how the French Academy helped to establish a 'tradition of prize questions' during the eighteenth century, usually questions of 'practical importance' to the French government.²⁶² By the time of the William IV's intervention in the award of his own medal, however, prize questions were on the decline in France as the idea of 'open prizes spread'.²⁶³ Ironically, this may have been due to the influence of the '*laissez-faire* approach' adopted by the Royal Society with its awards, this having found favour with French men of science.²⁶⁴ To decide on Royal Medal recipients for 1833, two committees were appointed each with seven members drawn from the respective disciplines – Astronomy and Physiology.²⁶⁵ In fulfilment of the King's wishes, the committees were also asked to propose a 'Prize Question in the same branch of science' for the 1836 awards. The 'Royal Medal Committee in Astronomy' consisted of Lubbock (chair) and six other senior figures from Astronomy and Mathematics: Airy, Baily, Peacock, Rigaud, Sheepshanks and Whewell.²⁶⁶ Its first meeting (with Lubbock, Baily, Peacock and Whewell present) discussed the subjects 'from which a Prize Question for the next Medal might be taken' – determination of lunar inequalities, maps of the moon, derivation oscillations in relation to the tide – but the committee's lack of enthusiasm for this is evident from the request that members should give their opinion 'more especially on the propriety of proposing any question at all'.²⁶⁷ On 18 April Lubbock reported to the Council that the committee's recommendation was that the medal should be awarded to Herschel for his paper 'On the investigation of the Orbits of Revolving Double Stars'.²⁶⁸ However, he stated that the Committee 'regret their inability to propose any Prize Question for the Royal Medal

²⁶² Bektas, M.Y. and Crosland, M., 'The Copley Medal: The Establishment of a Reward System in the Royal Society, 1731-1839', *Notes and Records of the Royal Society of London* 46 (1992), pp. 43-44.

²⁶³ *Ibid.*, p. 44.

²⁶⁴ *Ibid.*

²⁶⁵ Minutes of the Council of the Royal Society, 28 March 1833, Royal Society Archive CMO/11.

²⁶⁶ *Ibid.*

²⁶⁷ Royal Medal Committee in Astronomy, 3 April 1833, Royal Society Archive CMB/42/2/2.

²⁶⁸ Minutes of the Council of the Royal Society, 18 April 1833, Royal Society Archive CMO/11.

since, in their opinion, that honour ought to be bestowed only on work of originality and of the highest order'. The Royal Medal Committee (Physiology), comprising four surgeons, two physicians and a botanist, recommended the award of a medal to 'Professor A.R. de Candolle' for 'his discoveries and investigations in vegetable physiology as detailed in his work entitled *Physiologie Vegetale*'.²⁶⁹ Unlike the astronomers, they were able to propose a Prize Question for 1836: 'To determine the laws by which the functions of the different organs belonging to the animal system are associated with each other'. However, in the absence of a Prize Question for Astronomy, the Council resolved that the 1836 Royal Medals in both Astronomy and Physiology should be awarded for 'the most important unpublished paper communicated to the Royal Society for insertion in their Transactions after the present date and before the month of June in the year 1836'.²⁷⁰

In 1834, the Royal Medal in Physics was awarded to Lubbock for his work on the Tides; Lubbock's membership of the adjudicating committee does not seem to have been considered a problem and regulations permitted a member of the Council to receive this award (this was not the case for the Copley Medal).²⁷¹ The Royal Medal Committee (Physics), like the previous year's Astronomy Committee with which it had four members in common, was 'unable to propose any specific Prize Question for the Royal Medal in Physics for the year 1837'.²⁷² The Royal Medal Committee (Geology and Mineralogy), which included the then current Geological Society President, George Greenough, recommended Charles Lyell for the 1834 award and proposed that the medal for 1837 should be 'given to the author of the best paper to be entitled, Contributions towards a System of Geological Chronology founded on an Examination of Fossil Remains and their attendant Phenomena'.²⁷³

²⁶⁹ Minutes of the Council of the Royal Society, 9 May 1833, Royal Society Archive CMO/11.

²⁷⁰ Minutes of the Council of the Royal Society, 13 May 1833, Royal Society Archive CMO/11.

²⁷¹ Minutes of the Council of the Royal Society, 27 November 1834, Royal Society Archive CMO/11.

²⁷² Ibid.

²⁷³ Minutes of the Council of the Royal Society, 1 December 1834, Royal Society Archive CMO/11.

Although the Council meeting of 1 December 1834 confirmed the Geology Prize Question for 1837, no suitable papers were received and the Royal Medal for Geology was not awarded in that year. No Prize Questions were proposed in 1835 for the 1838 medals, or in subsequent years. The idea of a Prize Question, having appeared in puzzling circumstances, was thus abandoned; it was never to the liking of Lubbock and the other astronomers and mathematicians. 'The Royal Medal . . . should be given as an honourable mark of distinction for the most eminent advances made in that science', Lubbock reported to the Council on behalf of the Astronomy Committee, ' . . . but they conceive that the Council cannot have any reasonable hope of attaining this object if the subject is to be previously stated and defined'.²⁷⁴ The Physiologists and Geologists, however, made meaningful attempts at identifying research goals, (which remain of interest in themselves), but it was the view of Lubbock and the astronomer/mathematicians which prevailed..

By the beginning of 1834, the Council had addressed the criticisms regarding its honorary rewards and had instituted a transparent system which had been communicated to the Society and public through the *Proceedings* and *Philosophical Transactions*. At the Anniversary meeting of November, 1833, the Duke of Sussex, in his Presidential Address, spoke at length on the subject of honorary rewards.²⁷⁵ Reflecting on the 'diversity of opinion . . . respecting the advantages which are likely to be conferred upon science by the frequent distribution of medals', he expressed the opinion 'that it may greatly promote the taste for scientific pursuits in this country, by presenting a more immediate prospect than would otherwise exist, of a public and distinguished recognition of any valuable discovery'.²⁷⁶ 'There were many circumstances in the constitution of society in England', he continued, perhaps in a nod to Babbage's views on the country's failure to promote scientific enquiry, ' . . . which

²⁷⁴ Minutes of the Council of the Royal Society, 18 April 1833, Royal Society Archive CMO/11.

²⁷⁵ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837* inclusive, pp. 215-24.

²⁷⁶ *Ibid.* p. 218.

were unfavourable to the cultivation of Science as a distinct and, as it were, a Professional employment'.²⁷⁷ The Duke was able to 'distribute the Ten Royal Medals which have already been adjudged during the lifetime of His late Majesty', these having finally been produced, and also, having first explained the new regulations to the meeting, the first two Royal Medals 'upon the foundation of His present Majesty'.²⁷⁸

Granville commented, in 1836, that 'the reforms introduced into this department of honorary rewards, were well and properly intimated by the Royal President, in his anniversary address of 1833'.²⁷⁹ 'We find, from the results of the Council's deliberations on this point', he added, 'that several judicious and proper measures were adopted with regard to the awards of the various medals and the disposal of the Croonian, Bakerian and Fairchild lectures'. Regarding the award of the Royal Medals, Granville commented: 'it is impossible not to be struck with . . . the sound judgement, marked impartiality and apt discrimination by which the distribution has hitherto been effected'.²⁸⁰ He was concerned, however, about 'the adjudication of several and different medals to the same individual, and for the same individual subject of merit – as has been the case for example, with regard to Sir David Brewster who in 1815 received the Copley Medal, in 1818 the Rumford Medal, and in 1830 the Royal Medal, for his Researches on the Polarization of Light'.²⁸¹ In this period, Brewster relied on his scientific writing, particularly popular science, to provide him with an income and he would have been a grateful recipient of further rewards²⁸². In 1831 he wrote to

²⁷⁷ Ibid; Babbage, *Reflections on the Decline of Science*, pp. 9-39.

²⁷⁸ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837* inclusive, pp. 219-224.

²⁷⁹ Granville., *The Royal Society in the XIXth Century*, p. 142.

²⁸⁰ Ibid., p. 146.

²⁸¹ Ibid., p. 151.

²⁸² Morrison-Low, A.D., 'Brewster, Sir David (1781-1868)', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/3371>

Lubbock to enquire ‘whether or not it is a fixed rule of the Society that their scientific prizes cannot be adjudged more than once to the same individual’.²⁸³

Sir David was never awarded the same medal on more than one occasion. Herschel and Faraday, however, each received both the Copley Medal and the Royal medal twice. Faraday, who also received the Rumford Medal and delivered the Bakerian Lecture on five occasions, has the distinction of having received the highest number of Royal Society accolades in this or any age. Making significant advances in his ‘Experimental Researches in Electricity’, he was awarded three medals between 1832 and 1838.

Of humble origins, Faraday was not of independent means and the financial benefit to him of the award of a medal can be gauged by considering his income in this period. His Royal Institution salary was ‘100L per annum, house, coals and candles’.²⁸⁴ In addition, he would receive £8.15s for each lecture he might deliver.²⁸⁵ In 1829, he agreed to become a lecturer to the ‘gentlemen cadets’ at the Royal Military Academy, Woolwich, undertaking to deliver twenty lectures for £200, including ‘preparatory labour’.²⁸⁶ He retained this position until 1852.²⁸⁷ Early in 1833, John Fuller founded a Professorship of Chemistry at the Royal institution, the ‘Fullerian’, with a salary of £100 a year, to which Faraday was appointed for life.²⁸⁸ At the time of receiving his first Royal Medal, in 1835, Faraday’s total income, therefore, was perhaps £500 per annum; the medal’s value of 50 guineas thus representing a substantial addition to this.²⁸⁹ To facilitate the realisation of cash, the Royal and Rumford

²⁸³ Brewster to Lubbock, 11 December 1831, Royal Society Lubbock Collection B423.

²⁸⁴ Jones, B., *The Life and Letters of Faraday*, vol. 2 (London: Longmans, 1870), p. 50.

²⁸⁵ Jones, B., *The Life and Letters of Faraday*, vol. 1 (London: Longmans, 1870), p. 366.

²⁸⁶ Faraday to Colonel Drummond, June 29 1829, as quoted in Jones, *The Life and Letters of Faraday* vol. 1, pp. 366-367.

²⁸⁷ James, F.A.J.L., ‘Faraday, Michael (1791-1867)’, *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/9153>

²⁸⁸ Jones, *The Life and Letters of Faraday* vol 2, p. 50.

²⁸⁹ James, F.A.J.L., *Michael Faraday: A Very Short Introduction* (Oxford: Oxford University Press, 2010), pp. 5, 51, 96-97. The figure of £500 for 1835 agrees with the breakdown of Faraday’s annual income (1815-1867) which Frank James presents graphically. As this demonstrates, from 1836, with

Medal awards consisted, as Granville noted, 'of a silver and gold medal struck in the same die'.²⁹⁰ The recipient could therefore 'convert the more precious medal into money, while he preserved the silver one in commemoration of his success'. That Faraday received both in 1835 is confirmed by Francis Baily's letter of 28 December stating that he had left with the Messenger at the Royal Institution 'the two boxes which contain the Royal medals'.²⁹¹

MacLeod suggested that 'some men of science found the whole business [of awarding medals] distasteful', quoting, in evidence of this, part of Faraday's 1843 letter to Thomas Andrews. in which he stated that 'I have always felt that there is something degrading in offering rewards for intellectual exertion'.²⁹² However, Faraday's letter went on to say:

Still I think reward & Honours *good* if properly distributed but they should be given for what a man has done & not offered for what he is to do . . . When a man is rewarded for his deserts he honours those who grant the reward & they give it not as a moving impulse to him but to all those who by the reward are led to look to that man for an example.

The context of the letter (which Macleod does not give) is important too: it was written in response to Andrews' soliciting advice on how he might improve his chances of being awarded the Royal Medal for Chemistry. This he went on to receive the following year (1844). The exchange provides a valuable contemporary example of the views of two men of science, one eminent, one aspiring, on the importance of the Royal Medals.

the addition of a pension from the Civil List and a salary for acting as scientific adviser to Trinity House, Faraday's annual income never fell below £800.

²⁹⁰ Granville, *Science without a Head*, p. 60.

²⁹¹ Baily to Faraday, 28 December 1835, Michael Faraday Collection 0867 https://epsilon.ac.uk/view/faraday/letters/Faraday_0867. Baily had just succeeded Lubbock as Treasurer of the Royal Society.

²⁹² Faraday to Andrews, 2 February 1843, Michael Faraday Collection 1443 https://epsilon.ac.uk/view/faraday/letters/Faraday_1443

2.6 Concluding remarks

There are two main conclusions which emerge from this detailed study of the Royal Society in the early years of the 1830s. Each challenges some existing interpretations. Firstly, it has been demonstrated that a significant degree of reform took place in these years. Macleod ascribes the Society's acquisition of an image of 'philosophical integrity' and of 'efficient administration' to a 'period of adjustment' between 1836 and 1849.²⁹³ Much, however, was achieved in the first years of the presidency of the Duke of Sussex: Councils composed of scientific men; vastly improved financial administration: a Library fit for purpose and organised according to a classed system; efficient procedures for the reading, reviewing and publishing of papers; a new structure for rewards. Secondly, much of what was achieved was due to the vision and determination of John William Lubbock who was much more than a 'zealous and efficient officer' (Hall), more than a 'reconciler' (Miller).²⁹⁴ In his Presidential Address of November, 1832, the Duke of Sussex thanked Treasurer Lubbock for 'his vigilant attention to the finances of the Society, and to every arrangement which may in any manner tend to promote the usefulness of the Institution, and increase the accommodation of its members'.²⁹⁵ The reform and improvement which Lubbock initiated and oversaw, together with his involvement in the minutiae of day-to-day Society affairs, turned the institution into one which, while remaining essentially unchanged, was quickly able to rehabilitate all but the most extreme reformers. As Peacock remarked in a letter to Lubbock of February 1833: 'You are placed in a most important position in the Royal Society where you are able both by your example and by your encouragement to do great service to the cause of science'.²⁹⁶

²⁹³ Macleod, 'Whigs and Savants', p. 58.

²⁹⁴ Hall, *All Scientists Now* p. 64; Miller, 'The Royal Society of London, 1800-1835', p. 393.

²⁹⁵ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 141.

²⁹⁶ Peacock to Lubbock, 13 February 1833, Royal Society Lubbock Collection P 100.

Chapter 3. The Election for the Representation of the University of Cambridge

3.1 Introduction

The History of Parliament: the House of Commons 1820 – 1832 devotes just one sentence to the University of Cambridge Election of December 1832. It explains that two Tories were elected unopposed when ‘an attempt to put up a reformer collapsed’.¹ The reader is forgiven for assuming the event to be of little significance and, indeed, historians of science have almost completely ignored it. However, for 10 hectic days at the end of that year, through national and local newspapers, the country was engrossed in the prospective contest. The Reform candidate was 29-year-old John William Lubbock who had been induced to stand by some of the most senior and respected men of science of the time. This General Election, the first following the passing of the Great Reform Act, was held almost exactly two years after Lubbock had become Treasurer and Vice-President of the Royal Society. Extensive correspondence relating to the unfolding events, together with reports and commentary in the press, day-by-day, provide a unique insight into Lubbock’s character and his position within the intellectual world. In this chapter these primary sources will provide a means of assessing Lubbock’s standing within the scientific community at a particular moment in time in a way that has rarely, if ever, been possible for a man of science. In addition, this contemporary material will be used to improve our understanding of the important religious and political issues at play and to gauge public awareness of and attitudes to science at the time. The chapter begins by considering the peculiarities of a University of Cambridge

¹ Fisher, D. R. , ‘Cambridge University’, *The History of Parliament: the House of Commons*, www.historyofparliamentonline.org/volume/1820-1832/comstituencies/cambridge-university

election and the background to that of December 1832 before going on to examine the circumstances of this election in greater detail.

3.2 Background to the election of 1832

The Cambridge University constituency was created by Royal Charter in 1603 with two representative Members of Parliament and an electorate which consisted of members of the Senate – graduates of the University with a Doctorate or Master of Arts degree.² In the early nineteenth century, about one in five of Senate members was resident, having a position within the University which might be academic, administrative or ecclesiastical. The majority, therefore, were non-resident, entitled to vote if they travelled to Cambridge. Charles Babbage devoted chapter XXI of his memoirs to an entertaining and informative reminiscence about his involvement in University elections at this time.³ The election was a complex process which would begin with a group of senior members of the Senate requisitioning a candidate. Following the candidate's acceptance, two committees, one in Cambridge and the other in London, would be formed to oversee the canvassing process. The Cambridge committee would canvass the residents while, in a much more intricate operation, the London committee would contact non-residents across the country and, if needed, provide transport to the poll and accommodation. If a non-resident was unable to vote the committee would try to arrange for him to 'pair' with a supporter of the opposition in similar circumstances (i.e., agree that neither would vote).

In 1830, the University's two Representatives, both Whigs, were Henry Temple (Viscount Palmerston) and the twenty-two-year-old William Cavendish FRS (Lord Cavendish of Keighley, future Earl of Burlington and 7th Duke of Devonshire), who had achieved success

² Ibid.

³ Babbage, C., *Passages from the Life of a Philosopher* (London: Longman, 1864), pp. 259-75.

in the by-election of 1829.⁴ In the election of July 1830, they were both re-elected unopposed, the essentially Tory-inclined electorate happy to stick with Palmerston, their MP for the past 20 years (in spite of his having switched from Tory to Whig in 1826), and the young Whig, Cavendish, with his impeccable aristocratic and academic credentials (in 1829 he had graduated as second Wrangler). Already in 1830, however, Cavendish had grave misgivings about his future in the constituency: 'I should be very glad for my own part to have nothing to say at Cambridge any more, for they are all venomous Tories, I believe, and if I get in this time, I do not think I should be able to keep it ever again', he had told his wife.⁵

As Jonathan Clark notes, Parliamentary reform was 'not the dominant issue' in the 1830 General Election which, under constitutional arrangements in operation at the time, was consequent upon the death, in June, of George IV.⁶ However, with Earl Grey's being able, somewhat unexpectedly, to form a Whig government in the November, there emerged proposals for parliamentary reform of an extensive nature and the political climate changed significantly.⁷ While none of the changes would affect the University constituency itself, changes to the franchise elsewhere would greatly facilitate the election of a government committed to Church reform and the lessening of Anglican privilege. On the back of the removal of Dissenter disabilities (1828) and Catholic emancipation (1829) the Senate electorate, approximately two-thirds of whom were members of the Clergy, felt under threat.

'Was reform the culmination of a reformist tradition, or the product of short-term contingencies?', Clark asks in discussing its origins.⁸ He concludes that 'the evidence does not

⁴ Clarke, J.W. and Hughes, T.M., *The Life and letters of the Reverend Adam Sedgwick* (Cambridge: Cambridge University Press, 1890), pp. 341-49.

⁵ 5 July 1831 as quoted in Fisher, D.R., 'Cavendish, William (1808-1891)', *The History of Parliament: the House of Commons 1820 – 1832*,

www.historyofparliamentonline.org/volume/1820-1832/member/cavendish-william-1808-1891

⁶ Clark, J.C.D., *From Restoration to Reform* (London: Vintage, 2014), p. 274.

⁷ *Ibid.*, p. 277.

⁸ *Ibid.*, p. 278.

support the idea that there was a pent-up demand for the franchise over the long eighteenth century that was triumphantly achieved with the passing of the Act'.⁹ Most historians would seem to be in agreement with this and with Thomas Ertman's assessment that the reform of 1832 was 'set in motion by a movement to extend the rights of religious minorities, [leading to the Acts of 1828 and 1829], but soon took on a dynamic of its own and led, quite unexpectedly, to a fundamental break in the constitutional order of the United Kingdom'.¹⁰

Within the reform episode, it was, as Toke Aidt points out, the election of April-June 1831, the last to be held under the rules of the unreformed parliament, which was crucial to the advance of reform since it was 'effectively a referendum' on the Bill which had received its second reading, by a margin of just one vote, in March.¹¹ Aidt has studied the influences both on the MPs who gave the second reading and on the voters who returned Grey's reforming ministry to government in the subsequent election.¹² He finds that 'peaceful protest and reform related petitions' exerted a powerful influence on MPs convincing them, in increasing numbers which included moderate conservatives, that the movement for reform was unstoppable.¹³ In addition, those voters who had first-hand experience of the violent unrest in rural areas – the so-called Swing Riots which began in the (then) village of Sevenoaks, Kent, in August 1830 and spread rapidly throughout southern England – were induced to vote for pro-reform candidates in the general election.¹⁴ There were 'Swing' disturbances in parts of Cambridgeshire in November and December 1830 and in the 1831 election the County's sitting MPs, already with liberal inclinations, were re-elected

⁹ Ibid., p. 283.

¹⁰ Ertman, T., 'The Great Reform Act of 1832 and British Democratization', *Comparative Political Studies* 43 (2010), p. 1000.

¹¹ Aidt, T.S., 'Democratization under the Threat of Revolution: Evidence from the Great Reform Act of 1832', *Econometrica* 83 (2015), p. 506.

¹² Ibid.; Aidt, T.S., 'What Motivates an Oligarchic Elite to Democratize? Evidence from the Roll Call Vote on the Great Reform Act of 1832', *Journal of Economic History* 79 (2019), pp. 773-825.

¹³ Aidt, 'What Motivates an Oligarchic Elite to Democratize?', p. 773.

¹⁴ Aidt, 'Democratization under the Threat of Revolution', p. 505.

unopposed promising to support the Reform Bill.¹⁵ In the election of 1831 the University would find itself out of step with the County and most of the rest of the country.

The reform episode, Ertman suggests, was a 'critical juncture' which brought into being a 'two-party system built around religious cleavages': Tories would identify themselves as the 'staunchest defenders' of the established church from whose members they would subsequently draw 'between 2.5 and 4 times more electoral support' than their Liberal opponents.¹⁶ In this period of the nineteenth century, a more-liberal interpretation of doctrine had allowed the Anglican church to accommodate a wide range of opinion. Amongst the great majority of Anglicans who were part of the latitudinarian 'Broad Church', (rather than the 'High Church' or 'Evangelical' factions), were to be found many of the University's scientific churchmen: John Stevens Henslow, George Peacock, Adam Sedgwick, William Whewell and others.¹⁷ With the Church hierarchy by now being, as Robert Saunders has shown, almost unanimously opposed to reform, these men of science found themselves having to make difficult choices concerning their political position.¹⁸ Some, like Henslow and Sedgwick, would remain actively committed to reform; others who had previously endorsed reform, particularly those anxious for advancement within the Church or University (such as Peacock and Whewell), could now, Saunders suggests, re-establish their 'claims to orthodoxy' by opposing it.¹⁹

Against this backdrop, the University of Cambridge election was held in May 1831 and with the electorate feeling threatened by change, particularly in relation to reform of the

¹⁵ Fisher, D. R., 'Cambridgeshire', *The History of Parliament: the House of* www.historyofparliamentonline.org/volume/1820-1832/comstituencies/cambridgeshire

¹⁶ Ertman, 'The Great Reform Act of 1832', pp. 1000, 1010.

¹⁷ Hilton, B., *A Mad, Bad and Dangerous People? England 1783-1846* (Oxford: Oxford University Press, 2006), p. 182

¹⁸ Saunders, R., 'God and the Great Reform Act: Preaching against Reform, 1831-32', *Journal of British Studies* 53 (2014), pp. 386, 389. In October 1831, when the bill was rejected by the Lords, bishops voted twenty-two to two against it.

¹⁹ *Ibid.*, p. 386.

Church, Palmerston and Cavendish were comfortably beaten by two strong Tory candidates, Henry Goulburn (former Chancellor of the Exchequer) and William Yates Peel (younger brother of Sir Robert). ‘Cambridge has done herself immortal honour’, the Tory-supporting Sunday newspaper *John Bull* declared, through its having determined to ‘discard those whom they had before elected and to throw themselves into the hands of two firm friends of the Constitution’.²⁰ *The Satirist*, a strong critic of Tory politics, provided an analysis using the Poll Book for the constituency which recorded the votes of each Senate member. ‘Let us examine the Poll Book’, it stated, ‘and see in what proportion the Reverend Gentlemen stood to the Laity who voted for the respective candidates’:

	Clergy	Laity	Total
Goulburn	570	236	806
Peel	573	232	805
Cavendish	323	307	630
Palmerston	309	301	610

Table 3.1 Voting record in the 1831 election

The Satirist calculated there to be ‘a majority of nearly two to one amongst the Clergymen against the measure’. ‘Will no argument convince them of the extreme folly of thus resisting the united and powerful wishers of the people?’, it asked.²¹ The Poll Book also reveals that there were only 51 ‘plumpers’ (those giving a single vote to one candidate only) amongst the 1,450 who voted; the vast majority, 1,399, cast votes for two candidates, as permitted. The extent of change in the political climate and the new division along what had become party lines is evident from the very small number splitting their vote between pro and anti-reform candidates – just 21, the vast majority voted ‘straight’.²² In addition, barely half of those Senate members who had voted for Cavendish in 1829 (325 out of 610 – 53%) voted for

²⁰ *John Bull*, 9 May 1831.

²¹ *The Satirist or Censor of the Times*, 15 May 1831.

²² Fisher, D. R., ‘Cambridge University’; Hilton, B., *A Mad, Bad and Dangerous People? England 1783-1846* (Oxford: Oxford University Press, 2006), pp. 437-38.

reform in 1831.²³ Professor of Geology, Rev. Adam Sedgwick, who was Cavendish's most energetic supporter and who had chaired the Cambridge Committee for this election, wrote after the failure: 'I was extremely fatigued with last week's work, and mortified at the result more than I can find words to express'.²⁴ In the circumstances, however, Sedgwick cannot really have been surprised: Charles Babbage, Chair of Cavendish's London Committee, wrote that 'I had good reason at its commencement to doubt the success of our candidate: not from any defect on his part, but entirely on political grounds'.²⁵

With Grey's ministry returned in June 1831 with a parliamentary majority of 136, work began on the preparation of a third Reform Bill. A Boundary Commission, eventually having thirty-one members and charged with the redistribution of parliamentary seats, was appointed in August 1831.²⁶ Martin Spychal has investigated the work of the Commission, focussing in particular on the importance of Lieutenant Thomas Drummond, a Royal Engineer with a background in science, who was responsible for much of the groundwork.²⁷ He draws attention, also, to the Commission's links to the Royal Society noting the presence of Davis Gilbert, included as a representative of those opposed to reform.²⁸ *Hansard* reveals other Royal Society Fellows to have included the astronomer Richard Sheepshanks and Navy Hydrographer Francis Beaufort, the latter being part of a sitting committee of three,

²³ Ibid.

²⁴ Clarke and Hughes, *The Life and letters of the Reverend Adam Sedgwick*, p. 376.

²⁵ Babbage, C., *Passages from the Life of a Philosopher* (London: Longman, 1864), p. 272.

²⁶ Brock, M., *The Great Reform Act* (London: Hutchinson, 1973) pp. 19-20, 310-13.

Disenfranchisement would see 56 nomination (rotten) boroughs, which had previously returned 111 MPs, lose their representation. Each of 30 boroughs with fewer than 4,000 inhabitants would lose one of their two MPs. Redistribution of these seats saw 22 larger towns, including Manchester and Birmingham, enfranchised through being awarded two MPs while 21 smaller towns were given one MP. The counties were awarded 65 additional seats and it was over the precise boundary details for these that there would be considerable argument, these being the constituencies dominated by the landed interest and on which the Tories would rely for their future support.

²⁷ Spychal, M., "'One of the best men of business we had ever met": Thomas Drummond, the Boundary Commission and the 1832 Reform Act', *Historical Research* 90 (2017), pp. 543-66.

²⁸ Ibid., pp. 549-50.

responsible for finalising each proposal before submission to Parliament.²⁹ Lord Althorp, announcing the appointment of the Commissioners, told the Commons that ‘the ground upon which they had been chosen was that of character, knowledge and science’.³⁰ The Commission had been ‘selected from a class of men as little biased as possible’, Althorp stated, but as Spychal points out, it had strong links to the SDUK, fourteen of its members, including Drummond and Beaufort, being on the SDUK Committee.³¹

Spychal considers Drummond to have taken charge of the Commission’s work. F.M.G. Wilson, however, believes the job to have been ‘entrusted’ to another SDUK committee man, the lawyer John Charles Shaw Lefevre, (who is not mentioned by Spychal), as an official commission on the recommendation of Lord Althorp.³² It is Drummond in particular, however, who is credited with the use of population, wealth and taxation statistics in the creation of the new constituencies.³³ Providing further evidence of the rising importance of mathematics in this period, Spychal draws attention also to its use both in criticism and in justification of the Commission’s methods. Tory MP Sir Frederick Pollock (Senior Wrangler 1806) questioned their accuracy, particularly in relation to the county seats, while the government countered this by contacting their ‘own set of mathematicians’ – Peter Barlow, George Biddell Airy and John Herschel – who ‘confirmed their approval’ of the formula being used.³⁴ By January, 1832, Lefevre, who was Senior wrangler, 1818, was able to

²⁹ Ibid., pp. 557-58; ‘Parliamentary Reform – Bill for England’, HC Debate 1 September 1831 *Hansard* cc986 <https://hansard.parliament.uk>

³⁰ ‘Parliamentary Reform – Bill for England’, HC Debate 1 September 1831, *Hansard* cc986 <https://hansard.parliament.uk>

³¹ Spychal, “One of the best men of business we had ever met”, pp. 547, 550.

³² Ibid., p. 548; Wilson, F.M.G., *A Strong Supporting Cast: The Shaw Lefevres 1789-1936* (London: Athlone Press, 1993), p. 78.

³³ Spychal, “One of the best men of business we had ever met”, p. 544.

³⁴ Ibid., pp. 562-63.

report to Althorp's father, Earl Spencer, that 'the County members have in general approved of my Carving'.³⁵

Men of science and their methods were, therefore, more closely involved in the reform process than might have been supposed. While Lubbock himself was not connected with the work of the Boundary Commission, it will be recalled that he too, in common with many of its members, was on the Committee of the SDUK. Lefevre would chair Lubbock's London Committee in the 1832 election, while its Secretary, John Elliott Drinkwater, had also been a Boundary Commission member.

3.3 Politics and men of science in the early 1830s: Lubbock's political position

It is often difficult, if not impossible, to establish the political positions of men of science in this period. In spite of this being a time of profound change, the political situation almost never makes its way into their correspondence.³⁶ One of only a small number of exceptions is a letter from David Brewster, (unusually, for a man of science, very public in his espousal of Whig causes), to Charles Babbage. The letter, dated 3 February, 1833, bemoans the Edinburgh Town Council's election of a Tory, James David Forbes, to the chair of Natural Philosophy at Edinburgh University, rejecting his main competitor, Brewster himself.³⁷ 'The Town Council is essentially a Tory corporation', Brewster complained, 'and as they are about to be reformed by the Burgh Reform Bill, they hate the government and their supporters'. They had, he added, 'united as one man to support the Tory candidate for the chair'. While,

³⁵ Wilson, *A Strong Supporting Cast*, p. 78.

³⁶ Based on an examination of letters 1830-1836: Herschel, Henslow, Faraday and Darwin correspondence at <https://epsilon.ac.uk> and BAAS correspondence in Morrell, J. and Thackray, A. (eds), *Gentlemen of Science: Early Correspondence of the British Association for the Advancement of Science* (London: Royal Historical Society, 1984).

³⁷ Brewster to Babbage, 3 February 1833, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, pp. 159-60.

as Steven Shapin has shown, there were perhaps genuine, non-political reasons why the men of the Edinburgh Town Council were reluctant to appoint Brewster – not least, concern about his ‘capacity to deliver public lectures’ – it would not have been unusual for them to have made a decision on party grounds.³⁸ As Stephen Jacyna notes, there was a long history of the ‘un-elected, self-perpetuating’ Tory Council ‘furthering their own interests as well as those of family and friends’, at the expense of ‘philosophic Whigs’.³⁹

Metropolitan men of science were, it seems, less inclined to express political opinion in their correspondence. A rare example in the Lubbock Collection is a letter from Sir James South dated 7 June 1832 (a Thursday) excusing its lateness by explaining that ‘the delight of Monday night’s victory in the House of Peers’ (the passing, after much opposition, of the Reform Act by the Lords on 4 June) had prevented him from thinking about ‘anything else than the glorious results which must ultimately arise from it’.⁴⁰ South was a Whig and he was in correspondence with another, Lubbock, whose position is easy to determine, not least because he was one of just two men of science from this period to have been a member of the Whig club, Brooks’s.⁴¹ It is frequently less straightforward. M. Norton Wise (in collaboration with Crosbie Smith) describes scientific culture in the 1830s as being ‘typically Whig’, flowing ‘strongly on the liberal side of the political . . . spectrum.’⁴² He has John Herschel ‘standing in the political centre’, although, as Joe Bord notes, it is not at all clear if he was ‘consistently regarded as a Whig’.⁴³ Jack Morrell and Arnold Thackray create a broad and, in the context of the period, somewhat questionable prosopographical category of

³⁸ Shapin, S., ‘Brewster and the Edinburgh Career in Science’, in J.R.R. Christie and A.D. Morrison-Low (eds), *Martyr of Science: Sir David Brewster 1781-1868* (Edinburgh: Royal Scottish Museum, 1984), pp. 18-19.

³⁹ Jacyna, L.S., *Philosophic Whigs: Medicine, Science and Citizenship in Edinburgh, 1789-1848* (London: Routledge, 1994), p. 2.

⁴⁰ South to Lubbock, 7 June 1832, Royal Society Lubbock Collection S305.

⁴¹ The other being the geologist, Henry Warburton.

⁴² Norton Wise, M. and Smith, C., ‘Work and Waste: Political Economy and Natural Philosophy in Nineteenth Century Britain (I)’, *History of Science* 27 (1989), p. 267.

⁴³ *Ibid.*; Bord, J., *Science and Whig Manners: Science and Political Style in Britain, c. 1790-1850*, (Basingstoke, Palgrave, 2009), p. 22.

'Liberal, Whig or Peelite politics' to allow them to see their 'Gentlemen of Science' as possessing 'a clear political orientation', their core members having a 'centrist, reforming political attitude'.⁴⁴

Morrell and Thackray classify one of the British Association's 'core members', Cambridge Professor of Botany, John Stevens Henslow, as a Peelite conservative like William Whewell.⁴⁵ The Reverend Henslow, however, was a Whig who, in 1832, was given a 'small living' by Grey's Lord Chancellor, Henry Brougham, perhaps in recognition of his having assisted with some of the SDUK's botanical publications.⁴⁶ In January 1833, after 'the bustle of the [University] Election' in which Lubbock was unsuccessful, Henslow wrote to his erstwhile student Charles Darwin away on the *Beagle* voyage as follows: 'We could make nothing of any attempt to squeeze a Whig in for the University so gave it up'.⁴⁷ By 'we', Henslow meant the small group of like-minded Cambridge academics, led by Sedgwick, who on 27 November 1832 had resolved 'That John William Lubbock, Esq. Vice President of the Royal Society, is a fit and proper person to represent this University in Parliament, both on account of his scientific attainments and of his general character'.⁴⁸ John Maurice Herbert, a university friend of Darwin's, added a postscript to a letter to him: 'I have just seen a requisition to Lubbock, signed by Sedgwick, Henslow and all the tribe of worthy liberals that one really has a regard for, inviting him to stand for the University, with which he has

⁴⁴ Morrell, J. and Thackray, A., *Gentlemen of Science: Early Years of the British Association for the Advancement of Science* (Oxford: Oxford University Press, 1981), pp. 24-25.

⁴⁵ *Ibid.*, p. 25.

⁴⁶ Thomas Coates (SDUK Secretary) to Henslow, 25 February 1831., <https://epsilon.ac.uk/view/Henslow/letters/letter151> Henslow was a member of the Cambridge branch of the SDUK Committee.

⁴⁷ Henslow to Darwin, January 1833, Darwin Correspondence Project "Letter no. 196", <https://www.darwinproject.ac.uk/letter/DCP-LETT-196.xml>

⁴⁸ *Sussex Advertiser* December 3 1832. This was not a decision long in the making: another academic, Henry Peter Gordon (Senior Wrangler 1827, FRS 1830) had been spoken of as a potential candidate 'without any political pledge' and that it was only when he failed to come forward, perhaps as late as 26 November, that a decision to approach Lubbock was made. (Sedgwick, letter to the Editor. *The Times*, 8 December 1832).

complied'.⁴⁹ As recent Cambridge graduates and not yet having had their M.A. conferred, neither Herbert nor Darwin were eligible to vote but the writer considered this to be news worthy of communication over a distance of 7,000 miles to South America. Darwin would recognise Herbert's 'worthy liberals' – Whig liberal Anglicans, leading figures in the intellectual life of the university. In addition to Sedgwick and Henslow, this group included Plumian Professor of Astronomy, George Biddell Airy.⁵⁰

Duncan Forbes, in his classic text on the origins of liberal Anglican thought, described their philosophy as being 'Coleridgean'.⁵¹ They sought, he suggested, a 'conception of history' which, while still being 'deeply religious', drew on the 'practical character' of Rationalism, but allied to a Romantic view of the facts of history 'seen in their wholeness'.⁵² Echoing Forbes, Iwan Rhys Morus sees liberal Anglican philosophy as having been a 'response to Utilitarianism in which attempts were made to construct a more human and Romantic image of society'.⁵³ For Morrell and Thackray, liberal Anglicans were a major component of a 'Coleridgean Clerisy', a 'national church of the intellect', which shaped the ideology of science within the newly-formed British Association.⁵⁴ While none of the aforementioned authors associate liberal Anglicanism with any political party in particular, Richard Brent has shown that in Parliament it was liberal Anglican *Whigs*, especially Lord John Russell, who were the driving force behind the ecclesiastical and educational reforms of the 1830s and who were 'concerned with the moral foundations of the constitution not just its

⁴⁹ Herbert to Darwin, 1 December 1832, Darwin Correspondence Project "Letter no. 193", <https://www.darwinproject.ac.uk/letter/DCP-LETT-193.xml>

⁵⁰ *Derby Mercury* 5 December 1832.

⁵¹ Forbes, D., *The Liberal Anglican Idea of History* (Cambridge, Cambridge University Press, 1952), p. 1.

⁵² *Ibid.*

⁵³ Morus, I.R., 'Correlation and Control: William Grove and the Construction of a New Philosophy of Scientific Reform', *Studies in History and Philosophy of Science* 22 (1991), p. 595.

⁵⁴ Morrell and Thackray, *Gentlemen of Science: Early Years*, pp. 19-21, 25, 63.

mechanics'.⁵⁵ They had, he suggests, a 'distinctive attitude to church reform', one which was receptive to the demands of Dissenters and, in consequence, one to which the Peelite William Whewell, although he shared many of their liberal values, would not have been able to subscribe.⁵⁶ In 1834, Whewell would become involved in what became a public dispute with a fellow Trinity tutor, the Whig, liberal Anglican luminary, Connop Thirlwall, on the issue of the admission of Dissenters to degrees. This, Whewell believed, threatened the 'security' of the Church of England.⁵⁷ Nevertheless, Sedgwick, Henslow, Airy and Thirlwall, along with Whewell, all find themselves in Susan Cannon's 'Cambridge Network' providing an illustration of the kind of difficulty which, as Bord points out, calls into question the 'plausibility of congruent mapping of individual religious, social and political positions'.⁵⁸ In 1829, Whewell had signed the requisition to Cavendish.⁵⁹ In 1832, with Church reform on the agenda, he did not sign the requisition to his former student, Lubbock, although he might have been persuaded to split his vote for him.

On 7 June 1832 the Great Reform Act received Royal Assent and, after several months during which there was legislation to redistribute constituencies and amend voting practice (none of which actually affected the University but would guarantee the return of a Whig reforming government), a General Election was held. The vote was required to take place no earlier than 10 December 1832 and no later than 8 January 1833. Polling for the University of Cambridge constituency was set to open at 9 a.m. on Wednesday 12 December and close at 1 p.m. on Friday December 14.⁶⁰ Lubbock's response to the requisition, in which he

⁵⁵ Brent, R., *Liberal Anglican Politics: Whiggery, Religion and Reform* (Oxford: Clarendon Press, 1987), pp. 1-18.

⁵⁶ *Ibid.*, pp. 15, 196, 208.

⁵⁷ Whewell, W., *Remarks on some Parts of Mr Thirlwall's Letter on the Admission of Dissenters to Academical Degrees* (Cambridge, 1834), p. 22.

⁵⁸ Bord, *Science and Whig Manners*, p. 22.

⁵⁹ *The Times*, 6 June 1829.

⁶⁰ *Morning Chronicle*, 7 December 1832.

accepted the invitation to stand and addressed the electorate, contains only the briefest of political statements:

My political principles are in general accordance with those of the present Administration; but I shall endeavour, on every question which may be presented for consideration, to form independently the best opinion of which I am capable. I shall resist violent changes which may endanger existing institutions, and I shall support only such gradual alterations as are required by circumstances, and for which the country is prepared.⁶¹

Timothy Alborn, in his Oxford Dictionary of National Biography entry for Lubbock, makes only passing reference to the election recording that he stood ‘unsuccessfully as a Radical M.P. for Cambridge in 1832’.⁶² Lubbock’s letter is not that of a Radical, rather it is one which supports the measured and moderate reform advocated by liberal Anglican Whigs. As William Whewell remarked a few days later: ‘Lubbock is a most temperate and moderate person, the most conservative of Whigs, and therefore more likely to conserve than a headlong Tory’.⁶³ A Radical would never have been acceptable to the members of the Senate, the majority of whom were clergymen. A more Radical position was taken by Charles Babbage, standing (unsuccessfully as it would turn out) as an independent Whig candidate in the newly-created Finsbury constituency. He informed constituents that he was ‘an advocate for a large reform of the Church, and for a complete revision of the ecclesiastical establishment’.⁶⁴

3.4 Lubbock’s support from Science

There are a number of reasons why Sedgwick and his liberal Anglican colleagues, having failed so badly with Cavendish the previous year and now in an even less favourable political

⁶¹ *Morning Post*, 29 November 1832.

⁶² Alborn, T.L., ‘Sir John William Lubbock, Third Baronet. (1803-1865)’, *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/17119>

⁶³ Stair Douglas, J. M., *The Life and Selections from the Correspondence of William Whewell* (London: Kegan Paul 1881), p. 147.

⁶⁴ *Morning Post*, 29 November 1832.

climate, may have believed there was a chance of success with Lubbock. The catalyst for the attempt was perhaps their being aware that it was likely that one of the sitting MPs, William Yates Peel, would not stand because of ill-health (gout). There was a chance, therefore, as Henslow had told Darwin, to 'squeeze a Whig in' before a Tory replacement could be found.⁶⁵ They may also have miscalculated the level of support they could count on. Whewell commented that while 'Sedgwick is strenuous' in his support of Lubbock, and 'Thirlwall is more staunch still', Sedgwick was 'somewhat grieved by the vehemence of some of his Whig colleagues here, and truly not without reason'.⁶⁶ They must, however, have felt that Lubbock's reputation was such that they could persuade the electorate that he really was, 'on account of his scientific attainments and general character', a 'fit and proper person' to represent them. That Sedgwick was President-elect of the British Association which was due to assemble for its third meeting the following June – in Cambridge – cannot be unconnected. The nomination of and support for Lubbock might have helped Association leaders like Sedgwick and Murchison persuade the at-the-time reluctant Royal Society Vice-President to support the nascent body (see Chapter 4). An on-board Lubbock as MP would have been an undoubted fillip. Lubbock himself, with his extensive connections, would surely have been able to secure a seat elsewhere but it was for the *University* that he was attracted to stand, so that he might represent the nation's intellectual heart.

It is made clear by Sedgwick, in a subsequent letter that he wrote to *The Times*, that he considered Lubbock to be a 'man of Character, offering himself on scientific grounds', not a 'mere champion of a party', once again, the emphasis being on Lubbock's suitability *because* of his attainments in science.⁶⁷ Lubbock had the support of four out of the five scientific professors: Sedgwick, Henslow, Airy and Professor of Chemistry, James Cumming.

⁶⁵ Henslow to Darwin, January 1833, Darwin Correspondence Project "Letter no. 196", <https://www.darwinproject.ac.uk/letter/DCP-LETT-196.xml>

⁶⁶ Stair Douglas, *The Life and Selections from the Correspondence of William Whewell*, p. 147.

⁶⁷ Sedgwick, Letter to the Editor. *The Times*, 8 December 1832.

In addition, supporting him publicly, were George Pryme, the Professor of Political Economy who was about to be elected Whig MP for Cambridge County, and two Masters: the physician Martin Davy (Caius) and mathematician John Lamb (Corpus Christi).⁶⁸ Ranged against him, as reported in the *Derby Mercury*, was ‘a list of distinguished names of the university among whom are nine Heads of Houses [Masters of Colleges], three professors and seventy-five fellows of Colleges engaging themselves to support the present members [Goulburn and Peel]’.⁶⁹ The name of Professor of Mineralogy, William Hallows Miller, is something of a surprise inclusion, and the only significant scientific name, in the list of Goulburn/Peel supporters. A Secretary of the Cambridge Philosophical Society and a more-than-competent mathematician (5th Wrangler, 1826), Miller is a member of Cannon’s ‘Cambridge Network’ but would not support the scientific candidate here.⁷⁰

The strongest endorsement of Lubbock came from George Biddell Airy. In his autobiography Airy would recall that ‘on Nov 27th I had a letter from Sedgwick requesting me to write a letter in the newspapers in favour of Lubbock; which I did’.⁷¹ The letter was circulated to the press beneath a note from Sedgwick which explained that Professor Airy ‘is never lavish of his praise, and his reply is not written in the spirit of a party man, but it places Mr Lubbock’s scientific claims in a point of view sufficiently exalted to satisfy his warmest supporters, and founds them upon statements against which no one will venture to raise a cavil’.⁷² The letter was written at a time when Airy and Lubbock were not yet close colleagues and had, in previous years, often reviewed each other’s work in somewhat negative terms.⁷³

⁶⁸ *Derby Mercury*, 5 December 1832.

⁶⁹ *Ibid.*

⁷⁰ Cannon S.F., *Science in Culture* (Dawson: Folkestone, 1978), p. 42.

⁷¹ Airy, G. B., *Autobiography of Sir George Biddell Airy KCB*, Airy, W. (Ed.), (Cambridge: Cambridge University Press, 1896), p. 92.

⁷² *Cambridge Chronicle* as reported in *The Times*, 30 November 1832.

⁷³ Airy to Sedgwick, 3 February 1829 and Airy to Whewell, 16 July 1830, Royal Society Lubbock Collection A 91 and A92.

Airy began by praising Lubbock's mathematical papers and their importance to English mathematics:

They were the first which placed us on a level, as to our pretensions to original investigation in the highest branches of mathematical philosophy, with the other nations of Europe. There was a time (and not many years since) when our national scientific character was extremely low. In the memoirs of other countries there appeared, almost every year, mathematical investigations bearing immediately on the most important points of natural philosophy and contributing especially to the accuracy of astronomical prediction. In the English Transactions nothing similar appeared. In the country of Newton these inquiries were unknown . . . This reproach was removed from us by Mr Lubbock and if a scientific character is valuable to a nation, our gratitude is due to him.⁷⁴

Airy concluded his letter by commenting on Lubbock's role at the Royal Society. 'I shall content myself with saying, as the general opinion, that to him is due in no small degree the zeal of cooperation and the spirit of unity whose absence once seemed likely to overthrow the most venerable scientific association in Europe'.⁷⁵

William Whewell, as has been noted, did not endorse Lubbock's candidacy publicly. However, with the withdrawal of William Yates Peel he intended to vote for him. Writing to his friend, the political economist Richard Jones, on 2 December Whewell confided: 'I shall vote for Lubbock, as my own pupil and particular friend and as *the* mathematician of London (the italics are in Todhunter's collection of Whewell correspondence).⁷⁶ John Elliot Drinkwater, Secretary of Lubbock's London Committee, hoped that Whewell might be more active in his support, perhaps by using his influence to persuade Cambridge Vice-Chancellor William Webb to support Lubbock, but it seems he was reluctant to do so.⁷⁷ 'When Cavendish was thrown out', he explained, 'I quite resolved . . . to leave all the active business of elections

⁷⁴ Airy to Sedgwick, 28 November 1832, Royal Society Lubbock Collection A 96.

⁷⁵ Ibid.

⁷⁶ Todhunter, I., *William Whewell, D.D. Master of Trinity College, Cambridge. An Account of his Writings with Selections from his Literary and Scientific Correspondence* vol. 2 (London: Macmillan 1876), p. 149.

⁷⁷ Drinkwater-Bethune to Lubbock, 3 December 1832, Royal Society Lubbock Collection B 255.

to people whose opinions of persons and principles happen to carry all their sympathies to the same side'.⁷⁸ 'I can only give him my vote and my good wishes' he wrote, almost apologetically, to Lady Malcolm, adding that if 'any persons so extremely sensible and judicious' were to ask him for advice on how to vote he would tell them 'that Lubbock and Goulburn will be a most fair and respectable representation of the University'.⁷⁹ He would not, therefore 'plump' for Lubbock (vote only for him). George Peacock, Trinity Fellow and tutor in mathematics, was a life-long Whig who, in 1839, would be appointed Dean of Ely by Prime Minister Melbourne. In 1829 he had been one of those proposing Lubbock for Fellowship of the Royal Society and, since November 1830, had served with him on the Society's Council. However, he cannot be included in the list of Senate residents actively supporting Lubbock. In common with the many members of the Senate seeking clerical preferment, Peacock would have had reservations about being seen to be supporting a reform candidate. 'As for Peacock', Whewell wrote, 'I regret to say that, though he has moulted his wig, and rejoices in his own hair, he still does not think with so much liberality as you might expect. He has not yet declared for Lubbock, but I think it very likely that he will give him his vote'.⁸⁰

As by far the most significant scientific non-resident, John Herschel's position is of great interest. Two years on from the Royal Society presidential election in which he had lost narrowly to the Duke of Sussex, and still in subsequent self-imposed exile from the Society, Herschel might have been reluctant to offer his active support to its Treasurer and Vice-President (even though he too would have included Lubbock in his Council, if elected). Lubbock's London Committee Secretary, Drinkwater, sent a canvassing circular and Lubbock also wrote personally to Herschel, soliciting his support.⁸¹ Drinkwater received a reply which

⁷⁸ Stair Douglas, *The Life and Selections from the Correspondence of William Whewell*, p. 147.

⁷⁹ *Ibid.*

⁸⁰ *Ibid.*, p. 148.

⁸¹ Lubbock to Herschel, 29 November 1832, Royal Society Herschel Collection HS 11,358.

Herschel allowed to be communicated to the newspapers and which began: 'I have received your letter accompanying Mr Lubbock's address. On the strength of that address, and of my high estimation of Mr Lubbock's attainments, I shall certainly support him with my vote.'⁸²

On Friday, 30 November, the Royal Society Anniversary Meeting and Dinner was held at the Crown and Anchor Tavern in the Strand, near to the Society's base in Somerset House. It was chaired by the President, HRH the Duke of Sussex. The formal addresses are recorded in the *Proceedings* but newspapers such as *The Times* reported also on the speeches made 'after the cloth was removed'.⁸³ Mr Lubbock', it stated, 'in a neat speech, proposed the health of the illustrious President. He congratulated the Society on the unanimity which now prevailed in it, and which did not exist when his Royal Highness entered on his office. The Society now stood higher in the estimation of the public; and with respect to the members of it'. The report, which both underlines the esteem in which Lubbock was held and captures a sense of bonhomie and togetherness sorely lacking at the Society two years previously, continued as follows:

The Royal Duke then proposed the health of Mr Lubbock, their Treasurer. (applause.) 'This morning', observed his Royal Highness, 'I took up a letter which I saw was signed by Professor Airy, and I must say I never read a more gratifying letter, or a testimonial more powerfully expressed, in so few words, to the scientific character of an individual, and to the results of that individual's exertions, than in that letter'. 'If, therefore, we look to the services Mr Lubbock has rendered to the country, they are great, but if we look to his future labours, we may expect that they will add still more to the credit and character of the Society and the country'. 'I therefore, with great pleasure, propose the health of Mr Lubbock and trust that he will be able to undergo those exertions to which a life of science exposes him, and that they may lead to other duties which a man of science has a right to expect'. (Great applause.) The members then retired to the coffee room after an evening spent in great hilarity and rational enjoyment. We have rarely, if ever, witnessed a dinner party which went off so well.

The dinner and wines were excellent.⁸⁴

⁸² *The Times*, 7 December 1832; Herschel to unidentified (probably London Committee), Royal Society Lubbock Collection H 350.

⁸³ *The Times*, 1 December 1832.

⁸⁴ *Ibid.*

What were the 'other duties which a man of science has a right to expect'? Was the Duke, who, unlike his Royal brothers, Kings George IV and William IV, had retained the Whig sympathies of his youth, engaging in a little electioneering? The Tory *Morning Post* was indignant at the 'canvass evidently pre-arranged between the illustrious President and Mr Lubbock' and expressed its 'pain and mortification' that 'an individual eminent for his scientific acquirements, qualified and destined, as it might have seemed, by nature and by providence, to uphold the reputation of the Society, to advance its objects and to extend its utility, should have accelerated its fall for purposes so petty and so personal as that of promoting his own success at a contested election'.⁸⁵ Nevertheless, it is clear that the Duke, in praising Lubbock, was making a speech of which his audience, and it was reported that there were nearly eighty Fellows present, enthusiastically approved. Further evidence of Lubbock's support from the scientific community is provided by the names of those attending his London Committee meeting the following day (1 December). These include four Royal Society Council members elected or re-elected the previous evening: Peter Mark Roget (Secretary), John George Children (Secretary), Francis Baily and Roderick Impey Murchison. In the contested Royal Society Presidential election, exactly two years previously, Baily and Murchison had been amongst the most active of campaigners for Herschel (it was Murchison who published the names of his eighty supporters). While their presence is perhaps testament to Lubbock's success in rehabilitating the reformers, it should be remembered that both Baily (who was a family friend anyway) and Murchison were, at the time, anxious to enlist Lubbock's support for the British Association. Murchison was, however, supporting Lubbock in spite of being himself a strong Peelite Tory.⁸⁶ Charles Babbage, with characteristic cynicism, reflected on the various possible motives behind the

⁸⁵ *Morning Post*, 3 December 1832.

⁸⁶ Drinkwater to Lubbock, 3 December 1832, Royal Society Lubbock Collection B 255; Morrell and Thackray, *Gentlemen of Science. Early Years*, pp. 56, 250.

joining of election committees.⁸⁷ Whatever their motive, however, these men, none of them actually having a vote, felt that Lubbock was a candidate they should support in his bid for election.⁸⁸

There were four members of the University Senate on the Council of the Royal Society which was elected in November 1832: Professor James Cumming (who had signed the requisition to Lubbock), William Whewell, astronomer Richard Sheepshanks and mathematician Samuel Hunter Christie. On hearing of Lubbock's candidacy, Christie wrote to London Chairman Lefevre offering his 'unsolicited vote' in favour of 'one I consider so worthy of the honour of representing the University of Cambridge'.⁸⁹ 'I know not, nor do I enquire what may be Mr Lubbock's political opinions', he explained, 'but I know that with no other inducement than a genuine love of science, he has zealously devoted his time to the advancement of its interests, that he has successfully promoted scientific enquiry, that he holds a distinguished station in the science of his country, and am in consequence satisfied that his political principles cannot be illiberal'. Christie would go on to be a long-term member of the Royal Society Council, succeeding Childen as Secretary in 1837, and the cynical view would be that he was not harming his prospects by praising the Society's most influential figure. However, it is difficult not to experience a sense of sincere respect when reading Christie's words.

3.5 Would a man of science make a good MP?

Herschel's letter supporting Lubbock's candidacy, having first stated the author's 'high estimation of Mr Lubbock's attainments', continued as follows:

⁸⁷ Babbage, *Passages from the Life of a Philosopher*, p. 261.

⁸⁸ Childen attended Queen's College Cambridge, but did not graduate.

⁸⁹ Christie to Shaw Lefevre, 30 November 1832, Royal Society Lubbock Collection C 239.

I have always been of opinion that such attainments ought to form one very prominent element in the motives which should determine the choice of the Universities in the election of their representatives, not only on account of the general evidence of habits of impartial enquiry and concentrated thought, but more especially for the nature of the institutions themselves, where, if anywhere, the qualities on which a high scientific character depends should be cherished as valuable and held forward for imitation.⁹⁰

Herschel's views represent an extension of those he expressed in Part I of his 'Preliminary Discourse on the Study of Natural Philosophy', published in 1830, in which he had written at length concerning the 'advantages of the study of the physical sciences' and of its 'influence on the wellbeing and progress of society'.⁹¹ This work, although highly influential in the scientific world, was written for a general readership as Volume XIV of Dionysius Lardner's *Cabinet Cyclopaedia* collection and it reflected the increased public interest in, and recognition of the value of, science. In 1827, on a similar theme, the introductory treatise in the SDUK's *Library of Useful Knowledge*, Henry Brougham's 'A Discourse of the Objects, Advantages and Pleasures of Science', had sold over 33,000 copies.⁹² Steven Shapin considers this kind of view of 'the character or quality of scientific knowledge and the methods by which that knowledge was secured' to have been one of the 'bases for conceiving of the natural philosopher . . . as morally superior to other people'; a view which he sees as persisting 'through much of the nineteenth and even early twentieth century'.⁹³ However, although there had been a number of Fellows of the Royal Society in the parliaments that had assembled in 1830 and in 1831, few were engaged in scientific work and these had not been elected because of their science. Only two can be considered to be active in the physical

⁹⁰ Herschel to unidentified (probably London Committee), Royal Society Lubbock Collection H 350.

⁹¹ Herschel, J.F.W., 'Preliminary Discourse on the Study of Natural Philosophy', *Cabinet Cyclopaedia* (London: Longman, 1830), pp. 1-74. The quotes are from the titles of Part I (p. 1) and chapter 3 (p. 35).

⁹² Brougham, H.P., 'A Discourse of the Objects, Advantages and Pleasures of Science', *Library of Useful Knowledge* (London: Baldwin, Cradock and Joy, 1827).

⁹³ Shapin, S., *The Scientific Life: A Moral History of a Late Modern Vocation* (Chicago: University of Chicago Press, 2008), p. 24.

sciences: mathematician/engineer Davies Gilbert (he would retire from Parliament at the 1832 dissolution) and astronomer William Parsons, Lord Oxmantown (later, as Earl of Rosse, to be President of the Royal Society, 1848-54).⁹⁴

Herschel's letter, together with those of Sedgwick and Airy, opened an extensive debate in the newspapers, indicative of the level of nationwide interest in the contest but also revealing the high level of awareness of Lubbock's scientific work. The fitness, or otherwise, of a natural philosopher for parliament was the issue on which the press would focus in particular. The London evening paper, *The Globe*, becoming more mainstream after supporting Radical views in the 1820s, was the first to comment. Owned by political economist and Whig M.P. Robert Torrens, it often received briefings from the Whig administration and, indeed, it was able to carry the following report on Lubbock's candidacy, on the day that it was declared in Cambridge (Wednesday 28 November):

We have great pleasure in being able to announce to our readers that the University of Cambridge is again about to possess at least one member who will worthily represent the enlightened and intellectual part of that body. Mr Lubbock's principles are, we believe, liberal, and his high character as a man of science, and the distinguished position he already possesses as Vice-President of the Royal Society, mark him out as peculiarly fitted to rescue the University from the unworthy and incompetent hands to which its interests have been temporarily entrusted.⁹⁵

The first response of that most vociferous of Tory organs, the *Morning Post*, (29 November) had been to call it a 'most amusing announcement of senatorial pretension' before going on to belittle Lubbock's academic achievements and lineage – 'his pretensions as a scholar are announced, we believe, as shortly as his genealogy' – and advising him to return 'soberly to

⁹⁴ Jenkins, T., 'Gilbert (formerly Giddy), Davies (1767-1839); Salmon, P., 'Parsons, William Lord Oxmantown (1800-1867)', *The History of Parliament: the House of Commons 1820 – 1832*, www.historyofparliamentonline.org/volume/1820-1832/member/gilbert-davies-1767-1839

⁹⁵ *The Globe*, 28 November 1832, as reported in the *Northampton Mercury*, 1 December 1832.

his father's counting house'.⁹⁶ However, by 1 December the *Post* was conceding Lubbock's importance as a man of science; focusing instead on his lack of experience as a statesman and his willingness to support measures to reform the Church, to the detriment of the University.⁹⁷

All who are acquainted with the recent history of science need not the laboured eulogy which Professor Airy has kindly lavished upon Mr Lubbock's character as a philosopher. They are willing to give him every credit for most profound knowledge of analysis and physical astronomy, and when a parliament shall be summoned in which the question is to be agitated whether Biela's Comet is likely to derange the motions of the earth or not, they would be very desirous to elect a Representative so qualified. But what is now wanted is a man who with the habits of a statesman has firmness to resist fresh inroads and is prepared to defend our remaining institutions.

The reference to Biela's Comet is particularly appropriate. Two months previously, on 1 October, the *Post* had been reporting the reappearance of the comet, identified as being periodic by Wilhelm von Biela in 1826.⁹⁸ Fears that the comet would collide with the earth on its return in 1832 had been dispelled by astronomers who had calculated that, although it would cross the Earth's path, it would be 60 million miles away by the time the Earth reached that point. The paper is clearly familiar with Lubbock's work on the subject: *On the Determination of the Distance of a Comet from the Earth: and the Elements of its Orbit*, published earlier in the year.⁹⁹ The Tory *Morning Herald* 'doubted whether men of more abstract science . . . are calculated to make useful members of Parliament; while by deserting the posts for which they are qualified, they rob the world and themselves of the fruits of their real utility'.¹⁰⁰ To this the pro-reform *Spectator* (it had earlier in the year coined the slogan 'the Bill, the whole Bill and nothing but the Bill') responded: 'It is humbly proposed to

⁹⁶ *The Morning Post*, 29 November 1832.

⁹⁷ *The Morning Post*, 1 December 1832.

⁹⁸ *The Morning Post*, 1 October 1832.

⁹⁹ Lubbock, J.W., *On the Determination of the Distance of a Comet from the Earth: and the Elements of its Orbit* (London: Charles Knight, 1832).

¹⁰⁰ *The Morning Herald* as reported in *The Spectator*, 8 December 1832.

send into the House two men who are somewhat skilled in the exact sciences – Mr Babbage and Mr Lubbock; the latter, by the by, a plain, practical London merchant as well as a philosopher – and, forthwith, all the wiseheads in Gotham fall a wagging at the danger that will accrue to the legislature from being so o’erinforme’d’.¹⁰¹

On Monday 3 December Drinkwater was able to write to Lubbock from the London Committee: ‘Up to this date no advertisement of a new candidate has been sent to this evening’s paper’.¹⁰² There was growing concern in Tory circles that a replacement for Peel might not be found in time. On Wednesday 5 December, William Wordsworth, by this stage in his life a staunch Tory like his younger brother Christopher, the Master of Trinity, wrote to his nephew John (Christopher’s son):

My Dear John

The last Cambridge paper proved to us very interesting, especially to your dear aunt, my wife, who is a keen electioneer. Who is to be set up against Lubbock now that Peel is retired? We of this family will be mortified above measure if you do not triumph over any upstart.

Here follows an epigram allusive to the testimonials of the astronomical professor;

For Lubbock vote – no legislative hack
The dupe of history – that “old Almanack”;
The sage has read the stars with skill do true,
That almanack he’ll follow must be new.¹⁰³

‘If you think it worth while to print the epigram’ the poet added, ‘don’t tell that I wrote it’.

Perhaps he was mindful of his friendship with Sedgwick, formed during the geologist’s many years of fieldwork in the Lake District. As a literary device, the short, witty and satirical epigram is effective only when its subject is sufficiently well known to be held up to ridicule.

Wordsworth, in his home at Rydal Mount near Ambleside in the distant Lake District, was

¹⁰¹ *The Spectator*, 8 December 1832. ‘The Wise Men of Gotham’ – a name originally given to the villagers of Gotham, Nottinghamshire, alluding to their reputed (feigned?) simplicity.

¹⁰² Drinkwater to Lubbock, 3 December 1832, Royal Society Lubbock Collection B 255.

¹⁰³ Knight, W. (Ed.), *Letters of the Wordsworth Family from 1787 to 1855* vol. 3 (London: Ginn, 1907), p. 27. The collection of letters incorrectly gives the date as 5 December 1833.

aware, and expected the epigram's readers to be aware, of Lubbock's major contribution to the *British Almanac of the Society for the Diffusion of Useful Knowledge*. Susan Cannon, in a brief reference to the election, does not quote the epigram but describes it, perhaps a little unfairly, as being 'very poor'.¹⁰⁴ She does not seem to be familiar with the three other epigrams Wordsworth wrote for use in the election, two of which are specifically about Lubbock. *Now that Astrology is out of date* echoes the comments in the *Morning Post*:

Now that Astrology is out of date,
What have the stars to do with Church and State?
In Parliament should Lubbock go astray,
Twould be an odd excuse for Friends to say,
"He's wondrous knowing in the Milky Way!"¹⁰⁵

Once again, the poet knows that the reading public will be familiar with Lubbock the astronomer. *The Stars in Six Maps on the Gnomonic Projection*, compiled and arranged by Lubbock and published by Charles Knight for the SDUK in 1830, had proved highly popular and was reprinted in many successive years.¹⁰⁶ In *Question and Answer*, Wordsworth draws on his experiences as a young man caught up in the fervour of the revolution in France. He cleverly reminds reformer Lubbock that the astronomer and mathematician, Jean Sylvain Bailly, one of the leaders of the revolution, fell from favour and was guillotined when he refused to testify against Marie Antoinette.

"Can Lubbock fail to make a good M.P.
A Whig so clever in astronomy?"
"Baillie, a Brother sage, went forth as keen
Of change – for what reward? – the Guillotine:
Not Newton's genius could have saved his head
From falling by the 'mouvement' he had led".¹⁰⁷

¹⁰⁴ Cannon, *Science in Culture*, p. 42.

¹⁰⁵ Curtis, J. (ed.), *The Poems of William Wordsworth. Collected Readings from the Cornell Wordsworth* vol. 3 (Penrith: Humanities-Ebooks, 2014), p. 682.

¹⁰⁶ Lubbock, J.W., *The Stars in Six Maps on the Gnomonic Projection* (London: Charles Knight, 1830). A new edition, revised by the astronomer William Rutter Dawes, was produced in 1844 and was still in print in the 1850s.

¹⁰⁷ Curtis, *The Poems of William Wordsworth*, p. 682.

Perhaps Wordsworth was also aware that Bailly was arrested on the way to join his friend Pierre Simon Laplace who, of all astronomer-mathematicians, had the greatest influence on Lubbock.

3.6 Lubbock's withdrawal

The Chairman and Secretary of Lubbock's London Committee had been hard at work canvassing the electorate, most of whom were clergymen not resident in Cambridge. In these days before the Penny Post, the *Leeds Intelligencer and Yorkshire General Advertiser* complained that 'a great many of the canvassing letters put out in favour of Lubbock, the Whig candidate for the University of Cambridge, were franked by Lords Grey and Brougham, intending to convey a hint that he had many good things to give away', perhaps a senior Church position, many of which were in the gift of Government.¹⁰⁸ Lubbock was clearly an 'official' Whig candidate; Babbage, in contrast, was not (see below). President of the Council, the Marquess of Lansdowne, who, as Henry Petty, had himself represented the University while serving as Chancellor of the Exchequer in the 'Talents' ministry, wrote personally to tell Lubbock that 'It gave me great pleasure to hear you were a candidate for the University of Cambridge' and to offer him 'good wishes'.¹⁰⁹ Lubbock's London Chairman, John Charles Shaw Lefevre, also enlisted the help of Whig grandee Viscount Althorp (Leader of the House and Chancellor of the Exchequer) in the canvassing of the Bishop of London.¹¹⁰ Sedgwick had sought to downplay party affiliation but the Whig party machine was hard at work in the operation of the London Office.

¹⁰⁸ *Leeds intelligencer and Yorkshire General Advertiser*, 10 January 1833.

¹⁰⁹ Henry Petty Fitzmaurice, Marquess of Lansdowne, to Lubbock, Thursday 30? November 1832, Royal Society Lubbock Collection, P152.

¹¹⁰ Drinkwater-Bethune to Lubbock, 3 December 1832, Royal Society Lubbock Collection B 255.

The Royal Society's Lubbock Collection contains a large number of replies to the Committee's letters. Amongst the most interesting and informative are those from Dr Samuel Butler FRS (1822), Archdeacon of Derby and Headmaster of Shrewsbury School, 1798 – 1836.¹¹¹ A Whig liberal Anglican, and an old friend of Sedgwick's, Butler was asked to canvass several other Senate members but warned that 'Many of the names sent to him by the committee are of an utterly hopeless description being ultra Tories or very decided conservatives'.¹¹² On December 5 he told the committee that strong attempts were being made to 'induce all his assistant masters to pair off' which, as he explained in a letter to Sedgwick, he considered to be unwise: 'Most of my assistant masters are anxious to pair off but I think it desirable that we should show numbers on the poll and one cannot always depend on the intentions of the person offering to pair'.¹¹³ As with most non-residents, the Archdeacon's journey to Cambridge, at short notice and in mid-December, would require a determined effort. He informed Sedgwick that he intended to leave for Cambridge on the morning of Thursday 13 December when most of his pupils had departed for the vacation and he had voted for the Whig candidate in Shrewsbury.

I mean to poll here, with my son, and to start instantly, by 11 I hope, for Cambridge, writing to bespeak post houses all the way. Allowing four hours for rest in the dead of the night when one cannot get on along crop country roads and resuming our seats in the carriage at a little before 5 in the morning, I feel confident that, barring accidents, we may reach Cambridge some time between 10 and 12 on Friday morning so as to vote before the poll closes. Now as I should be very much vexed to have taken so long a journey without being able to give my vote, I shall depend upon your keeping the poll open till 1 on Friday which you may easily do by voting once in half an hour.¹¹⁴

¹¹¹ Leach, J.H.C., 'Butler, Samuel (1774-1839)', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/32217>

¹¹² Butler to Lefevre, 1 December 1832, Royal Society Lubbock Collection B 618.

¹¹³ Butler to Lefevre. 5 December 1832. Royal Society Lubbock Collection B 620; Butler to Sedgwick, 9 December 1832, Royal Society Lubbock Collection B 621.

¹¹⁴ Butler to Sedgwick, 9 December 1832, Royal Society Lubbock Collection B 621.

In the event, Butler did not have to make his tortuous journey. On 5 December, it was announced that Charles Manners Sutton had come forward as a Tory candidate.¹¹⁵ Manners Sutton, grandson of the 3rd Duke of Rutland and son of the recently-deceased Archbishop of Canterbury, was a personal friend of Sir Robert Peel and had been Speaker of the House of Commons since 1817.¹¹⁶ Brought in from the Scarborough constituency which he had represented for 26 years, he was the ideal candidate for the University and it was soon being reported that 'there appears no doubt of his return with Mr Goulburn'.¹¹⁷ The Tory party was facing an election defeat that would see its representation in parliament reduced to 175 out of 658 MPs. The loss of one of the University seats to a Whig, while of little importance in terms of numbers, would have been of considerable symbolic significance, however. On 8 December, Lubbock announced that he was retiring from the contest. 'Having ascertained, as well as a short and hurried canvass would permit, the degree of support upon which I might fairly calculate at the approaching election, I feel that I should not be justified in exposing the Members of the Senate to the inconvenience of proceeding to the poll', he stated in a letter, continuing:

When I found that the contest was taken up by my opponents on political grounds, without reference to any other consideration, I felt that I had not pretensions which could enable me to sustain effectually the cause of my friends.

Although unsuccessful, I retire from the present contest with most grateful recollections of the support I have received. I experience the utmost gratification in having been invited to offer myself upon a principle, the importance of which to the interests of the University will be generally recognised at no distant period, and must ultimately prevail.¹¹⁸

¹¹⁵ *Morning Post*, 5 December 1832.

¹¹⁶ Fisher, D. R., 'Manners Sutton, Charles (1780-1845)', *The History of Parliament: the House of* www.historyofparliamentonline.org/volume/1820-1832/member/manners-sutton-charles-1780-1845

¹¹⁷ *Yorkshire Gazette*, December 8 1832.

¹¹⁸ *Bury and Norwich Post*, 12 December 1832.

Barely ten days had elapsed since Lubbock had declared his candidacy and, with this advice to the University to accept the inevitability of change, he now withdrew. Palmerston, writing to Lubbock to express his regret, commented: 'It is to be hoped that in the process of time those strongly moored vessels . . . will get under weigh [sic] and float a little with the tide'.¹¹⁹ Palmerston's assessment would prove more accurate than Lubbock's: the University would stand firm against the tide of reform for decades to come.¹²⁰

It would seem probable that retiring from the contest was always to be Lubbock's intended course of action if a Tory candidate of sufficient stature, especially one with strong links to the Established Church, were to emerge. 'From the moment that Mr Manners Sutton declared himself', stated the *Morning Post*, 'it was obvious that [Lubbock] stood no chance of success'.¹²¹ *Bell's Life in London* commented: 'Mr Lubbock retired from the contest for the University of Cambridge, finding the Tory interest too strong. We are not surprised at this, with the Church in danger!'¹²² *The Times* described Lubbock's letter as 'a very considerate and handsome address' before going on to accuse the electors of 'overlooking, a second time, the claims of men who are equally distinguished for knowledge, and its twin brother freedom, in favour of persons who, however amiable in other respects, have never exhibited a single symptom of love of learning or regard for its professors'.¹²³ The mainly conservative journal, *The Age*, offered an epigram alluding to Lubbock's scientific work:

¹¹⁹ Henry Temple, Viscount Palmerston, to Lubbock, 11 December 1832, Royal Society Lubbock Collection T75.

¹²⁰ Garland, M, M., *Cambridge before Darwin: The Ideal of a Liberal Education 1800-1860* (Cambridge, Cambridge University Press, 1980), pp. 70-79. The Cambridge University Act of 1856 abolished religious tests for degrees other than Divinity but graduates could not become members of the Senate or hold 'Office' (Professorship, Fellowship etc.) unless they had declared themselves to be *bona fide* members of the Church of England. These restrictions were finally removed by the University Tests Act of 1871.

¹²¹ *Morning Post*, 10 December 1832.

¹²² *Bell's life in London and Sporting Chronicle*, 16 December 1832.

¹²³ *The Times*, 10 December 1832.

Lubbock, that “tide”y man, tho’ prosy prater –
Soft dalliance sought with Alma Mater;
The dame, astonished at his suit flagitious,
“My stars” quoth she –
“Stars” echoed he –
“I’m off – I see they’re not at all propitious”¹²⁴

Archdeacon Samuel Butler was one of many who wrote to Lubbock to commiserate. ‘I think you adopted the only wise course left to you, by retiring in time,’ he said.¹²⁵ However, writing confidentially to Sedgwick, he advised that on a future occasion they must ‘look for influential candidates and *magna nomina*’.¹²⁶ They needed an aristocrat, like Cavendish or Palmerston. ‘To all that can be said of Mr Lubbock’s merits I most willingly subscribe,’ he said. ‘But look at the array against him’. ‘He was a well-chosen opponent, whom no private person, however high in character for talents or virtues, could hope to conquer’.¹²⁷ A Lubbock family friend, the former Whig MP, businessman and conversationalist, Richard Sharp, also wrote to Lubbock. ‘There were two impediments to your being chosen for the University’, he told him. ‘You hold liberal opinions and are a man of science – both insurmountable’.¹²⁸ Probably, however, the University would have accepted a man of science; the insurmountable impediment was Lubbock’s closeness to a Whig government which the electorate felt they could not trust.

Lubbock may have failed in the election but men of science had united in their support of him, not as a Whig, although most were of that political persuasion, but as a representative of Science. Royal Society Secretary, John George Children, while expressing disappointment at the news that Lubbock was retiring from the contest, was in other

¹²⁴ *The Age*, 16 December 1832.

¹²⁵ Butler to Lubbock, 16 December 1832, Royal Society Lubbock Collection B 622.

¹²⁶ Clarke and Hughes, *The Life and letters of the Reverend Adam Sedgwick*, p. 399.

¹²⁷ *Ibid.*

¹²⁸ Richard Sharp to Lubbock, 29 Nov 1832, Royal Society Lubbock Collection S98.

respects pleased that he had not been elected. In a letter expressing what appears to be genuine warmth he wrote: 'As far as regards the University of Cambridge, I read with regret your advertisement in the Times of this morning – as far as regards science and yourself, with pleasure'. 'Airy's and Herschel's letters are imperishable records of a well-earned fame!', he added as a postscript.¹²⁹ On 13 December, Lubbock was, once again, chairing a meeting of the Royal Society, listening to a paper from Sir James South being read, entitled: 'On the extensive atmosphere of Mars'.¹³⁰

A postscript to the story of the election is provided by a dinner held on December 20 when the 'friends of Mr Babbage dined together' following his defeat in the election for Finsbury.¹³¹ Robert Grant and Robert Spankie, two 'official' Whig candidates each with family connections to the directorate of the powerful East India Company, had been elected. 'Among the literary and scientific characters present at the dinner', *The Times* reported, were 'Sir John Herschel, Sir N H (Harry) Nicolas, Mr Lubbock, Mr Brunel etc'. Babbage is quoted as saying that, in spite of his disappointment, he was 'happy and proud that some of the earliest of his friends were now present to join those whom he had acquired from political circumstances. One (Sir John Herschel) was a friend from his earliest youth when they were both admirers of liberty and knowledge; another friend (Mr Lubbock) whose reputation was known on the continent of Europe had added respect to the name of the British merchant'. Sir N H Nicolas, the report continued, observed that 'no circumstance could afford Mr Babbage so much pleasure as the rallying around him of some of the most eminent philosophers in the country. All animosities respecting the Royal Society were forgotten and they came forward to evince their respects towards him. His first attempt at reform was to

¹²⁹ John George Children to Lubbock, 10 December 1832, Royal Society Lubbock Collection C166.

¹³⁰ *Abstracts of the Papers communicated to the Royal Society of London from 1830 to 1837 inclusive* (London, 1837), p. 158.

¹³¹ *The Times*, 21 December 1832.

reform the Royal Society; yet the Vice President and Treasurer of that Society was now present'. Lubbock is reported as saying that with respect to the Royal Society 'his friend Mr Babbage in any animadversions on that Society had been only guided by that view he had always adopted of making that Society useful to the public at large; and the Society were most anxious to consider and promote anything which could be generally beneficial'. Out of shared election disappointment had come the beginnings of reconciliation between Babbage and a Royal Society embodied by John William Lubbock.

The Age continued to poke fun at Lubbock, a figure considered significant enough to be lampooned:

"I should like" said old Harry Nicolas at Babbage's consolation defeat dinner, the other day, "the East India Company to deny their interference on Mr Serjeant Spankie's behalf". "Pooh!" observed Lubbock, "you know on such a point they would be sure to *keep their own counsel*." Herschel, on hearing this, got out a telescope, to have a nearer view of Lubbock, as it was the first time he had ever heard him utter a joke.¹³²

3.7 Concluding remarks

Lubbock was not elected as Representative for the University of Cambridge in 1832. Astronomer William Parsons retired as an MP at the 1834 dissolution – ironically, to concentrate on his astronomy – and parliaments, as bemoaned recently in the Royal Society's science policy blog, continue to this day to contain few, if any, representatives from the sciences.¹³³ Over the next 50 years in the University of Cambridge constituency there would be just four contested elections and all the members returned during this period would be Conservatives. After Lubbock's death his son John, 4th Baronet, standing as a Liberal, *was* elected to represent a University: not Cambridge or Oxford, but the University

¹³² *The Age*, December 23 1832.

¹³³ *In Verba*, 15 May 2015, (London: Royal Society).

of London which had been established in response to the continuing refusal of the ancient universities to allow Dissenters to graduate, and which his father had done so much to set up (see Chapter 5). Sir John Lubbock, 4th Baronet, would represent the University of London constituency from 1880 until 1900. In 1867, when the constituency was created, and echoing the events of 1832, an attempt was made by influential members of the British Association (William Thomson, Charles Wheatstone, John Tyndall and others) at its Dundee meeting to get Lubbock adopted as a candidate, 'an opportunity thereby being afforded of obtaining for science a representation in the House of Commons'.¹³⁴ He did not stand on this occasion however.

In the grand scheme of things, the poll that never took place cannot be considered a significant event. However, as regards the History of Science, the episode allows some important and firm conclusions to be drawn. Lubbock's position as a leader within the scientific community is confirmed by the statements of his peers. Lubbock's high status as a man of science, including in the perception of the general public, is confirmed by the numerous reports in the newspapers. The evidence from these primary sources alone would argue for a significant reappraisal of the current view of Lubbock's importance within the scientific world of the early 1830s.

¹³⁴ *The Times*, 11 September 1867.

Chapter 4. The pathway to coexistence: The Royal Society and the new British Association

4.1 Introduction

On Wednesday, 31 August 1881, the President of the British Association for the Advancement of Science delivered the Address at the Fiftieth Anniversary Meeting, held, like the first, at York. The President was Sir John Lubbock, Bart, who had succeeded to the baronetcy on the death of his father, John William, in 1865. Reflecting on the past history of the Association, Sir John began by turning to the Report of the First Meeting held in 1831. ‘. . . the first volume’, he stated, ‘commences with a Report on Astronomy by Sir G. Airy; I may be pardoned, I trust, for expressing my pleasure at finding that the second was one by my father, on the Tides’.¹ Sir John was assuming that this implied his father’s support for the nascent organisation and his active participation in its inception. In fact, in 1831, his father, the senior Vice -President of the Royal Society, was firmly opposed to the formation of the new organisation, suspicious of possible intentions that it should supplant the senior institution. In addition, the Association’s request for a report from him on the state of knowledge concerning the Tides represented an unwelcome intrusion into Lubbock’s self-funded and original research which had already established the young physical astronomer as a significant scientific figure nationally. However, by the year of Sir John’s birth, 1834, the British Association was already settling into peaceful and complementary coexistence with the Royal Society which had remained, and would continue to remain, the country’s pre-eminent scientific organisation. His father, moreover, was now a member of the British Association Council and had been the recipient of the Association’s first ever grant – £200 for the reduction of tidal observations. This chapter will examine how the harmonious relationship between the two institutions came about and how, in consequence, the

¹ *Report of the Fifty-First Meeting of the British Association for the Advancement of Science* (London: John Murray, 1882), p. 1.

character of the British Association was shaped and that of the Royal Society modified. It will also attempt to identify precisely what it was that the Royal Society provided for science that the new Association could not (or chose not to attempt to) replicate, thus ensuring the primacy of the older body. For Sir John Lubbock, speaking in 1881, the close links between the two bodies represented the long-established state of affairs: his close colleague, William Spottiswoode, had even been the President of both organisations at the same time just three years previously. In the beginning, however, this outcome would have seemed unlikely and we must look to the events of the early 1830s to understand how it came to be.

It was pointed out by Colin Russell that the word 'association' had 'evocative overtones', identified, as it often was in the 1820s and 1830s, with the new trades unions.² Indeed, examination of journals such as the *Poor Man's Guardian* and the *Mechanics Free Press* for 1831 reveals the existence of several 'British Associations' to which members of the lower orders might become affiliated.³ It was therefore not wholly surprising, Russell suggested, 'that the proposal for an association of scientists received a cool reception from certain bastions of established thought'.⁴ *Association*, however, was most probably chosen because it came closest to expressing the meaning of the German *Gesellschaft*, for it was a German initiative of the 1820s, the establishment of the *Gesellschaft Deutscher Naturforscher und Ärzte*, which was the stimulus for the founding of the British Association.⁵ David Brewster is credited with having had the idea and it is he who seems to have been the first to use the term 'British Association', this in correspondence of February 1831.⁶ The body

² Russell, C.A., *Science and Social Change* (London: Macmillan, 1983), pp. 186-187.

³ 'British Association of Trade and Benefit Societies', *Poor Man's Guardian*, 30 July 1831; 'British Association for Promoting Co-operative Knowledge', *Mechanics Free Press*, 2 April 1831.

⁴ Russell, *Science and Social Change*, p. 187.

⁵ Cardwell, D.S.L., *The Organisation of Science in England* (London: Heinemann, 1957), p. 59. The 'Gesellschaft Deutscher Naturforscher und Ärzte' had been founded in 1822.

⁶ Brewster to John Phillips, 23 February 1831, as printed in Morrell, J.B. and Thackray, A., *Gentlemen of Science. Early Correspondence of the British Association for the Advancement of Science* (London: Royal Historical Society, 1984), p. 33. 'It is proposed to establish a British Association of men of science' Brewster told Phillips.

that emerged from Brewster's proposal – the British Association for the Advancement of Science – would not, however, threaten the established order generally.⁷ The only 'bastion' to which the new body might pose a threat would be the Royal Society.

'A positive reaction to the dilettantist state of the Royal Society', Donald Cardwell stated in 1959, 'was the formation in 1831 of the British Association'.⁸ No such suggestion, however, is to be found in the earliest account of its foundation, that of O.J.R. Howarth from 1922, which, while noting the influence on Brewster of Babbage's published concerns about the state of science, fails to connect the event with dispute at the Royal Society.⁹ This view would seem to have originated with George Foote, writing in 1951, who stated that 'out of this agitation concerning the Royal Society a new scientific group developed, the British Association for the Advancement of Science'.¹⁰ A decade later, L. Pearce Williams's expressed this opinion more strongly: 'the B.A. grew out of two factors: the changing attitude of many scientists . . . towards their calling and the election of H.R.H. the Duke of Sussex as President of the Royal Society'.¹¹ 'In short', he stated in summary, 'the B.A. was the direct reaction of the Royal Society reformers to their defeat by the amateurs'.¹² Later work however, firstly that of A.D. Orange followed by the comprehensive and in-depth study of Jack Morrell and Arnold Thackray, has shown this to be a simplistic explanation of a complex issue.¹³ These authors highlight instead the role of Rev. William Vernon Harcourt, founder of the Yorkshire

⁷ Morrell, J.B. and Thackray, A., *Gentlemen of Science: Early Years of the British Association for the Advancement of Science* (Oxford: Oxford University Press, 1981), pp. 81-82. The full name appears for the first time in 'a plan for the constitution and conduct of the proposed British Association for the Advancement of Science', presented by Vernon Harcourt to the Council of the Yorkshire Philosophical Society on 19 September 1831, one week before the Association's first meeting.

⁸ Cardwell, *The Organisation of Science in England*, p. 59.

⁹ Howarth, O.J.R., *The British Association for the Advancement of Science: A Retrospective, 1831-1921* (London: British Association, 1922), pp. 3-7, 12-15.

¹⁰ Foote, G.E., 'The Place of Science in the British Reform Movement 1830-1850, *Isis* 42 (1951) p. 199

¹¹ Williams, L.P., 'The Royal Society and the Founding of the British Association for the Advancement of Science', *Notes and Records of the Royal Society of London* 16 (1961), p. 221.

¹² *Ibid.*, pp. 230-231.

¹³ Orange, A.D., 'The Origins of the British Association for the Advancement of Science', *British Journal for the History of Science* 6 (1972), pp. 152-76; Morrell and Thackray, *Gentlemen of Science: Early Years*, pp. 36-94.

Philosophical Society and fourth son of the Archbishop of York, in realising Brewster's dream and bringing the Association into being.

It was Harcourt who drew up 'a plan for the constitution and conduct of the proposed British Association for the Advancement of Science' which was adopted at the first meeting on 27 September 1831.¹⁴ His vision, going beyond Brewster's idea of loose union of men of science, was for a 'more extensive and permanent utility'.¹⁵ Some years later, Vernon Harcourt would say of his role that 'Brewster first proposed that a craft should be built wherein the united crew of British Science might sail . . . but for myself I must be allowed to claim that I manned the ship, that I constructed her charts, and piloted the vessel for six years'.¹⁶ To develop what is a particularly appropriate nautical analogy, it might be said that by the mid- 1830s, the Association ship would find a permanent berth alongside but separate from that of the Royal Society which, although it had given up some of its moorings to accommodate the new craft, remained the flagship of the nation's science. That the new Association was a potential rival to the Royal Society is not a theme that is explored in any depth by Morrell and Thackray in their authoritative text, viewing as it does the scientific world of the 1830s very much from a British Association perspective. This chapter, therefore, adds a Royal Society dimension to the story of the Association's foundation and early years. Lubbock is a central character for two reasons. Firstly, because of the influential position he occupied at the Royal Society as it came to terms with the new body; secondly, because he was engaged in scientific work of great utility – the theory of the Tides, exactly the type of work with which the new organisation needed to associate itself.

¹⁴ Morrell and Thackray, *Gentlemen of Science: Early Years*, pp. 81-82.

¹⁵ Orange, 'The Origins of the British Association', p. 176; Harcourt to Lord Milton, 30 August 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early: Early Correspondence*, p. 49.

¹⁶ Orange, 'The Origins of the British Association for the Advancement of Science', pp. 175-76.

4.2 The new Association's relationship with the Royal Society

On 21 February 1831, Brewster wrote to Babbage suggesting 'a meeting of British men of science at York in July or August next'.¹⁷ Just three months previously, the Royal Society had elected the Duke of Sussex as its President, rejecting, in the process, Herschel. Brewster had been arguing for the creation of an association of scientific men for at least two years, but this election defeat, as his letter shows, was the catalyst for his writing to Babbage at this time.¹⁸ 'Will you give the idea a serious consideration', Brewster urged Babbage, 'and write about it to Mr Herschel who should be President? The Royal Society of London seems to be gone . . . This is therefore the time for a general effort'.¹⁹ However, the Royal Society had not 'gone'. As has been shown in Chapter 2, Lubbock had already persuaded the Council that it should embark on a series of reform measures, most notably, the setting up of a Charter and Statutes Committee, as approved on 16 December 1830. While leading reformers such as Babbage, Baily, Fitton, Herschel and Whewell refused to serve on Lubbock's Committee, many influential figures did agree to do so. These included, most significantly, one who would become the British Association's most enthusiastic and loyal servant: geologist Roderick Impey Murchison. By early July 1831, when Yorkshire Philosophical Society Secretary, John Phillips sent a circular inviting 150 'Friends of Science', (including Lubbock), to attend the Association's first meeting, six Royal Society committees were working on a widespread revision of old practices and the Charter and Statutes Committee was about to deliver its draft report.²⁰ Contrary to what Brewster appears to have been suggesting to Babbage, there never was, it seems, a window of opportunity for the creation of a body to

¹⁷ Brewster to Babbage, 21 February 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 33.

¹⁸ Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, pp. 23-27. See Brewster to Henry Brougham, 14 March 1829, Brewster to Babbage, 12 February and 16 June 1830.

¹⁹ Brewster to Babbage, 21 February 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 33.

²⁰ Morrell, J.B. and Thackray, A., *Gentlemen of Science: Early Years*, pp. 544-45. Phillips's circular was sent on 5 July 1831. The Charter and Statutes Committee reported to the Royal Society Council on 28 July 1831.

supplant the Royal Society. What *was* at issue was whether the new organisation could recruit Society Fellows to its cause, this being essential for its viability, and exactly what kind of relationship the new institution would have with the old.

Two weeks before the York Meeting Murchison was not confident that Harcourt would be able to 'enlist any of the splendid names (Herschel, Whewell and co)'.²¹

. . . I very much doubt whether you would obtain any real or permanent assistance from the philosophers of the metropolis or the universities, because I fear they might be led to think, that however good the intention of the projectors, and however brilliant the launch of such a scheme, it might eventually and in other hands become an *imperium in imperio*.²¹

None of the leading reformers attended the first meeting of the British Association, held 26-31 September 1831, although Whewell agreed to be appointed Vice-President elect for the following year and to provide a report for the Meeting. Herschel expressed particularly negative opinions: 'I see nothing in an overwhelming mass of mediocrity which can direct or encourage or stimulate those who would naturally lead the way without them, but much to embarrass and distract, and retard them in their progress'.²² 353 'Gentlemen' did attend the York meeting although the Universities and the Metropolis were poorly represented.²³ Royal Society President, the Duke of Sussex had been invited to 'honour the Meeting with his presence' and would have been asked to take the chair in the first session had he done so.²⁴ He had written, however, as Harcourt explained to the gentlemen assembled on the first

²¹ Murchison to Harcourt, 13 September 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 61.

²² Herschel to Harcourt, 5 September 1831 and Herschel to Whewell, 20 September 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, pp. 55, 66.

²³ Morrell and Thackray, *Gentlemen of Science: Early Years*, p. 39.

²⁴ Harcourt to Lord Milton, 30 August 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 49.

morning, to explain that he was ‘unfortunately pre-engaged’.²⁵ Harcourt made a point of reading out the Duke’s letter, containing, as it did, broadly supportive comments:

‘. . . be so kind as to express my regret on the occasion, accompanied by my best wishes for the success of so praiseworthy an object, and an assurance on my part, of my warm co-operation in promoting any measure which may be suggested, and sanctioned by such a respectable Meeting.’²⁶

Harcourt continued with a detailed ‘exposition of the Objects and Plan of the Association’ in which he disclosed what would be the institution’s full name and set out his vision for its future role – ‘to give a stronger impulse and more systematic direction to scientific enquiry’.²⁷ ‘I am not aware, Gentlemen,’ he stated, ‘that in executing such a plan we should intrude upon the province of any other Institution’.²⁸ Harcourt next reminded his audience of the Baconian origins of ‘the eldest of our scientific Institutions’.²⁹ ‘The foundation . . . of the Royal society’, he stated, ‘was an attempt to reduce to practice the splendid fiction of the New Atlantis’, this being Bacon’s utopian vision of the future, one in which human discovery was based on the ‘true method of interpreting nature’.³⁰ ‘The chief Interpreters of nature have always been those who grasped the widest field of inquiry’, Harcourt added here echoing Bacon’s avowal that he had ‘taken all knowledge to be my province’.³¹ Harcourt’s principal difficulty would be that the encouragement of scientific research had always been the province of the Royal Society of London for *Improving Natural*

²⁵ *First Report of the Proceedings, Recommendations and Transactions of the British Association for the Advancement of Science* (York: Thomas Wilson 1832), p. 9.

²⁶ *Ibid.*

²⁷ *Ibid.*, p. 11.

²⁸ *Ibid.*, p. 12.

²⁹ *Ibid.*, p. 13.

³⁰ *Ibid.*, pp. 13-14.

³¹ *Ibid.*, p. 19; Francis Bacon to Lord Burghley (c.1593) quoted in Spedding, J., Ellis, R.L. and Heath, D.D. (eds), *The Works of Francis Bacon, Baron of Verulam, Viscount St Albans and Lord High Chancellor of England* vol. 8 (Boston: Houghton Mifflin, 1870), p. 109.

Knowledge, even if, in the opinion of many, it had signally failed to do so for over a century.³² Little of note had been done since Newton's time, other than promoting a few expeditions to observe natural phenomena or responding to the occasional government request for advice on some important scientific question.³³ It was into this neglected Royal Society domain that Harcourt, notwithstanding his assurances to the contrary, was proposing to 'intrude'. 'It must be admitted', Harcourt explained in justification, 'that the Royal Society no longer performs the part of promoting natural knowledge by any such exertions as those we propose to revive. As a body, it scarcely labours itself, and does not attempt to guide the labours of others'.³⁴ Harcourt's concluding words sought to reassure existing Societies and appealed for co-operation:

We have no time, if we wished it, to encroach upon the office, or to drain away the scientific resources of any other Society. The enlightened institutions with which it hopes to be associated will regard it, therefore, not as a rival, but a coadjutor. . . It must undoubtedly fail, if it meets only with imperfect co-operation and cold support.³⁵

Harcourt was careful to explain the sense in which he was using the term *coadjutor* (assistant) – 'as a steam engine has been to all other kind of mechanism, in every mine and in every factory' but, as the clergyman son of an Archbishop, he would have been aware that in the Church it denoted an assistant to a Bishop, usually one who would be that Bishop's successor. Contrary to Harcourt's declaration, for his new association to be successful it would need to 'drain away the scientific resources' of the Royal Society – its Fellows.

³² Hall, M.B., *All Scientists Now: The Royal Society in the Nineteenth Century* (Cambridge: Cambridge University Press, 1984), ix. The name of the institution as given in the second charter of 1663.

³³ Hall, *All Scientists Now*, pp. 12-14; Lyons, H.G., *The Royal Society 1660–1940: A History of its Administration under its Charters* (Cambridge: Cambridge University Press, 1944), p. 195.

³⁴ *First Report of the Proceedings, Recommendations and Transactions of the British Association for the Advancement of Science*, p. 18.

³⁵ *Ibid.*, p. 34.

Harcourt, while highlighting of the Royal Society's dereliction of duty regarding the promotion of science, nevertheless acknowledged its continuing importance:

It still embodies in its list every name which stands high in British science; it still communicates to the world the most important of our discoveries; it still crowns with the most coveted honours the ambition of successful talent, and when the public service requires the aid of philosophy, it still renders to the nation the ablest assistance and the soundest counsel.³⁶

Harcourt's analysis is a useful starting point for consideration of the position of pre-eminence which the Royal Society had come to occupy. The discussion which follows will be illustrated with special reference, where appropriate, to the Association's prime mover, David Brewster, who owed his prominent position in the scientific world, in no small part, to continuing Royal Society recognition of his work on experimental optics.

In the first half of the nineteenth century Royal Society Fellowship represented the acme of achievement for the man of science; it bestowed upon the individual an enduring status in the scientific world. Reformers within the Royal Society criticised the 'too indiscriminate an admission' which had, since the beginning of the century, seen gentleman members, not themselves actively engaged in science, proposing more such individuals in increasing numbers.³⁷ Election certificates reveal, however, that it was usual for the more significant men of science to have been put forward by scientific Fellows of some standing.³⁸ David Brewster's election certificate of 1815, for example, reveals that he was proposed by six senior figures from various scientific disciplines (with the son of a Duke thrown in for good measure) who, using the customary form of words, recommend him on their 'personal

³⁶ *Ibid.*, p. 18.

³⁷ Minutes of the Council of the Royal Society, 1 March 1827, Royal Society Archive CMO/10. The words were those of James South.

³⁸ See, for example, the election certificates of Charles Babbage, Francis Baily, Michael Faraday, William Fitton, John Herschel, Roderick Impey Murchison, Adam Sedgwick, James South, William Whewell. Royal Society Archive EC/1815/32, EC/1820/23, EC/1823/15, EC/1815/08, EC/1813/05, EC/1825/32, EC/1820/17, EC/1820/22, EC/1819/37.

knowledge' as deserving of the 'honour'.³⁹ Fellows, by signing publicly to propose a candidate, thus accepted responsibility for his being suitable. Harcourt's names who stood 'high in British Science' had been placed there by peers already occupying that lofty position. A semblance of objectivity in this process was provided by reference on the certificate to scientific accomplishment; work published in a reputable journal, ideally in the Society's *Philosophical Transactions*, greatly facilitated a successful outcome. It is significant that in 1814, the year before Brewster's election, he was the author of four out of the thirty-three papers published in the *Phil.Trans.*⁴⁰

It was through the publication of papers that men of science competed for status within the scientific world. This competition was taking place largely within a system of academic or 'open' science. In such a system, as Max Albert explains, ideas are not protected by intellectual property rights; contributions are published and ideas used 'free of charge'.⁴¹ In 'open science', it is the scientific community itself, Albert suggests, which decides about a contribution's success. The success of researchers, therefore, depends on decisions of their peers.⁴² Ideas of 'open science' emerged, Paul David believes, in the early seventeenth century representing a break from the dominant 'ethos of secrecy' and leading to the development of a 'distinctive reward system based upon priority of discovery'.⁴³ In David's view, early academies, such as the Royal Society or the Académie Royal des Sciences, accommodated the needs for 'social legitimization' and 'theatres of disclosure' where the

³⁹ David Brewster election certificate, Royal Society Archive EC/1815/15. Brewster's certificate was written out by John Playfair, professor of Natural Philosophy at Edinburgh University and signed by Sir John Hall (geologist), Stephen Groombridge and John Pond (astronomers), Edward Troughton (manufacturer of astronomical instruments), John Rennie (engineer) and the amateur geologist Lord Webb Seymour.

⁴⁰ *Philosophical Transactions of the Royal Society of London* 104 (1814), pp. 1-609.

⁴¹ Albert, M., 'Introduction' in Albert, M., Schmidtchen, D. and Voigt, S. (eds), *Scientific Competition* (Tubingen: Mohr Siebeck, 2008), p. 1.

⁴² *Ibid.*, p. 2.

⁴³ David, 'Understanding the Emergence of "Open Science" Institutions: Functionalist Economics in Historical Context', *Industrial and Corporate Change* 13 (2004), pp. 571, 575. 571-89.

'public *repute*' of natural philosophers might be enhanced.⁴⁴ Whatever may have been the origins of the system, by the start of the nineteenth century it was at the Royal Society that the reputation of the British man of science could be truly validated, and this increasingly by means of *publication*. As the members of the 'Publishing the *Philosophical Transactions* Project' have commented: publication was to become 'the measure of reputation'.⁴⁵

Both Albert and David draw on Robert Merton's classic study of the development of 'institutional norms' and 'reward systems' of science, seeing researchers within academic science as possessing a moral right to have their priority recognised and to be cited by those using their results.⁴⁶ Priority, as Nicolas Carayol observes, therefore became part of a 'specific reward system' in which the scholar's 'credit' within the peer community increased through being recognised as an 'intellectual proprietor of knowledge'.⁴⁷ Merton noted the 'great frequency with which the history of science is punctuated by disputes . . . over priority of discovery'.⁴⁸ Within institutions such as the Royal Society the assignment of priority, he suggested, came to be seen as a 'moral issue' with the 'expression of disinterested moral indignation' signifying that a social norm had been violated.⁴⁹ He offered as a particular example Faraday's 1821 dispute with William Hyde Wollaston, (or, more accurately, friends of Wollaston), concerning experimental work on electromagnetic rotation.⁵⁰ Merton saw recognition of priority as a 'mechanism of social validation' operating to reward those being the first to make significant discoveries and leading men of science to strive for such

⁴⁴ Ibid., p. 584.

⁴⁵ Fyfe, A., McDougall-Waters, J. and Moxham, N., '350 Years of Scientific Periodicals', *Notes and Records of the Royal Society of London* 69 (2015), p. 232.

⁴⁶ Merton, R.K., *The Sociology of Science: Theoretical and Empirical Investigations* (Chicago: University of Chicago Press, 1973), pp. 281-559.

⁴⁷ Carayol, N., 'The Economic Advantage of Academic Competition: Dynamic Incentives and Endogenous Cumulative Advantages', in Albert, M., Schmidtchen, D. and Voigt, S. (eds), *Scientific Competition* (Tubingen: Mohr Siebeck, 2008), p. 179.

⁴⁸ Merton, *The Sociology of Science*, pp. 286-87, 293, 297.

⁴⁹ Ibid., p. 291-92

⁵⁰ Ibid., pp. 288, 291.

recognition by scientific peers.⁵¹ Brewster's concern about priority and the Royal Society's importance in establishing it is evident from his regularly sending from his home near Melrose, Scotland, 'notices' of unfinished experiments on light with a request that they should be 'deposited among the Society papers'.⁵² In December 1831, he wrote to Lubbock as follows: 'I take the liberty of troubling you as the Vice president of the Royal Society, with a sealed packet containing some new experiments in light, which you will oblige me by depositing in the Societies archives till I can find leisure to complete the study to which they lead'.⁵³

Merton also detected the operation of what he called the 'Matthew Effect' which saw greater 'increments of recognition' accruing to scientific contributions from those of 'considerable repute' while such recognition was withheld from those who had yet to 'make their mark'.⁵⁴ Contributions originating with an individual of 'high rank' would have a 'greater visibility' within the scientific community, he suggested.⁵⁵ This must be connected, also, with the greater likelihood that such contributions would appear in journals of high status. Anthony Van Raan's statistical model of competition through scientific publications shows status for a *publication* to be determined by the standing of the journal in which it appears.⁵⁶ In turn, high status *journals* are cited more frequently by other journals. Journal status has 'high stability', he suggests.⁵⁷ Although Van Raan's model was not developed for application to such an early period as that being studied here, it may go some way to explaining the enduring primacy of the Royal Society's *Philosophical Transactions*. That journal's position was further strengthened in the early 1830s when, as has been discussed in Chapter 2,

⁵¹ Ibid., pp. 305, 322, 339, 401.

⁵² Royal Society Miscellaneous Manuscripts: MM/10/174 – 10 November 1829, MM/10/175 – 9 January 1830, MM/10/176 – 15 January 1831, MM/10/177 – December 1831, Royal Society Archive.

⁵³ Brewster to Lubbock, December 1831, Royal Society Lubbock Collection B 423.

⁵⁴ Merton, *The Sociology of Science*, p. 446.

⁵⁵ Ibid., p. 447.

⁵⁶ Van Raan, A.F.J., 'Competition amongst Scientists for Publication Status: Toward a Model of Scientific Publication and Citation Distributions', *Scientometrics* 51 (2001), p. 347.

⁵⁷ Ibid., p. 348.

Lubbock introduced the peer review of papers and instituted the *Proceedings of the Royal Society*, published every three months, November – July, and including abstracts of papers read.

As Association founder Harcourt remarked, the Royal Society communicates ‘to the world the most important of our discoveries’. A noted beneficiary of this had been David Brewster, awarded, by the Institut de France in 1816, a half share of the 3,000-franc prize for physical science. This award had come on the heels of his having been awarded the Royal Society’s highest honour: the Copley Medal in 1815. Brewster had gone on to receive the Rumford Medal in 1818 and the Royal Medal in 1830. Harcourt needed to look no further than Brewster in support of his assertion that the Royal Society ‘still crowns with the most coveted honours the ambition of successful talent’. Nevertheless, this was Royal Society ground on which Harcourt proposed to encroach by ‘offering PRIZES’ although these would be ‘for particular investigations’ to advance science ‘in *determinate lines of direction*’. The idea however, although raised repeatedly by him, was never taken up.⁵⁸

The success of the Association meetings would, as Harcourt later acknowledged, ‘depend entirely on the continued presence and concurrence of the *master-spirits* of science; . . . the persons whose attendance, from the value of their time, it is most difficult to secure’.⁵⁹ If the meetings were ‘left to men of second-rate acquirements’, they would ‘speedily fall into contempt’.⁶⁰ Harcourt’s ‘*spirits*’ did not emerge from the ether, however. These men were a product of a system which had identified them as deserving of recognition;

⁵⁸ *First Report of the Proceedings, Recommendations and Transactions of the British Association* (York: Thomas Wilson, 1832), p. 32; Harcourt to Babbage, 27 August 1831, as printed in Morrell and Thackray, *Gentlemen of science: Early Correspondence*, p. 45; Council Minutes, 22 May 1833, British Association Archive. c.f. Chapter 2 – The Royal Society was at this time in the process of considering and then rejecting the idea of Prize Questions for its Royal Medals.

⁵⁹ ‘Official Report of the Proceedings of the British Association for the Advancement of Science, at the Dublin Meeting, August 1835’, *The London and Edinburgh Philosophical Magazine and Journal of Science* 7 (London, 1835), p. 291.

⁶⁰ *Ibid.*, p. 292.

the chief arbiter of this process was the Royal Society with whom many of the key individuals were closely associated. Harcourt's speech at York, according to Susan Cannon, 'committed the Association to deliberately avoid any kind of competition with the Royal Society' but his new Association would have to compete for their services of the Society's most eminent Fellows if it were to succeed.⁶¹

4.3 Enlisting Fellows of the Royal Society

With the York Meeting concluded, Harcourt was anxious that the *Report* being prepared for printing should include the names of as many new members as possible, even if they had not actually been present. Any recruits from the Royal Society whom Murchison might enlist would be particularly valuable. Harcourt would have been surprised to hear from Murchison on 5 December 1831 that he was 'one of the new Council of the Royal Society'.⁶² As has been shown in Chapter 2, an initially reluctant Murchison had been persuaded to serve by Lubbock. Almost apologetically, Murchison explained to Harcourt:

'For my own part I was one of the extreme dissidents, and had quite made up my mind to the uncomfortable doctrine that the old lady Royal Society was doomed to die from atrophy; but when I found the attitude which the Duke of Sussex with great good sense and moderation had assumed, I began to change my notions'.

'With regard to recruits for our association . . . there are objectors, as I have often told you, and many men in the Royal Society (such as Lubbock and others) think there are already too many societies and of this party HRH the President is very likely to form one'.⁶³

A disappointed Harcourt wrote in reply:

⁶¹ Cannon, S. F., *Science in Culture: The Early Victorian Period* (Folkestone: Dawson, 1978), p. 202.

⁶² Murchison to Harcourt, 5 December 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 112.

⁶³ *Ibid.*

‘it is not a bad thing for the Association to have a friend or two in the Council of the Royal Society . . . I am afraid, however, that your return to what you irreverently call the old Lady has damped your ardour for the service of a young Mistress, for though I had less expectation from London than any other part of the King’s dominions I did expect a few names from thence for our *Report*’.⁶⁴

In fact, in addition to Murchison, the Association had three more ‘friends’ on the new Royal Society Council elected in November, 1831. These were British Association President elect, William Buckland, Vice-president elect, William Whewell and Oxford Professor of Chemistry, Charles Daubeny. Daubeny was an enthusiastic supporter of the Association who had been the sole scientific representative of the Universities at the York Meeting and who was, as Murchison told the second Meeting, ‘the primary cause of the meeting being in Oxford’.⁶⁵

With the new Association just two months old, therefore, there was already a strong connection between the ruling bodies of the two institutions which set them on a path of co-operation rather than rivalry. It will be remembered that it was Lubbock, with assistance from the Secretaries and some input from the President, who was primarily responsible for determining the composition of the Royal Society Council. Although Lubbock was opposed at this time to the formation of the Association, it is surely more than a coincidence that the new body is represented so strongly on the Royal Society Council of 1831/32. In the first half of 1832, Murchison, Buckland, Whewell and Daubeny are all recorded as being among the small number of guests invited to dine at the Royal Society Club, a dining club of limited membership (President, Officers and thirty-five other Fellows) which met for dinner before the weekly Society meetings.⁶⁶ Another leading figure in the Association, Edinburgh Physicist, James David Forbes, was elected a Fellow of the Royal Society in June 1832. His election

⁶⁴ Harcourt to Murchison, 8, 15 or 22 December 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 118.

⁶⁵ *Report of the First and Second Meetings of the British Association for the Advancement of Science* (London: John Murray, 1833), p. 108.

⁶⁶ Geikie, A., *Annals of the Royal Society Club* (London: Macmillan, 1917), p. 309.

certificate was signed, amongst others, by Murchison, Whewell and Daubeny and the first proposer, responsible for writing out the certificate, was David Brewster.⁶⁷ Lubbock chaired the Royal Society meeting (15 March, 1832) at which the Certificate was read to the Fellows.⁶⁸ Some months before the Association's second meeting in the June of 1832 therefore, it is clear that leading figures within it had been persuaded to continue active involvement with the Royal Society. In consequence, serious rivalry never became an issue.

Murchison's letter of 5 December, 1831 (above), is the first indication that Lubbock, the leading figure in the Royal Society, is opposed to the formation of the British Association. In this respect, he is the only individual mentioned by name at any stage. In spite of Murchison's efforts, the membership list included in the Association's *Report* which was eventually published in February 1832, would contain few 'London names' who were not Geologists. The only Royal Society name of any significance which appears is that of former President Davies Gilbert, although he did not actually attend the first meeting.⁶⁹ The importance attached to enlisting Royal Society officers is illustrated by Murchison's letter to Harcourt of 12 March, 1832, in which he was pleased to relate that he had 'previously been authorised by Mr Children the Junior Secretary to add his name', and that he had 'today written to Roget, the other Secretary to enlist him if possible'.⁷⁰ Vice-President Lubbock remained opposed to the formation of the Association, however. 'I had some time since a most unsatisfactory note from Mr Lubbock who seems to look with a jealous eye as Vice-

⁶⁷ Election Certificate: James David Forbes, Royal Society Archive EC/1832/23; Shapin, S., 'Brewster and the Edinburgh Career in Science', in J.R.R. Christie and A.D. Morrison-Low (eds), *Martyr of Science: Sir David Brewster 1781-1868* (Edinburgh: Royal Scottish Museum, 1984), p. 19. Soon, however, Brewster would lose out to Forbes in the contest for the chair of Natural Philosophy at Edinburgh University (see p. 176) and personal relations between them would be, as Steven Shapin notes, 'frozen for several years'.

⁶⁸ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive* (London, 1837), pp. 107,126.

⁶⁹ *First Report of the Proceedings*, p. 103.

⁷⁰ Murchison to Harcourt, 12 March 1832, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 136. John George Children and Peter Mark Roget were the two Royal Society Secretaries.

president Royal Society on the Association', Forbes informed Harcourt in January 1832.⁷¹ 'I wrote a few lines on the subject to Murchison and begged him to try and put Mr Lubbock aright on this point'. In early March, 1832, Brewster, now armed with copies of the *Report*, ('both Forbes and I . . . are delighted with it'), was in London hoping that it would 'open the eyes of many prejudiced persons here'.⁷² His subsequent letter to Harcourt sets out what he believes to be Lubbock's position regarding the British Association.

'I understand that the Duke of Sussex regards it as injurious to the Royal Society but I could not say on good authority that this is the case . . . I have had, however, discussions with the Vice-president, Mr Lubbock, the ablest member of the Council and can state to you his views . . . he asserted that through the Duke of Sussex's influence they *could* do more for scientific interests than we could. He said that nobody could form an idea of the difficulty of obtaining proper persons to do the business of the Royal Society, that the indifference of members was great, and that the occupation of the time of the leading members of the Royal Society with the business of the Association would prevent them from working for the Royal Society. This I believe is the real source of hostility to the British Association'.⁷³

Murchison, too, had heard that the Duke 'was not favourably disposed to the British Association'.⁷⁴ He requested, and was granted, an audience at which he presented the President with a copy of the *Report*, taking the opportunity at the same time to expound upon some of the objects. 'He cordially assented to *all the doctrine*', Murchison explained to Harcourt on 12 March 1832, 'and authorized me to inscribe his name in the list of members, saying he would do all he could to forward our views. . .'.⁷⁵ There is nothing in these remarks of the Duke's, or in his earlier remarks, to indicate that he was opposed to the formation of the Association. Indeed, in April 1832, he accepted Buckland's invitation to attend the second

⁷¹ Forbes to Harcourt, 13 January 1832, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 122.

⁷² Brewster to Harcourt, 4 March 1832, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 133.

⁷³ *Ibid.*

⁷⁴ Murchison to Harcourt, 12 March 1832, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 135.

⁷⁵ *Ibid.*

Meeting (Oxford), only for illness to prevent him from doing so.⁷⁶ In contrast, it was Lubbock who was the principal figure in opposition. Lubbock did not attend the Oxford Meeting of June, 1832, and although he did, as requested, provide a report on the Tides it was read, in his absence, by Whewell. Many any men of science with whom Lubbock was acquainted, however, including several close colleagues, did attend the Second Meeting and become actively involved with the Association.

‘How then, and by whom, were the much higher-ranking scientists of the second and especially the third meeting persuaded into coming?’ This question was posed by Cannon in her discussion of the founding of the Association.⁷⁷ Morrell and Thackray, too, examined this at some length concluding, as does Cannon, that individuals were encouraged to join by the example of their peers, a process they describe as ‘competitive emulation’.⁷⁸ ‘A good list of names’ of members, such as Harcourt was anxious to secure after the first meeting, was a useful ‘propaganda device’, they suggested.⁷⁹ Cannon identified, also, the requesting of progress reports in the various disciplines as an important ‘recruiting tool’ – ‘It was a tempting offer to be asked to be the judge of all recent work in your field’.⁸⁰ But only, it should surely be added, if the person making the request was a figure of sufficient standing. The individuals who were approached were identified, not by Harcourt, but predominantly by Whewell who also agreed to deliver a report of his own.⁸¹ Being placed on a subject committee or, better still, being asked to chair one, functioned in a similar way: recognition by peers of an individual’s status. The Oxford Meeting’s Committees, (to be renamed

⁷⁶ Brewster to Harcourt, 28 April 1832, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 139.

⁷⁷ Cannon, *Science in Culture*, p. 214.

⁷⁸ Ibid.; Morrell and Thackray, *Gentlemen of Science: Early Years*, pp. 95-163. Quote from p. 122.

⁷⁹ Morrell and Thackray *Gentlemen of Science: Early Years*, p. 122.

⁸⁰ Cannon, *Science in Culture*, p. 215.

⁸¹ Whewell to Harcourt, 1 September 1831, and Harcourt to Whewell, 12 September 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, pp. 53-54, 60. Whewell suggested: Airy – astronomy, Brewster – optical science, Willis – sound, Powell – heat, Cumming – thermoelectricity, Lindley – botany. (Lindley’s report was not given until the Cambridge meeting). Whewell himself delivered a report on Mineralogy.

Sections the following year), were dominated by Fellows of the Royal Society. In Committee I for example, which was broadly pure mathematics and physics, thirteen out of the twenty-three members were FRS, including the Chairman, former Society President, Davies Gilbert. Eight members of the Royal Society Council for that year served on Association committees including Secretary Children, a member of the Chemistry, Mineralogy, Electricity and Magnetism Committee.⁸²

On the opening day of the Oxford Meeting, 27 June, 1832, it was announced that ‘a Council had been nominated to direct the affairs of the Association during the interval which would elapse before the next meeting of the General Committee’.⁸³ By the following month (July), as has been shown in Chapter 2, Lubbock was already working on a proposed list of members for the new Royal Society Council to be elected on 30 November.⁸⁴ Lubbock cannot have been unaware that his final list would include five men who were also on the first Council of the British Association: Brunel (M.I.), Clift, Green, Greenough and Murchison. In 1832/33 therefore, the British Association and Royal Society Councils would have roughly one quarter of their members in common. As table 4.1 shows, a similar situation would obtain in the remaining years of the decade during which Lubbock would serve on the Association Council in six out of the seven years.

⁸² The eight are Buckland, Children, Daubeny, Gilbert, Murchison, Peacock, Vigors, Whewell.

⁸³ *Report of the First and Second Meetings of the British Association for the Advancement of Science* (London: John Murray, 1833), p. 102.

⁸⁴ Children to Lubbock, 22 July 1832, Royal Society Lubbock Collection C 134.

1833/34 (24)	1834/35 (20)	1835/36 (20)	1836/37 (21)	1837/38 (16)	1838/39 (28)	1839/40 (28)
Buckland Clift Greenough Lubbock	Lubbock Murchison Peacock Roget	Buckland Christie Lubbock Murchison Roget	Baily Christie Greenough Lindley Lubbock Roget	Baily Christie Greenough Peacock Wheatstone Whewell	Baily Daubery Graham, T. Lubbock Wheatstone Whewell	Cavendish Daniell Lubbock Peacock Powell Sabine Sykes

Table 4.1 Men serving concurrently on both the RS Council and the BAAS Council, 1833 – 1840

RS Council of 21 each year. (-) = Number on BAAS Council.

It should be remembered, also, that these men, predominantly from the Metropolis, were by no means strangers to each other anyway. Brunel, Green, Greenough, Murchison and Lubbock, for example, had all been members of the Athenaeum Club since the year of its foundation (1824).⁸⁵ Indeed, Green, Greenough and Murchison were all Committee-men, as would be, from 1833, Lubbock, having been proposed by Greenough.⁸⁶ Harcourt, too, although visiting London only rarely, was a founder member of the Club; in 1833, another Association stalwart, Forbes, became one of the first members elected by the Committee, under Rule II, as being ‘of distinguished eminence in Science, Literature, or the Arts, or for Public Service’.⁸⁷ Between 1832/33, the year in which an Association Council came into operation, and 1839/40, 76 men served on the Council of the Royal Society. Of these, 31 also served on the Association Council at some stage in this period. Strong links between the governing bodies of the two institutions, therefore, existed from the earliest stage.⁸⁸

⁸⁵ Waugh, F.G., *Members of the Athenaeum Club, 1824 to 1887* (London, 1887).

⁸⁶ *Ibid.*; Greenough to Lubbock, 23 May 1833, Royal Society Lubbock Collection G126. Greenough, wrote to Lubbock asking if he might nominate him to fill a vacancy on the Committee, the members of which being ‘desirous of choosing some person distinguished in science’. ‘It will be very gratifying to me if you will permit me to nominate you’, Greenough told him.

⁸⁷ Waugh, *Members of the Athenaeum Club*.

⁸⁸ The Association Council had a different role however. Between 1832/33 and 1839/40, the Council met on 57 occasions under the chairmanship of no fewer than 23 different men. Meetings were concerned largely with administrative detail, principally practical matters arising from decisions

Two significant speeches were made at the Royal Society Anniversary dinner of November 1832. The Duke of Sussex, in his Presidential Address, lamented the 'want of establishments, in the country, for the exclusive and liberal support of men of learning and science', while praising the 'noble manner in which the British Association has been supported by the eager concurrence of the friends of science from all quarters of the Kingdom'.⁸⁹ Lubbock, in a speech which followed that of the President, told Fellows that the Duke of Sussex 'had brought the Society to a position which it could not have attained but for the judgement he had exercised and the influence his situation afforded'.⁹⁰ 'The Society now stood higher in the estimation of the public', he stated, and he hoped that 'every member would feel that the scientific honour of the Country was identified with the honour and character of this Society'. However, although he considered that the Society had 'contributed more than any other to the propagation of science', it was his belief that 'with regard to the alleged decline of science in the country, the President and Council were not responsible for the state of science in England; they had only to consider the papers presented to them, and had very little influence in originating questions'. The Royal Society's role, as Lubbock had made clear, was to uphold the honour and character of science, but not to direct it.

taken at the previous meeting and arrangements for the forthcoming meeting. As Cannon noted, the advancement of science rested with the 'autonomous' Sectional Committees coming together at each Meeting although the Presidents of these groups were chosen in advance by the Council. In contrast, the 141 Royal Society Council meetings held in this period were almost invariably chaired (on 138 occasions) by either the Presidents (Sussex and Northampton) or, more usually, the Treasurers (Lubbock and Baily). Lubbock, in spite of his not being Treasurer between 1835/36 and 1837/38, chaired 57 of these meetings. Royal Society Committees were appointed by and reported to the Council. Cannon, *Science in Culture*, p. 209.

⁸⁹ Abstracts of the Papers Communicated to the Royal Society of London *from 1830 to 1837 inclusive* (London, 1837), p. 144.

⁹⁰ *The Times*, December 1 1832.

4.4 The wooing of Lubbock

The *First Report of the Proceedings* of the BAAS Meeting at York in September, 1831, contains the following recommendation:

‘Theory of the Tides’

‘That J.W. Lubbock Esq. be requested to furnish a statement of the means which we possess, or which we want, for forming accurate tables for calculating the time and height of high water at a given place’.⁹¹

Lubbock had not attended the meeting, was not a member of the British Association and was probably unaware that a request was to be made until some weeks after the meeting. The inclusion of such requests for reports was a suggestion made by Whewell in a letter to Harcourt dated 1 September 1831: ‘The meeting at York might . . . select one or two of the most eminent men in Britain in each department of science, and might request them to draw up respectively a report upon their own subject. . . I will mention a few names that occur in connection with different subjects . . .’⁹² Whewell suggested that in Physical Astronomy, ‘the principal cultivators in our own country are, I think, Ivory, Airy and Lubbock’. In the event, twelve requests for reports in a range of subjects were made; Airy was asked to report on Astronomy and Lubbock on the Tides. Eleven of the requests are for reports on progress in broad areas, e.g., ‘that Professor Airy be requested to favour the Association with a report on the state and progress of Physical Astronomy’.⁹³ The request to Lubbock (above), however, asked for details of progress in research that he, and he alone, was undertaking. For the fledgling British Association, the attractions of a report from Lubbock, on the Tides, were manifold. Over the previous three years Lubbock had made genuine progress in using mathematical theory to predict the Tides. This was research with clear public utility. Having

⁹¹ *First Report of the Proceedings*, p. 47.

⁹² Whewell to Harcourt, 1 September 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p. 53.

⁹³ *First Report of the Proceedings*, p. 47.

largely funded this work himself, he was attempting, with limited success, to obtain funding from the Admiralty. In addition, as has been shown in earlier chapters, twenty-eight-year-old Lubbock was the rising star of Metropolitan science whose family were prominent in the social and business life of London. As Treasurer and senior Vice-President, he was the most influential figure within the Royal Society. Lubbock's pioneering work on the Tides and the British Association's later involvement with it are recounted in detail in Michael Reidy's *Tides of History*.⁹⁴ Morrell and Thackray also devote a number of pages to it in *Gentlemen of Science*.⁹⁵ However, with each text having a relatively narrow focus, neither seems to appreciate fully either the importance of Lubbock within the Royal Society, or his standing as a mathematician. The British Association was anxious not just to involve itself with Lubbock's work on the Tides, but also to recruit a highly influential name, a *master-spirit*, to its cause.

On 9 November, 1831, Harcourt wrote to Lubbock, on behalf of the Committee of the Association, to make an official request that he 'favour the next meeting of the association at Oxford with a report on the actual state of our information upon this subject (the height of the tides) and on the data remaining to be obtained in order that the Association may exert itself in order to procure them'.⁹⁶ Aware of Lubbock's probable reluctance, Harcourt offered an inducement: the possibility of obtaining what were apparently nearly thirty years of accurate observations of the tides at Liverpool.

Should you consent to draw up such a report the officers of the Association and the members of the Mathematical and Physical sub committee will have great pleasure in giving you any assistance which you desire in collecting the requisite information. Mr Forbes promises to communicate to you further particulars which he received from Mr Scoresby respecting the observations at Liverpool.

⁹⁴ Reidy, M.S., *Tides of History* (Chicago: The University of Chicago Press, 2008), pp. 136-40.

⁹⁵ Morrell and Thackray, *Gentlemen of Science: Early Years*, pp. 513-15.

⁹⁶ Harcourt to Lubbock, 9 November 1831, Royal Society Lubbock Collection H 55.

A few weeks later, Forbes informed Harcourt that 'I had a letter from Lubbock yesterday, not very satisfactory; but he seems to overlook the object of the Association in thinking we want to get what he gives to the *Philosophical Transactions* . . . ⁹⁷ The Association 'did not want his *discoveries*, but his *desiderata*', Forbes told Murchison.⁹⁸ Above all, however, the Association wanted to be able to display Lubbock's name and research prominently in their *Report*. A reluctant Lubbock was persuaded to accede to the request: 'J.W. Lubbock Esq has consented to furnish such information respecting the data and desiderata for calculating the time and height of high water as he may be able to offer', the *Report* was able to state.⁹⁹ However, as has been shown, Lubbock remained, at this time, opposed to the creation of the British Association.

Probably towards the end of 1832, perhaps persuaded by the support he had received from senior British Association figures in his unsuccessful Cambridge election campaign that November, Lubbock accepted the inevitable and decided to join the Association and attend the 1833 Meeting. That this was to be held in Cambridge provided added appeal. In addition to the *Report of the Third Meeting*, which was held at Cambridge in June 1833, the British Association took the unusual and expensive step of publishing lithographed signatures of the members attending, together with a report of proceedings at the public meetings and a full membership list.¹⁰⁰ 3,000 copies were printed at a cost of £200.¹⁰¹ It was a celebration of the successful establishment of the Association. At the head of the list of members, in large capital letters, one entry stands separate from and above all the others:

⁹⁷ Forbes to Harcourt, 1 December 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Correspondence*, p.107.

⁹⁸ Forbes to Murchison, 7 December 1831, as printed in Morrell and Thackray, *Gentlemen of Science: Early Years*, p. 514.

⁹⁹ *First Report of the Proceedings*, iii.

¹⁰⁰ *Lithographed Signatures of the Members of the British Association for the Advancement of Science* (Cambridge: Cambridge university Press, 1833).

¹⁰¹ Morrell and Thackray, *Gentlemen of Science: Early Years*, p. 174.

HIS ROYAL HIGHNESS THE DUKE OF SUSSEX, K.G.

PRESIDENT OF THE ROYAL SOCIETY

It is impossible for the reader to miss and it implies Royal Society approval of the new organisation. However, it is also an acknowledgment by the British Association of the continuing pre-eminence of the older institution. On page 31, is to be found the signature of J W Lubbock. His ticket number – 146 – shows him to be an early subscriber for a ticket to the Meeting which was attended by 852 gentlemen. Morrell and Thackray include Lubbock amongst the ‘special friends and high dignitaries’ who were given college rooms rather than being allocated accommodation on their arrival.¹⁰² Whewell provided lodging for Lubbock at Trinity, as he did for Harcourt and Secretary Phillips.¹⁰³ Having refused to attend the first two meetings, Lubbock was now feted by the Cambridge gathering. On Sunday morning he was at breakfast in Peacock’s rooms at Trinity in the company of Harcourt, Forbes, Buckland and politician, Thomas Spring Rice, with whom he would later work closely on the foundation of the University of London.¹⁰⁴ Further evidence for the status accorded Lubbock came on Wednesday evening when, as recorded by the reporter engaged by the Association, a party of members attended a dinner in the Hall of Trinity College. Association President Sedgwick delivered the final address and the last toast. He began, the report explained, by stating his regret at the ‘remote region in which Sir J. Herschel had placed himself (*he was at the lower end of the Hall*)’.¹⁰⁵ The report continued:

¹⁰² Ibid., p. 170.

¹⁰³ Whewell to Lubbock, 18 June 1833, Royal Society Lubbock Collection W270.

¹⁰⁴ Morrell and Thackray, *Gentlemen of Science: Early Years*, p. 172.

¹⁰⁵ *Lithographed Signatures of the Members of the British Association for the Advancement of Science*, p. 79.

‘The gentlemen of that Society had intended to do him all the honour they could, and his allotted place was at the higher table, by the side of Professor Babbage, Professor Airy and Mr Lubbock . . . Had time permitted he should have alluded more particularly to Professor Babbage, Mr Lubbock and Professor Airy who sat opposite him; with a view perhaps to inducing them to throw their light on this festive meeting’.

Babbage and Airy were placed on the higher table because they were Cambridge Professors and also, respectively, Association Trustee and Vice-President. In placing Lubbock there, the Association was not only acknowledging his importance, but also advertising to the gathering his presence at the Meeting.

The following day, Thursday, 27 June, Lubbock left Cambridge for his wedding on the Saturday, but not before he had made the acquaintance of a noted visitor to the meeting, Edinburgh Professor of Theology and Bridgewater Treatise author, Thomas Chalmers. Writing to his wife a few days later, Chalmers stated, ‘I look on my introductions to Lubbock and Babbage as very high ones’.¹⁰⁶ Whewell wrote to Lubbock offering his ‘congratulations on the event which calls you away from Cambridge’. “‘There is a tide in the affairs of men”. Such a tide as has just taken place in your affairs may for a time excuse a man from attending to other tides’, he added.¹⁰⁷ For Lubbock, Cambridge 1833, represented not so much a tide as a watershed, after which he became involved in Association matters, both as a Council member and as a member of committees. This is not to say, however, that he was completely won over to the Association cause.

¹⁰⁶ Hanna, W., *Memoirs of the Life and Writings of Thomas Chalmers D.D.* (New York: Harper, 1851), p. 331.

¹⁰⁷Whewell to Lubbock, 7? July, 1833, Royal Society Lubbock Collection W270.

4.5 Lubbock and the British Association, 1833-37

The Association's first-ever research grant, made at the Cambridge meeting of 1833, was made for work on the Tides:

Resolutions from the Committee of Sciences to the General Committee. Resolution 1. 'that a sum not exceeding 200/ be devoted to discussion of observations of the Tides, and the formation of Tide Tables, under the superintendence of Mr Baily, Mr Lubbock, Rev. G. Peacock and Rev. W. Whewell.'¹⁰⁸

As Morrell and Thackray note, therefore, the grant was 'officially given to a committee'.¹⁰⁹ The following year, however, Lubbock insisted on being granted sole responsibility for the use of this money. Morrell and Thackray interpret this as Lubbock's 'feeling the lure of competitive individualism and objecting to the burial of his scientific personality in group work' but this would not be unexpected given the importance attached to recognition of priority.¹¹⁰ Of greater interest is that Lubbock's status, and that of his research, was such that the Association felt it must accede to his request. 'A London star on whom the Association was dependent', Morrell and Thackray state in explanation of this, but this important point is not developed.¹¹¹ Lubbock also obtained from the Association Council permission to publish this work in the Royal Society's *Philosophical Transactions*.¹¹² This was an important concession which strengthened not only the recognition of Lubbock as author but also the position of the Royal Society as the publisher of the most significant new research. The paper resulting from Association's first commissioned work – 'Discussion of the Tide Observations made at Liverpool. By John William Lubbock, Esq. V.P. and Treas. R.S.' – was therefore read at the Royal Society in June 1835 and published in abstract form a month or so later. This

¹⁰⁸ *Report of the Third Meeting of the British Association for the Advancement of Science* (London: John Murray, 1834), xxxviii, xxxix, xl, pp. 471,477.

¹⁰⁹ Morrell and Thackray, *Gentlemen of Science: Early Years*, p. 515.

¹¹⁰ *Ibid.*

¹¹¹ *Ibid.*

¹¹² Council Minutes, 20 November 1834, British Association Archive.

was more than a year before Lubbock presented his report to Section A (Mathematical and Physical Science) of the Association at the Bristol meeting and two years before it appeared in print in the Association's *Report*.

The British Association's first *Report* had included abstracts of a few miscellaneous papers read at the meeting, in the second this had become formalised as 'Transactions of the Sections' separate from the Reports which it had solicited. The third and fourth reports contained abstracts of 44 and 90 such papers respectively. With the fifth *Report*, however, the Association put an abrupt end even to the practice of publishing abstracts so as, it explained, 'to avoid any interference with the Transactions of other Institutions'.¹¹³ While this may have been the reason, the peripatetic Association, without even a permanent organisational base, lacked the necessary administrative machinery to deal with papers anyway. Brief 'Notices and abstracts of miscellaneous contributions to the sections' reappeared in subsequent years but while the press would frequently report the content of papers read at meetings, the Association itself never made a serious attempt to be a publishing house for the presentation of new research. It was not unusual for a *Report* on a Meeting to be sent for printing only a few weeks before the next gathering a whole year later.¹¹⁴ Gifts, such as books, received by the Association in a particular year were passed to a philosophical society in the host city. Unable itself to house the vast amount of tide discussions from Liverpool, the Association was obliged to ask the Royal Society to 'take custody of them' and they were presented to the institution's Library.¹¹⁵

In their account of the early years of the British Association, Morrell and Thackray's attitude to Lubbock is strangely ambivalent. They describe him as an 'active BAAS reporter'

¹¹³ 'Official Report of the Proceedings of the British Association for the Advancement of Science, at the Dublin Meeting, August 1835', p. 289.

¹¹⁴ See, for example, Council Minutes June 1836 and June 1837, British Association Archive. These relate to the printing of the Dublin and Bristol *Reports*.

¹¹⁵ Council Minutes 20 November 1837, British Association Archive.

since he wrote three reports on the Tides and they place him amongst the ‘special friends and high dignitaries’ attending the 1833 meeting.¹¹⁶ Yet he is also a ‘grasping’ individual who ‘cleverly appropriated money’ granted to the tides committee.¹¹⁷ They also consider Lubbock to have ‘battered on the Association . . . without bothering to show gratitude for such support’.¹¹⁸ It is difficult to see the justification for this comment, however. Lubbock’s paper on the Liverpool Tides, for example, begins ‘By permission of the British Association for the advancement of Science, I am enabled to present . . . ‘and it goes on to record the ‘liberal support of the British Association’ for the ‘laborious work’.¹¹⁹ In his report at the Bristol meeting, he notes that he was ‘aided by the grant of money . . . for which I beg to offer my warmest acknowledgments’.¹²⁰ Nevertheless, it would be incorrect to suggest that Lubbock’s support for the Association was anything other than half-hearted. Reference has already been made (p.214) to Harcourt’s speech at the close of the Dublin meeting of August 1835 which was reported in Brewster’s *Philosophical Magazine* and in which he stressed the importance to the Association of the attendance at meetings of *master-spirits*.¹²¹ ‘This we are persuaded is the vital principal on which the permanence of the Association depends’, he had stated. That Lubbock was one of the principal figures to whom these remarks were directed is confirmed by Harcourt’s letter to him, written a few weeks later:

‘Why do you not come to these meetings?’ is a question you will say I have no right to ask, nor would I, if your presence at them was of less consequence. What I have said on this subject in the last number of the *Philosophical Magazine* is true: that the utility and ultimately the existence of the Association as a scientific institution depends on the attendance of persons like yourself at its meetings.¹²²

¹¹⁶ Morrell and Thackray, *Gentlemen of Science. Early Years*, pp. 170, 479.

¹¹⁷ *Ibid.* p. 319.

¹¹⁸ *Ibid.* p. 513.

¹¹⁹ Lubbock, J.W., ‘Discussion of the Tide Observations made at Liverpool’, *Philosophical Transactions of the Royal Society of London* 126 (1836), p. 57.

¹²⁰ *Report of Sixth Meeting of the British Association for the Advancement of Science* (London: John Murray, 1837), p. 285.

¹²¹ ‘Official Report of the Proceedings of the British Association for the Advancement of Science, at the Dublin Meeting, August 1835’, p. 291.

¹²² Harcourt to Lubbock, 6 October 1835, Royal Society Lubbock Collection H 58.

Lubbock attended the next Association meeting held in Bristol in 1836 and also the Liverpool meeting of 1837 which would be his last. Records show that between 1833/34 and 1839/40 he was on the Association Council in every year except 1836/37. Only one other 'ordinary' member of the Council, Greenough, served more regularly than Lubbock in this period.¹²³ As has been discussed in earlier chapters, however, the appearance of a name on a list does not necessarily imply active participation. Minutes show that the Association's Council met on 44 occasions in the years when Lubbock was a member; Lubbock attended on just two occasions and yet he continued to be appointed to the Council.¹²⁴ 'Lubbock did little for the Association in return for its liberal support of his research', state Morrell and Thackray. It could be argued however, that, if nothing else, he did allow the Association the use of his name and, hence, his reputation.

4.6 Concluding remarks

In the face of an emergent British Association, the Royal Society was able to survive as an institution and retain its position at the head of science in England. This was primarily because it continued to be seen by men of science as being at the apex of their reward system, one which was based on recognition of priority of discovery and through which a scientific reputation could be acquired. Association meetings, where, as Morrell and Thackray suggest, 'scientific work could be triumphantly combined with spectacle, feasting and gossip' were theatres in which a reputation could be flaunted, enhanced, (perhaps even

¹²³ George Greenough served in every year. Officers, such as Association Trustee, Murchison, were permanent members, ex-officio.

¹²⁴ Minutes of the Council, 1833 – 1840, Archive of the British Association for the Advancement of Science. Lubbock attended on 1 April 1835 and 30 November 1839.

diminished), but not, in most cases, acquired.¹²⁵ The Association would always rely on the Society to produce its *master-spirits*.

In the wake of the division of 1830, measures taken by the Royal Society, largely at the instigation of Lubbock (see Chapter 2), can be seen to have strengthened the Society's position as chief arbiter of scientific reputation. These measures included: the rapid rehabilitation of reformers who were senior scientific figures; the appointment of Councils which were, with the exception of the President, wholly composed of men of science and which included many Association leaders; the consolidation of the position of the *Philosophical Transactions* as the premier scientific journal; the appointment of specialist committees for the adjudication of medals in defined scientific areas. Lubbock's personal opposition to the formation of the Association, resulting both from concern about its use of his work on the Tides and from disquiet at the potential loss of status of the Royal Society (and its principal officer), helped to shape the developing relationship between the two bodies. Lubbock's concession of the 'promotion of science' to the Association and decision to join the new body marked the end of Royal Society opposition.

The Association was able to appropriate, with only limited resistance from the Royal Society, the role of promoting science by directing scientific enquiry. Conflict between the institutions was avoided by the Association's abandoning of interest in other areas such as publication and prizes. The Association thus found a niche which was sufficiently separate from that of the Royal Society and competition was avoided. In spite of the great overlap of personnel on their governing bodies, the two institutions functioned as distinctly separate entities, differing in both organisation and mission, coexisting and only occasionally collaborating. The nature of the Royal Society, as it became in the 1830s, will be the main focus of Chapter 5.

¹²⁵ Morrell and Thackray, *Gentlemen of Science: Early Years*, p. 90.

Finally, in discussing the 'style' of the Association, Morrell and Thackray make an important observation: 'the British Association did not try to advance science by concerning itself with scientific teaching or qualifications'.¹²⁶ 'These questions were peripheral to the research programmes and career interests of the majority of Gentlemen of Science who ran the Association', they state. It could be argued that the most significant long-term advance in British science in the 1830s came with the establishment of the University of London BA degree, the first to include a substantial and compulsory science component and which paved the way for the University's becoming, in 1860, the first to award a BSc degree. This development, and the role in it of the University's first Vice-Chancellor, John William Lubbock, will be the subject of Chapter 6.

¹²⁶ Morrell and Thackray, *Gentlemen of Science: Early Years*, p. 347.

Chapter 5. Changing while remaining the same? The Royal Society in the 1830s

5.1 Introduction

The word *reform* has been used frequently by authors in their discussion of changes in the organisation of the Royal Society in the second quarter of the nineteenth century. Indeed, it appears in the title both of Marie Louise Gleeson's thesis: *The Royal Society of London: Years of Reform, 1827-1847*, and of Roy MacLeod's essay: 'Whigs and Savants: Reflections on the Reform Movement in the Royal Society, 1830-1848'.¹ 'Reform and revision (1830-1848)' is the title chosen by Marie Boas Hall for the chapter devoted to this period in her history of the Royal Society in the nineteenth century: *All Scientists Now*.² For these authors 'reform' means essentially one thing: the revision of the statutes of 1847 which restricted to fifteen the number of new Fellows admitted each year. Gleason's statement that this 'paved the way for the ascendancy of scientific interests' reflects the general historiographical view of the significance of this event.³ Discussion of events leading up, firstly, to the contested election of 1830 in which reform 'failed' and, secondly, to the statute revision of 1847 in which it was at last 'successful' provide substantial bookends to these narratives with only a limited examination of developments in between.⁴ In Henry Lyon's earlier work, also, these two episodes provide the major focus for his chapter on this period in the Society's history – 'The Scientific Revolt'.⁵ The statute revision was, however, made possible by a process of subtle and gradual change which had been taking place within the Society for over a decade. The manner in which the revision was effected was as important as the substance of the

¹ Gleason, M.L., *The Royal Society of London: Years of Reform, 1827-1847* (New York: Garland, 1991); MacLeod, R.M., 'Whigs and Savants: Reflections on the Reform Movement in the Royal Society, 1830-1848', in Inkster, I. and Morrell, J.B. (eds), *Metropolis and Province* (London: Routledge, 1983), pp. 55-90.

² Hall, M.B., *All Scientists Now: The Royal Society in the Nineteenth Century* (Cambridge: Cambridge University Press, 1984), pp. 63-91.

³ Gleason, *The Royal Society of London*, p. 19.

⁴ *Ibid.*, p. 21.

⁵ Lyons, H., *The Royal Society, 1660-1940: A History of its Administration under its Charters* (Cambridge: Cambridge University Press, 1944), pp. 228-71.

changes themselves. Hall hinted at this in writing: 'It was not at all obvious that with the new statutes of 1847 the power of the President had been severely diminished and the power of the Council had been greatly increased. Yet this was the case'.⁶ How, though, did this come about? Gleason's view that 'It was the changing values and attitudes of a new generation of scientist which prompted the members of the old guard to initiate the measures of reform' only raises further questions. Who exactly were the 'old guard' and, more importantly, how did the Society come to the point where, in 1846, 'new men', such as principal agitator William Grove, were able to push change through the Council, this in spite of the opposition of the President?⁷ Answers to these questions, as this chapter will seek to demonstrate, are to be found, at least in part, in developments in the 1830s.

Hall commends the study of the Royal Society in the nineteenth century to those 'seeking to understand . . . the art of changing while remaining the same' but the institution that emerged from the 1830s, it will be suggested, was in many respects profoundly different from that which had entered the decade.⁸ This chapter will identify and examine the changes within the Royal Society which set it on a path bringing it closer to the point where a majority of the Council and Fellows would consider that Statute reform was both desirable and achievable. Lubbock became the Society's senior administrator with the election at the Anniversary Meeting of November 1830 and would cease to be so when he chose not to stand for re-election at the Anniversary Meeting of November 1845, the election which brought William Grove into the Council. Lubbock, intimately involved as ever with the Society's organisation, provides a fitting focal point from which to examine its evolution in this period.

⁶ Hall, *All Scientists Now*, p. 92.

⁷ Gleason, *The Royal Society of London*, p. 319; Lyons, *The Royal Society, 1660-1940*, p. 262.

⁸ Hall, *All Scientists Now*, x.

5.2 Sussex and the Council, 1833-35

On 23 June, 1836, a Special Meeting of the Royal Society was held, in response to a requisition from six Fellows, 'to take into consideration the principle of the Resolution passed on the 5th of May, which goes to withhold the thanks of the Society from the author of a work presented by him to the Society'.⁹ The author was physician Augustus Bozzi Granville and his work was entitled *The Royal Society in the XIXth Century*. What Granville had presented was a revised version of his earlier pamphlet, *Science without a Head*, first published in 1830. This had been highly critical of the Royal Society and its procedures and it had now been updated to include a detailed evaluation of the five years under the Presidency of the Duke of Sussex – 1830 to 1835. The original work had encouraged Fellows to vote for the Duke of Sussex in the contested election of November 1830. 'Secure by your vote a triumphant majority to that illustrious Prince – the only individual among us who can save our Society from its impending fate and dissolution', Granville had urged.¹⁰ Now, five years later, while praising much that had been achieved initially, Granville pointed to a lack of progress and direction in the last three of these years resulting, he believed, from the Duke's poor attendance at meetings, particularly those of the Council, through ill health (failing eyesight).¹¹ At the Special meeting on 23 June 1836 it is recorded that, after a statement from the Chairman with regard to the Resolution, 'it was then moved and seconded, That in the opinion of this meeting, the meeting of May the 5th exercised a sound discretion in refusing thanks to Dr

⁹ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive* (London, 1837), p. 415. The signatories to the requisition for the Special Meeting were the author of the work, Augustus Bozzi Granville, and five others: John Ayrton Paris (physician and future President of the Royal College), William Richard Hamilton (antiquarian and diplomat), Martin Leake (topographer and antiquarian), Sir Gore Ousley (linguist and diplomat), Joseph Sabine (Secretary of the Horticultural and Zoological Societies and brother of future President of the Royal Society, Edward).

¹⁰ Granville, A.B., *Science without a Head; or, the Royal Society Dissected* (London: Ridgway, 1830), p. 119.

¹¹ Granville, A.B., *The Royal Society in the XIXth Century* (London: Churchill, 1836), pp. 102-208.

Granville for his publication'.¹² The six who had signed the requisition had already written to indicate that they would not be attending and they were not, therefore, present to witness the Fellows vote in favour of the motion.

By endorsing the earlier decision to refuse thanks to Granville, the Fellows had demonstrated their support for Sussex and his Council. The Chairman of the Special Meeting was Society Treasurer, Francis Baily, who had also chaired the Council meeting at which the resolution had been passed. His action is in marked contrast to that of five years previously when he had been arguing for legal action to remove Sussex as President on the grounds of irregularities in the Duke's election to the Society. Similarly, Roderick Impey Murchison, who had organised the requisition for Herschel in November, 1830, now found himself on the Council as one of the Vice-Presidents. In November, 1835, the Council, presented with the opportunity to elect a new President by Sussex's offer to resign, had chosen, instead, to prolong the Duke's Presidency by what would be a further three years. There was no wish, either amongst the Council or the majority of the Fellows, to bring his reign to an end. In November 1835, however, two months before Granville's book was published, the Duke's poor attendance at Society meetings had been the main reason for the resignation of the Society's Treasurer and leading figure, John William Lubbock.

The relationship between Lubbock and his President was at its strongest around the time of the Anniversary Meeting of November 1832 (see Chapter 3, p. 186); from this point onwards, there is evidence of a steady deterioration and of the Duke's desire to exert his authority. Sussex's continuing disappointment at the inability (perhaps refusal would be more accurate) of astronomers and mathematicians on the Council to propose a Royal Medal 'Prize Question' which he advocated, has been discussed in Chapter 2. That chapter has also

¹² *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 415.

shown that the Royal Society Council for 1832/33 was largely chosen by Lubbock, with the assistance of Senior Secretary Roget and, to a lesser degree, Junior Secretary Children. Men suggested by the Duke, by and large, had failed to make it onto the Council. In 1833, however, the Duke of Sussex took early action to ensure that the Council for 1833/34 contained, predominantly, men of his choosing. Writing to Lubbock on 10 July 1833, Children stated that the Duke had declined the request for a meeting with the Treasurer and Secretaries to discuss the new Council to be elected in November but desired to communicate his choice for the ten vacancies. A list of fourteen names followed, under the heading 'New Council':

Barlow, Brande, Brodie, Gilbert, Dr Jennings, Peacock, Baden Powell, Capt. Smyth – 8

Dollond, Faraday, Gray, Dr Holland, Rennie, Walker – 2¹³

'The first 8 on the new council the Duke wishes to be considered as settled – if they will serve', Children explained, 'and the 2 others to be chosen out of the remaining six unless you and Roget wish to propose any others instead'. That Lubbock was not familiar with some of these men (and, it may be assumed, would not have chosen them) is shown by a Children's subsequent letter to him:

Dr Jennings is an intimate friend of Sir John Herschel's and Baden Powell is the Savillian Professor of geometry at Oxford . . . Mr Gray is the best naturalist that I know . . . Mr Walker is a civil engineer & author of a paper in the Phil. Trans . . . It was Mr Geo not Sir John Rennie whom the president named.¹⁴

All of the first eight were duly elected. From the list of six, from which two were to be chosen, Faraday was elected, the final position being filled by Adam Sedgwick. Nine out of the ten new members were, therefore, of the President's choosing. The Duke would not have been

¹³ Children to Lubbock, 10 July 1833, Royal Society Lubbock Collection C 178.

¹⁴ Children to Lubbock, 12 July 1833, Royal Society Lubbock Collection C 179.

able to compile his lists without assistance. It might be speculated that this came from close confidante, Peacock, whose name appears in the list of eight and who has been shown to have assisted the President in the choice of new Council members in the previous year.

Towards the end of 1833, the Geological Society, through their past and current Presidents, Greenough and Murchison, approached Lubbock to ask his assistance in procuring one of the Royal Society's rooms for use as a new library and meeting room.¹⁵ Murchison wrote to Lubbock about the 'advantage to all concerned of ceding this apartment to the only scientific body which can by any possibility make use of the same'. 'Valuing as I do your well merited influence in the affairs of the Royal Society, I cannot avoid troubling you', he stated.¹⁶ Murchison was also anxious that the issue should not reopen old wounds, Geologists having formed the backbone of the reform party which opposed the election of the Duke in 1830. 'If I mistake not you already think with me;' Murchison told Lubbock, 'indeed I know not one member of the Council who opposes that claims of the Geologists, save our Royal Pres'. Murchison continued:

On this, as on many other points the Duke is quite ignorant of the "animus" of his own council. When fully aware of their wishes he surely will not continue to preserve these rooms as an arena for the spiders, whilst the Geologists are stifled for the want of a meeting room of adequate size. Such conduct may engender a very bad spirit . . . I have striven hard to assure the enemies of HRH that in truth he was well disposed towards us but if no disposition towards accommodation be now evinced, the persons to whom I allude will feel persuaded of the truth of their former allegation that the Duke is only thus acting to mortify and spite the Geologists for their conduct on a certain occasion.¹⁷

Lubbock wrote to Sussex in support of the concession of these rooms. 'I am very anxious', he told Children, 'that the act of concession, which I think is inevitable, should originate with

¹⁵ Greenough to Lubbock, December 23 1833, Royal Society Lubbock Collection G 127; Greenough to Lubbock, December 28 1833. Royal Society Lubbock Collection G 128; Greenough to Sussex, December 1833, Royal Society Lubbock Collection G 129.

¹⁶ Murchison to Lubbock, 24 November 1833, Royal Society Lubbock Collection M 216.

¹⁷ Ibid.

the President as I think it might tend to strengthen the attachment which is felt towards him by the Society and I fear any attempt to withhold it will throw us into unpleasant dissensions.¹⁸ He suggested to the Duke that an announcement might be made at the coming Anniversary meeting:

The council would I think have proceeded at once to this step if Mr Children could have stated that Your Royal Highness was not opposed to it. I have reason to fear I may say to know that the harmony which since the time your Royal Highness became President has been uninterrupted will not be maintained unless we give way on this occasion to the pressing wants of the Geological Society. The announcement of this concession by your Royal Highness from the chair would convey particular pleasure to a number of the most influential members of the society.¹⁹

The President, however, felt unable to comply. 'I am commanded by His Royal Highness to thank you for the communication', Children informed Lubbock the following day (27 November). 'His Royal Highness regrets that . . . He cannot adopt the course you have recommended'. This was, Children explained, because he believed that it would 'seriously compromise the interests of the Royal Society'. Murchison wrote to Lubbock that evening: 'Many thanks for your kind efforts – I am sorry HRH will not listen to the dictates of prudence – I will always endeavour to negotiate to the last, hoping for the best'.²⁰ That the President was, in consequence of his not being willing to cede the rooms, anxious about his reception at the 1833 Anniversary Meeting is shown by Children's comment in a letter to Lubbock of 2 December. This suggests that the meeting passed off without difficulty: 'The President seemed as much pleased with the day on Saturday [the Anniversary] as everybody seemed to be with His Royal Highness'.²¹ Within six months, however, the rooms had been ceded anyway, Greenough communicating to the Royal Society Council the following resolution

¹⁸ Lubbock to Children, 26 November 1833, Royal Society Lubbock Collection L 441.

¹⁹ Lubbock to Sussex, 26 November 1833, Royal Society Lubbock Collection L 442.

²⁰ Murchison to Lubbock, 27 November 1833, Royal Society Lubbock Collection M 217.

²¹ Children to Lubbock, 2 December, 1833, Royal Society Lubbock Collection C 187.

passed by the Geological Society on a motion by Murchison on 7 May 1834: 'That the thanks of this Society [the Geological] be given to His Royal Highness the President, and to the Council of the Royal Society for their aid and co-operation in obtaining . . . additional apartments in Somerset House'.²² It is difficult to identify, therefore, a motive for refusal in November 1833, other than the Duke's not wishing to be seen to acquiesce. The selection of the new Council and the ceding of Society rooms are in fact rare demonstrations of autocratic action on the part of the President. What is more significant is that there was no question, in due deference to his exalted station, of his authority being challenged. Lubbock's action on the issue of the Geology rooms confirms that he is supportive, at this time, of the arrangement whereby men of science in the Society are led by a non-scientific President of rank and influence. If Hall is correct in suggesting that following the reforms of 1847 the Society could never again 'be seen as a monarchy' then it is Sussex who should be considered to be the last monarch. His authority, though seldom exercised, was absolute.²³

The Duke's attendance at Council meetings declined significantly after his second year as President. In 1832/33 he attended 5 out of 18 and, in 1833/34, 4 out of 16 (although arriving late to take over from Lubbock on three of these occasions). His attendance at ordinary meetings followed a similar pattern and Lubbock was left to chair the Anniversary Meeting in November 1834. The absent Sussex sent Lubbock a letter to be read to the assembled Fellows which expressed 'extreme regret' at his not being able to attend. Lubbock was to receive the Society's Royal Medal at this meeting and the Duke's concluding sentence was addressed to him personally, perhaps attempting to mend a damaged relationship: 'I regret much being deprived of the pleasure of conferring the medals this day, and particularly the one which has been so properly adjudged to you, for whom I profess the

²² Minutes of the Council of the Royal Society, 8 May 1834, Royal Society Archive CMO/12.

²³ Hall, *All Scientists Now*, p. 92.

highest consideration'.²⁴ The main substance of the Duke's letter, however, concerned his willingness to stand again as President: 'Should the gentlemen kindly vote me again into the Chair, aware as they are of my present infirmities, I can only accept the proffered honour upon the understanding that, should I not be better at this period next year, I may be now considered as giving them notice that I shall consider myself bound in duty to resign an office, the duty of which I am no longer able to perform'.²⁵ The Anniversary Meeting re-elected the Duke as President. One year later, and with the Duke having failed to attend one single Council or Ordinary Meeting, the Society's expectation should, therefore, have been that he would not offer himself for election again.

Gleason makes the following comment on this period: 'When Sussex's health began to decline in 1834, he was no longer able to attend many of the Council meetings, and many of the advances which had been made were abrogated . . . In Sussex's absence, the old guard conservative forces dominated the Council and seemed less concerned with directing an efficient organisation than with maintaining the status quo'.²⁶ There are many difficulties with this statement, however. Examination of the composition of the Council for 1834, for example, reveals that no fewer than ten of its members had signed the requisition for Herschel.²⁷ There was also Faraday, a reformer in spirit even if he was never prepared to venture his head very far above the parapet. Nevertheless, somewhat paradoxically and as will be discussed below, between 1835 and 1838 successive Councils, dominated by reformers like Baily, Murchison and Whewell, did opt to maintain the status quo by supporting the re-election of an absentee President. Gleason's suggestion that many 'advances' were abrogated would seem to be derived from Lyons's earlier comments on the

²⁴ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive* (London, 1837), p. 302.

²⁵ *Ibid.*

²⁶ Gleason, *The Royal Society of London*, p. 305.

²⁷ The ten are: Baily, Lubbock, Barlow, Brodie, Brunel (M.I.) Cumming, Greenough, Pepys, Powell, Sedgwick.

abandoning by the Council, in June 1835, of the arrangement introduced in April 1832 whereby the election of new Fellows was restricted to four occasions each year, (December, February, April, June), with prior notice given to Fellows. 'This was another retrograde step and showed that opposition to reform was still active', Lyons stated.²⁸ 'The motive', he continued, 'would seem to have been the desire to obstruct any attempt to reform the election procedure'.²⁹ Lyons, though, was mistaken in believing the original measure to have been an attempt to restrict admissions, which it could not have been without a limit on total numbers, rather than an administrative convenience which had subsequently proved to be counterproductive. Forty-three new Fellows were elected in 1833/34; the business of the Society's April meeting was dominated by the election of sixteen men, to the exclusion of other business.³⁰

The Duke's eyesight had shown signs of weakness from an early age and in the first half of the 1830s he suffered increasing blindness due to cataracts. 'I am sorry to say that I am becoming a very useless being from want of sight, however, when the time for an operation arrives I shall hope to be restored to that blessing again', he wrote in 1834.³¹ The operation to remove the cataracts would eventually be performed in June 1836. The Duke's ill-health deprived the Fellows not only of his presence at their meetings but also of the previously regular soirees in the Duke's apartments or in his Library at Kensington Palace. Granville considered that the Royal President's presence at meetings 'had no doubt an impressive and salutary effect' but as the President's attendance steadily declined, he asserted, 'Council Boards, one after another, appear to have been assembled with the smallest number possible of members, four of whom generally were officers of the Society

²⁸ Lyons, *The Royal Society, 1660-1940*, p. 256.

²⁹ *Ibid.*, p. 255.

³⁰ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, pp. 313-37; Hall, *All Scientists Now*, p. 70.

³¹ Sussex to Marquess Wellesley, as quoted in Gillen, M., *Royal Duke* (London: Sidgwick and Jackson, 1976), p. 208.

– namely the three salaried secretaries and the treasurer in the chair’.³² This had, he believed, a deleterious effect on the ‘manner in which business was conducted and improvements continued’.³³ Not even the constant presence’, Granville continued, ‘of the officer next in importance to the President [Lubbock], with all his energies, activity and knowledge of business, . . . had the effect during the last two or three years to place matters on the footing on which they were in 1831’.³⁴ ‘Philosophers . . . differ but little from ordinary men’, he explained, ‘They are influenced by a feeling approaching to vanity. They wish that the work which they perform . . . should be witnessed and approved of by their chief, whose station in life is so much far above them’.³⁵

One would suspect, intuitively, that Granville was correct in his assertions. However, they do not bear detailed scrutiny. As the table below shows, examination of the attendance of the sixteen ordinary members (i.e., not the officers) of Council at their meetings shows no significant decline.

³² Granville, A.B., *The Royal Society in the XIXth Century*, pp. 183-84.

³³ *Ibid.*

³⁴ *Ibid.*, p. 185.

³⁵ *Ibid.*, pp. 185-86.

Year	1830/31	1831/32	1832/33	1833/34	1834/35
Number of Council meetings	19	16	18	16	18
Number attended by President Sussex	15	8	5	4	0
Number attended by Lubbock	19	16	18	16	16
Mean attendance of the 16 ordinary members	8.8	8.9	10.8	8.2	8.6

Table 5.1 Attendance at Council Meetings, 1830-35)

While it is difficult to compare the ‘manner in which business was conducted and improvements continued’, there was no reduction, year on year, in the number of Council meetings held. Nevertheless, Granville was correct in his assessment that there were few initiatives of any significance after 1833/34.

Lubbock did not miss a single Council meeting from his appointment in November 1830 until his resignation in early November 1835. Granville, whose book appeared in January 1836 – two months after Lubbock’s resignation, was keenly aware that, for the previous three years, it had been Lubbock who had led the Royal Society in the absence of the President. Granville devoted two pages of the book to a section entitled ‘Character of the late Treasurer’ whom, he declared, ‘the Society at large must deeply regret having lost’.³⁶ This, he stated, ‘imposes on me the pleasing duty of paying him a just tribute of disinterested commendation and praise’.³⁷ Assuring the reader of his impartiality Granville explained that he was ‘wholly unacquainted with that gentleman, with whom I never have as much as exchanged a single word’.³⁸ Granville’s comments were based, he said, on his ‘ransacking the books and records of the Society’:

³⁶ Granville, A.B., *The Royal Society in the XIXth Century*, p. 158.

³⁷ Ibid.

³⁸ Ibid.

‘In the course of my laborious enquiries . . . I have learnt to admire the perseverance, the zeal, the great ability, and the earnestness with which Mr Lubbock has signalized the five years of his career as Treasurer of the Royal Society . . . In fine, wherever I turned, I invariably met with Mr Lubbock’s name – which I found uniformly associated with every thing that was likely to be advantageous to science and to the Royal Society . . . Truly, every circumstance of Mr Lubbock’s career, during the few years that he has belonged to the Institution, on which he reflects honor, points him out for one of its future Presidents’.³⁹

5.3 Lubbock’s resignation

Boas Hall suggests that ‘Lubbock’s resignation seems to have been partly occasioned by the rumour that he had acted in such an arbitrary and imperious manner as to occasion the resignation as Assistant Secretary of James Hudson’.⁴⁰ However, examination of the correspondence reveals the Hudson affair to have been a trivial matter, quickly settled nearly a year previously.⁴¹ Lyons earlier account states, more correctly, that he ‘objected to the action of the Council in continuing to recommend for re-election a President who, they knew, was unable to perform the duties of his office, due to ill health’.⁴² Lubbock’s resignation was, therefore, a much more serious matter; one which reveals much about Royal Society micro-politics at the time.

As the November Anniversary Meeting of 1835 approached the Society should have been expecting the resignation of its President, as he had promised in November 1834, in consequence of his non-attendance at meetings. Indeed, on 28 October, the Duke did send a letter to Children, intimating his intention to resign, which stated that ‘having fixed the time myself for such declaration, I must not go from my word’.⁴³ However, another letter followed three days later explaining that ‘if the members wish me to remain, I shall certainly

³⁹ Granville, A.B., *The Royal Society in the XIXth Century*, pp. 158-60.

⁴⁰ Hall, *All Scientists Now*, p. 73.

⁴¹ Roget to Lubbock, December 1834 – January 1835, Royal Society Lubbock Collection R 126, 127, 129.

⁴² Lyons, *The Royal Society, 1660-1940*, p. 239.

⁴³ Minutes of the Council of the Royal Society, 5 November 1836, Royal Society Archive CMO/12.

not retire, but give myself another year's trial'. Both of the Duke's letters were read to the Council on 5 November following which the Council immediately passed the following resolution:

that in the hope and expectation that the Royal Society will soon obtain from his Royal Highness the benefit of that attendance at the meetings of the Council and Society, . . .the Council are of the opinion that it will be greatly for the advantage of the Society that His Royal Highness should retain the office of President for the ensuing year.⁴⁴

Twelve members of the Council were present at this meeting. In addition to Lubbock and Secretaries Children, Roget and Konig, the following were also in attendance: Barnwell, Brande, Faraday, Jennings, Powell, J. Rennie, Turner, Whewell. There is nothing to indicate that accepting the Duke's resignation was at any point considered, this is in spite of Rennie, Turner and Whewell having been reformers who had signed the requisition for Herschel five years previously. The meeting recommended a new Council for the coming year, with Sussex as President. Although, at this meeting, Lubbock accepted nomination as Treasurer, within a few days he had decided to resign. Lubbock wrote to former President and family friend, Davies Gilbert, explaining his decision:

His Royal Highness at the Anniversary of last year stated his determination to resign if in the course of this year he was unable to discharge the duties of President. A communication was laid before the Council on Thursday last from his Royal Highness and the Council determined to recommend His Royal Highness as President for the coming year. The nature of the communication was such that I do not think the Council could have acted differently but I can no longer give my humble support to a system which I consider most improper and most injurious to the interests of the Society.⁴⁵

Lubbock considered that the Council had no alternative other than recommending the re-election of the Royal Duke; he was not expecting support from other members of the Council.

⁴⁴ Ibid.

⁴⁵ Lubbock to Gilbert, November 1835, Royal Society Lubbock Collection L 443.

Lubbock wrote to Children requesting him to 'communicate to His Royal Highness the President my respectful wish to retire from the Council of the Royal Society, a step which I take with much reluctance and extreme regret'.⁴⁶ Lubbock also informed Roget: 'It is not my intention to continue as a member of the Council of the Royal Society during the ensuing year; I shall write to you a letter to be laid before the Council at their next meeting, but as a matter of courtesy I think it right to acquaint you of my intention'.⁴⁷

Lubbock's formal letter of resignation, sent to Secretary Roget, was read to the Council Meeting held on 12 November:

I humbly conceive that serious disadvantage will arise to the Society from wanting the benefit of the frequent attendance of the President, and regret no longer to continue a fellow labourer with yourself and others for whom I entertain the highest respect. I have no other alternative but to entreat that His Royal Highness the President and Council will be pleased to recommend some other member of the Society at the anniversary to fill the office of Treasurer; and this I do with great reluctance and regret.⁴⁸

'Upon your letter of resignation being read to the Council,' Roget informed Lubbock, 'there was but one feeling of lamentation that you had thought proper to take such a step: and it was unanimously resolved that "the Council accept with great regret the resignation of Mr Lubbock".⁴⁹ When Lubbock first resigned, on a matter of principle, in December 1830, the Duke of Sussex refused to accept his resignation (p.121). Now there was no such attempt to dissuade him, either by the President or any other member of the Council. It seems that Lubbock was surprised at the Council's speedy acceptance because Roget had to write again two days later to assure him that 'It was perfectly understood at the Council that your resignation was prospective only and referred to the day of the Anniversary, and it was in this sense only that they wished their acceptance of that resignation to be notified to you'.

⁴⁶ Lubbock to Children, November 1835, Royal Society Lubbock Collection L 444.

⁴⁷ Lubbock to Roget, November 1835, Royal Society Lubbock Collection L 445.

⁴⁸ Minutes of the Council of the Royal Society 12 November 1835, Royal Society Archive CMO/12.

⁴⁹ Roget to Lubbock, 12 November 1835, Royal Society Lubbock Collection R 133.

‘We have not yet decided’, he continued, ‘whom we shall recommend as your successor on the 30th – but time presses and we must fix upon someone at our next meeting on Thursday’.⁵⁰ That someone would be Lubbock family friend, Francis Baily (not George Rennie as Lyons states, incorrectly), recommended as Treasurer by the Council at their next meeting on 19 November.⁵¹ At that same meeting it was ‘resolved by ballot’, following a proposal by Murchison, ‘that J W Lubbock Esq be recommended to the Society as a member of the Council for the ensuing year’.⁵² Somewhat bizarrely, Lubbock accepted and, having resigned as Treasurer on 12 November, now found himself recommended for reappointment to the Council the following week. Murchison wrote to inform Whewell, who had not been present:

You will be glad to learn that we have got Lubbock back into the Council of the Royal Society. At our last meeting I felt so strongly the untowardness of his secession, and seeing nothing in his letter to us which prevented our electing him into *our Council*, albeit he had resigned the office of *Treasurer*, that I made a motion for the purpose which was unanimously carried it being felt that his continuing to act with us would materially contribute to our well being. I also wrote to him a strong private letter and the result is that he accepts our offer, saying at the same time that ‘he does not consider that by doing so he at all compromises the opinion he entertains of the *manner in which* the President has *treated* the Society’.⁵³

Whewell wrote in reply that he was ‘glad you have got Lubbock in to the Council . . . but still I am vexed with his resignation of which his retaining office makes the absurdity still stronger’.⁵⁴ Lubbock’s final act as Senior Vice-President and Treasurer for 1834/35, was to chair the Anniversary Meeting of November 1835, at which the absent Duke of Sussex was re-elected as President. No formal acknowledgement of his five years as Treasurer and Senior

⁵⁰ Roget to Lubbock, 14 November 1835, Royal Society Lubbock Collection R 134.

⁵¹ Minutes of the Council of the Royal Society, 19 November 1835, Royal Society Archive CMO/12; Lyons, *The Royal Society, 1660-1940*, p. 239.

⁵² Ibid.

⁵³ Murchison to Whewell, 21 November 1835, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence of the British Association for the Advancement of Science* (London: Royal Historical Society, 1984), pp. 221-22.

⁵⁴ Whewell to Murchison, 22 November 1835, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 223.

Vice-President would appear in the records of the Royal Society. It was not until one full year later, at the Anniversary Meeting of November 1836, that the Duke made his reappearance at the Society. 'I appear before you after an absence of two years from this chair', he stated in his address, '... I have been secluded during nearly the whole of the period from the active business of life and of society'.⁵⁵ Ignoring the circumstances of Lubbock's resignation he told the Fellows that during this period he 'could rely with perfect confidence upon the cordial cooperation of the members of the Council, and should have felt satisfied that they would not allow the real interests of the society to suffer in my absence'.⁵⁶ He had 'only consented to continue', he said, '... when kindly pressed to do so by the members of the Council'.⁵⁷

Lubbock's resignation and the Duke's re-election prompted comment in the newspapers and letters to them, re-opening old wounds from five years previously when Sussex was first elected. On 26 November 1835, a few days before the Anniversary Meeting, anonymous F.R.S. had written to *The Times* stating that Lubbock had resigned 'for no reason other than the total want of cooperation in the objects and business of the Society on the part of the Royal President, who, on the alleged grounds of ill-health, had not attended a single Council meeting nor opened his library or apartments to the fellows once during the past twelvemonth'.⁵⁸ 'On St Andrew's Day', FRS continued '... a pathetic letter will be read to the General Meeting, apologizing for past neglect, tendering a reluctant resignation, and in the hoped event of its non-acceptance, making large professions of improved conduct for the future'.⁵⁹ 'Another blank session' he warned, 'will accelerate the downward course of the Society in scientific usefulness and consequent public estimation'.⁶⁰ 'Socius' however, writing in response to the FRS letter, considered that 'there is so much unfairness in this

⁵⁵ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive*, p. 429.

⁵⁶ *Ibid.*, p. 430.

⁵⁷ *Ibid.*

⁵⁸ *The Times*, 26 November 1835.

⁵⁹ *Ibid.*

⁶⁰ *Ibid.*

representation'.⁶¹ 'It has been only at the solicitation of several of the fellows of the society, the most zealous for its prosperity, as well as the most eminent in science, that the Duke has consented to be nominated . . . for another year'.⁶² 'The resignation of Mr Lubbock', Socius stated, 'is indeed a general subject of regret . . . but it certainly is the common opinion of his friends that in the present instance he has mistaken the true interests of the society'.⁶³ The *Morning Post* reminded readers that the Society had 'placed the Duke of Sussex in the chair of Sir Isaac Newton, a symptom and confession of decay'.⁶⁴ This 'preposterous election', the paper stated, had arisen from 'the senile and feminine ambition of being (as they expected) in habitual intercourse with Royalty, and the bounteous promises held out, and not, we understand, very diligently fulfilled, of the frequent honour and recreation of coffee, conversation and muffins to be enjoyed at Kensington Palace'.⁶⁵

With Lubbock restored to the Council of the Royal Society, Murchison told Whewell: 'Peace therefore is preserved for *the present*, but ere another election day arrives, we must be prepared with *an effective* President or a revolution will take place. Ponder well on this'.⁶⁶ 'We must as you say', Whewell replied, 'see about a new administration of the Royal Society if anything is to be done with it'.⁶⁷ However, even as Whewell was writing these words he would have been aware that he had accepted an invitation to dine with the Duke at Kensington Palace a few days later.⁶⁸ Faraday, too, had been, in his own words, 'honored...with an invitation to dinner'.⁶⁹ Both Murchison and Whewell were Council

⁶¹ *The Times*, 27 November 1835.

⁶² *Ibid.*

⁶³ *Ibid.*

⁶⁴ *Morning Post*, 30 November 1835.

⁶⁵ *Ibid.*

⁶⁶ Murchison to Whewell, 21 November 1835, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 222.

⁶⁷ Whewell to Murchison, 22 November 1835, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 223.

⁶⁸ Whewell to Faraday, 23 November 1835, Michael Faraday Collection 0836, <https://epsilon.ac.uk/view/faraday/letters/Faraday0836>

⁶⁹ Faraday to Children, 19 November 1835, Michael Faraday Collection 0833, <https://epsilon.ac.uk/view/faraday/letters/Faraday0833>

members and Vice-Presidents in 1835-36. In spite of this, at the end of that year the Duke of Sussex, who had attended just one meeting, was re-elected unopposed for 1836-37. In similar circumstances, he was re-elected again for 1837-38. On neither occasion did the Council receive even a token offer of resignation from the Duke. An entry about the Duke in Murchison's journal, perhaps explains the lack of willingness to act:

With his bonhomie, his ready access at all times when in health, and his earnest desire to do what was best in the interests of science, we who had been his opponents became his friends in the sequel. There was also this advantage in having him for our chief, that all scientific rivalry was at an end.⁷⁰

'It is notable', Hall observed, 'that Baily, formerly among the leaders of the leaders of the astronomical rebels, never tried to institute reforms during the years when the Royal Society had an absentee President', implying that he should have been expected to do so.⁷¹ Why, though, it could be asked, should Baily and his fellow reformers of 1830, the men who now found themselves to be the senior figures within the Royal Society, feel the need to introduce change? In contrast with the years during which Lubbock chaired the Council, where nearly all aspects of the working of the Society were subject to reform or improvement, Baily's years were, as 'FRS' had predicted, in many ways 'blank sessions'. At some Council meetings, little business was conducted and on 11 February 1836 the sole item recorded was that 'the minutes of the previous meeting were read and confirmed'.⁷² The Council Meeting of 20 October 1836 had to be abandoned because only five members were present.⁷³

The timing and manner of Lubbock's resignation remain something of a mystery. In September 1835, Lubbock had been approached by the Whig Government to take on a

⁷⁰ Geikie, A., *Life of Sir Roderick I. Murchison* vol. 1 (London: John Murray, 1875), p. 19.

⁷¹ Hall, *All Scientists Now*, p. 73.

⁷² Minutes of the Council of the Royal Society, 11 February 1836, Royal Society Archive CMO/12.

⁷³ Minutes of the Council of the Royal Society, 20 October 1836, Royal Society Archive CMO/12.

significant and time-consuming role – that of first Vice-Chancellor of the soon-to-be-created University of London (see Chapter 6). The decision to resign, however, was not taken until two months later, and then, it would seem, somewhat on the spur of the moment when the Council chose to recommend the re-election of Sussex. Lubbock did not expect, and did not receive, support from fellow Council members on this issue. Rather than choosing to resign quietly, Lubbock did so by expressing publicly his dissatisfaction with the conduct of the King's brother. That a man of Lubbock's social standing should take this step is all the more surprising.

5.4 Resignation of Sussex and appointment of Northampton

Largely freed from Royal Society responsibility, Lubbock participated more actively in British Association meetings.⁷⁴ He attended the Bristol meeting of 1836 and that at Liverpool in 1837, where he was a Vice-President of the Mathematics and Physical Science Section.⁷⁵ The Liverpool meeting provided an illustration of Lubbock's continuing importance both within the Association and as a scientific figure nationally. It also demonstrates a marked change in Lubbock's opinion regarding the leadership of scientific bodies. The General Committee met on Thursday evening, 14 September, to determine arrangements for the next meeting. Murchison related the events in a letter to Harcourt who did not attend the Liverpool

⁷⁴ Lubbock's attendance at Royal Society Council meetings in the following year, however, 15 out of a total of 18, was higher than any other 'ordinary' member although he attended only 7 out of 15 in 1836/37. Lubbock was the chair of the Royal Society Excise Committee which delivered reports to the Council in March 1836 and November 1838 and which advised the Board of Excise on the use of a hydrometer to determine the specific gravity (and hence, alcohol content) of liquor. Minutes of the Council of the Royal Society, 3 March 1836 and 8 November 1838, Royal Society Archive CMO/12.

⁷⁵ *Report of the Seventh Meeting of the British Association for the Advancement of Science* (London: John Murray, 1838), ix.

meeting.⁷⁶ Having described the Committees choice of Newcastle for 1838 and of the Duke of Northumberland as President elect, Murchison then continued:

And here I must tell you by way of interlude that Lubbock broached as a principle (not objecting to the Duke) that we ought always, if possible, to take a scientific chief. I cheered the sentiment (warmly) . . . but I called on Professor Johnston to state whether in his opinion there was any such person in the north of England; on which he and all the men of Newcastle declared there was no such person and that they were all now agreed that the Duke of Northumberland was the man.⁷⁷

The London journal, *The Athenaeum*, carried a report of the meeting:

Mr Lubbock, Professor Stevelly, Dr Apjohn and the Rev. Dr Robinson complained . . . that the Committee had gone to look for Presidents rather in Debrett's Peerage than among scientific records. A short debate ensued which manifestly produced a strong feeling, that eminence in science, not personal rank, should in future be the qualification for a President.⁷⁸

The following week Murchison wrote to the editor of *The Athenaeum* concerning the magazine's reporting of the proceedings:

I would only say that in stating the opinions of Mr Lubbock and two or three other gentlemen concerning the superior fitness of *scientific* men to fill the office of President, it would have been kind and courteous . . . to have said that Mr Murchison, the General Secretary, endeavoured to explain how under existing circumstances the selection of such a scientific chief was impracticable. The Council have never abandoned the principle of taking a man of science for their chief when an opportunity occurs.⁷⁹

'Scientific chief' did not mean, as Murchison made clear in a letter to Vernon Harcourt, a 'mere man of science' but a 'public figure', preferably aristocratic, one who could 'influence

⁷⁶ Murchison to Harcourt, 18 September 1837, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 257.

⁷⁷ Ibid.

⁷⁸ *The Athenaeum Journal of Literature, Science and the Fine Arts* (London, 1837), pp. 705-06.

⁷⁹ Murchison to Charles Wentworth Dilke, 27 September 1837, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 259.

the masses'.⁸⁰ Murchison made these remarks in proposing the appointment of the Duke of Montrose as British Association President for the Glasgow meeting of 1839. An aristocratic leader with a scientific interest, or one like Montrose who 'took high honours at Cambridge' was seen as the ideal. Lubbock was familiar with this model: in November 1836 he had taken up his position as University of London Vice-Chancellor, under a second-Wrangler figurehead, the Earl of Burlington. That Lubbock was appointed by the Whig government some six months before Burlington suggests that he was in support of this management arrangement.

By early summer in 1838 the Duke of Sussex had made up his mind to give up the Presidency of the Royal Society at the next Anniversary (November). During this period, it is apparent that the Duke was keen that Herschel, recently returned from South Africa as a national hero after an absence of four and a half years, should succeed him as President. On 29 August it was being reported in *The Times* that 'Sir John Herschel . . . is to be the President of the Royal Society, in the room of the Duke of Sussex'.⁸¹ This was incorrect, however, because Herschel was reluctant and would not be persuaded. In September he wrote to Whewell asking him to 'squench any reports' that he would be the next President.⁸² Francis Baily received a similar letter from Herschel who wanted to stop rumours that he might be available for the Presidency.⁸³ Writing about these events, Marie Boas Hall states that 'the 1830 rebels, Murchison particularly, at last saw that Herschel . . . was not a practicable or even desirable candidate, and with Whewell and Peacock moved to support Northampton'.⁸⁴ The evidence, however, suggests that the Presidency of several institutions could have been

⁸⁰ Murchison to Harcourt, 26 April 1839, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 310.

⁸¹ *The Times*, 29 August 1838.

⁸² Herschel to Whewell, 17 September 1838, The Sir John Herschel Collection 1094, <https://epsilon.ac.uk/view/herschel/letters/Herschel9098>

⁸³ Herschel to Baily, 16 and 17 September 1838, The Sir John Herschel Collection 1094 - <https://epsilon.ac.uk/view/herschel/letters/Herschel1094> and 6019 - <https://epsilon.ac.uk/view/herschel/letters/Herschel6019>

⁸⁴ Hall, *All Scientists Now*, p. 74.

Herschel's, if he had been willing to accept them. Initially at least, far from discounting Herschel as a candidate for high office, Murchison, who was not on the Royal Society Council at the time, was hoping that Herschel might be persuaded to accept the Presidency of the British Association, of which Murchison was a trustee.⁸⁵ Mindful of Lubbock's comments at the previous year's Association meeting, Murchison wrote to Harcourt on 18 July 1838:

. . . if you had been present at the Liverpool meeting you would have witnessed so strong a demonstration on the part of Lubbock, Robinson, Sedgwick and many others, . . . you would have perceived that 'coute que coute' [at all costs] it was absolutely essential for the peace of the Association to select on the next occasion, wherever the rendezvous might be, some *cultivator* of science. It struck me that no one except Herschel could obviate all the difficulties.⁸⁶

Herschel, having initially accepted Murchison's offer of the British Association Presidency at the beginning of August, had, by the end of the month refused this office, too.⁸⁷ Commenting bitterly on Herschel's refusal to accept either the Presidency of the Royal Society or that of the British Association, Murchison remarked:

'He has better things to do for want of nerve, is as unsuited to it (the RS presidency) as to lead in the British Association. These things we learn as we move on. Every man of science is now aware of the failings of the Astronomer'.⁸⁸

Nevertheless, Herschel was still in demand. Whewell, having congratulated Herschel on escaping the Presidency of the British Association, then entreated him to become President

⁸⁵ Murchison to Herschel, 21 June 1838, The Sir John Herschel Collection 2032, <https://epsilon.ac.uk/view/herschel/letters/Herschel12032>

⁸⁶ Murchison to Harcourt, 18 July, 1838, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, pp. 265.

⁸⁷ Murchison to Babbage, 3 August 1838, and Northampton to Harcourt, 27 August 1838, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, pp. 269, 279.

⁸⁸ Murchison to Harcourt, 4 September, 1838, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 287.

of the Geological Society.⁸⁹ This he also declined.⁹⁰ Finally, in January 1839, Baily wrote to Herschel explaining that the Council of the Royal Astronomical Society could not be dissuaded from nominating Herschel for President – a position which he accepted.⁹¹ It might have struck Herschel as ironic that he had been offered the Presidency of three eminent societies (Royal, Geological, Astronomical) by their retiring Presidents (Sussex, Whewell, Baily) in the same manner as Davies Gilbert had sought to pass on the Presidency of the Royal Society to the Duke of Sussex eight years previously. ‘Mr Gilbert . . . ought at least not to be suffered to imagine that he can hand it over like a rotten borough to any successor by his ipse dixit’, Herschel had remarked at the time.⁹² The reformers of 1830, now the scientific Establishment, were acting in the same autocratic manner as those they had criticised at the end of the previous decade.

Only six Council members were present on 14 September, 1838, when a letter of resignation from the Duke of Sussex, dated 17 August, was read to the meeting.⁹³ One of these was Spencer Joshua Alwyne Compton, Marquis of Northampton, making, late in the year, his first appearance at a Council meeting. At the next Council Meeting, held on 1 November, he was nominated as ‘the person whom the Council recommend to the Society for election as President for the ensuing year’.⁹⁴ A motion that ‘in future no person be elected to the Office of President for more than five successive years’ was ‘negated’.⁹⁵ The Duke’s letter of resignation was to be forwarded to each Fellow and it was ‘resolved unanimously that the Council greatly deplore the announcement of His Royal Highness’s intention to

⁸⁹ Herschel to Whewell, December? 1838 and 3 December 1838, The Sir John Herschel Collection 9096 -<https://epsilon.ac.uk/view/herschel/letters/Herschel9096> and 9101 - <https://epsilon.ac.uk/view/herschel/letters/Herschel9101>

⁹⁰ Herschel to Whewell, 5 December 1838, The Sir John Herschel Collection 4611, <https://epsilon.ac.uk/view/herschel/letters/Herschel4611>

⁹¹ Herschel to Baily, 20 January 1839, The Sir John Herschel Collection 6024, <https://epsilon.ac.uk/view/herschel/letters/Herschel6024>

⁹² Herschel to Fitton, 18 October 1830, Royal Society Herschel Collection 25.1.9.

⁹³ Minutes of the Council of the Royal Society, 14 September 1838, Royal Society Archive CMO/12.

⁹⁴ Minutes of the Council of the Royal Society, 1 November, 1838, Royal Society Archive CMO/12.

⁹⁵ Ibid.

resign the office of the president at the ensuing Anniversary'.⁹⁶ The members of the Council to be recommended to the Society for election at the Anniversary Meeting were decided by ballot. Included in the list of names was John William Lubbock who was, perhaps pointedly with the departure of Sussex, recommended for election as Treasurer, once again.⁹⁷

The Duke of Sussex did not attend the Anniversary Meeting on 30 November. His long letter of resignation was read to the meeting by Francis Baily. Explaining his decision to resign the Duke stated that 'though justly proud of the distinction of presiding over the Royal Society . . . I ascertained that circumstances would . . . prevent my receiving its members in a manner compatible with my rank and position in this country . . . I determined to retire from an office whose duties I could no longer flatter myself as likely to be able to discharge in a manner answerable to their expectations or in accordance with my own feelings.'⁹⁸ The circumstances alluded to concerned a lack of sufficient money, from the civil list, to cover the cost of entertaining the Fellows at Kensington Palace. The Duke's letter elicited much negative comment. 'We doubt whether any ancient proser in petticoats could perpetrate sorrier twaddle than His Royal Highness has produced on this occasion', was the comment in *The Times*.⁹⁹

The Duke . . . is obliged to give up the Presidency of the Royal Society, because he is dreadfully poor – wretchedly poor – miserably poor. Poor Prince! Eighteen thousand a-year, with a palace and a thousand other accessories found him gratuitously, seem nothing . . . Let us ask what are the expenses incurred by the President of the Royal Society? A certain number of gentlemen known about town as philosophers meet for a few hours now and then to talk over the literary news of the day, and drink, if they like it, a cup (or two perhaps) of tea . . . In the times of other Presidents these meetings used to be held *once-a-week*, without ceremony . . . Now they form a kind of court . . . to which special invitations are issued on huge

⁹⁶ Ibid.

⁹⁷ Ibid.

⁹⁸ *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive* (London, 1843), p. 86.

⁹⁹ *The Times*, 24 September 1838.

ostentatious card; but as to their number, we believe there are not one tenth of the meetings during the season that there were in Sir Joseph's [Banks] time.¹⁰⁰

The Times's comments were supported by 'An old Fellow of the Royal Society' using the newspaper to make a public reply to the Duke's letter lest 'our silence be construed into assent':

'I have . . . attended, I believe, all the soirees at your Royal Highness's residence for which I was honoured with an invitation, and I think I may say that these have not amounted to four altogether . . . I can only say, that the meetings which I attended, though perhaps too few in number, were conducted with plain, if not frugal, good taste . . . I do not conceive that the additional annual expense could exceed 200*l*, and it should not. Men of science may *calculate*, but they do not expect to *sup* by *Gunter's* [logarithmic] *scale*.¹⁰¹

Thus the Duke of Sussex departed under something of a cloud. For the previous five years he had not presided over the Royal Society in any meaningful sense but successive Councils, dominated by the reformers of yesteryear, had shown no desire to replace him. The new President, the Marquis of Northampton, was an aristocrat but, as argued for by Lubbock and others, one with some scientific credentials (as a Geologist). *The Times* reported that at the Anniversary Dinner Northampton paid a 'just and warmly applauded tribute to . . . the late President'. 'The noble marquess', it continued, 'expressed his earnest desire . . . to follow so illustrious an example'.¹⁰² Neither his station within the aristocracy nor his scientific eminence would be sufficiently high, however, for him to be able to act autocratically in the manner of the Royal Duke, Sussex. Neither, it seems, would the 'amiable' and 'conciliatory' Marquis have wished to do so, anyway.¹⁰³ Northampton's leadership style, together with the

¹⁰⁰ *The Times*, 3 October 1838.

¹⁰¹ *The Times*, 8 October 1838.

¹⁰² *The Times*, 1 December 1838.

¹⁰³ Granville, A.B., *Autobiography of A.B. Granville, M.D., F.R.S.* (London: King and Co. 1874), p. 222; MacLeod, 'Whigs and Savants', p. 71.

changes to be discussed in the two sections which follow, can be seen as setting the Society on a path towards the statute revision of 1847.

5.5 Scientific Committees

One Council decision, worthy of particular note, was taken during Baily's final year. On 10 May, 1838, it was decided to establish permanent committees, each with seven members, to advise on specific matters relating to each of the six branches of science which had been chosen as categories for the adjudication of the Royal Medals.: astronomy, chemistry, geology and mineralogy, mathematics, physics and physiology. At the subsequent meeting, (31 May), the number of branches was increased to eight with the addition of meteorology and the separation of physiology into botany/vegetable physiology and zoology/animal physiology. Committees could now include up to fifteen individuals and, as a result, 96 different men were nominated to serve on one or more of them.¹⁰⁴ While many of these (46) had been members of the Royal Society Council, over half (50) had not. The metropolitan base of these committees facilitated their regular meeting in a manner which had not been possible with the British Association sectional committees which could only 'report [to a Committee of Recommendations] what subjects . . . they would particularly recommend to be prosecuted in the ensuing year'.¹⁰⁵ Association Assistant Secretary, John Phillips, commented that 'the Royal Society is now copying our plan of committees of science', while at the same time regretting that 'we have never yet got our committees into the state of life and reality which was proposed at the York meeting'.¹⁰⁶ The Society's scientific committees

¹⁰⁴ Minutes of the Council of the Royal Society, 10 and 31 May, 1838, Royal society Archive CMO/12. Eight men were nominated for two committees; Lubbock and Whewell for three each and Herschel, recently returned from South Africa, for four.

¹⁰⁵ *Report of the Seventh Meeting of the British Association for the Advancement of Science* (London: John Murray, 1838), vi, vii.

¹⁰⁶ Phillips to Harcourt, 7 July 1838, as printed in Morrell and Thackray, *Gentlemen of Science. Early Correspondence*, p. 264.

were reappointed by the Council for on 13 December 1838 with instructions to choose a Chairman and Secretary. It was 'highly desirable', the Council stated, 'that the . . . Committees should report progress at the Anniversary, or oftener, in each year'.¹⁰⁷

It was at the Council meeting of 13 December 1838 that a joint committee of Physics and Meteorology was asked to report on 'the propriety of recommending to Her Majesty's Government the prosecution of Magnetical Observations in various parts of the world, and by sending an expedition to the vicinity of the South Pole'. The Council's action, in making this request, had resulted from concerted lobbying from a group of Fellows, not on the Council, which had been made possible through their being members of the Committees. Led by Major Edward Sabine, these included Humphrey Lloyd, John Phillips and the veteran of recent Arctic expeditions, Captain James Clark Ross. All had been active in the magnetic survey of the 'British islands', as reported to the British Association meeting earlier in the year.¹⁰⁸ Lubbock had himself, at various stages, been a member of committees on magnetism of the British Association as it sought to involve itself in Alexander von Humboldt's endeavour to measure magnetic variation throughout the world.¹⁰⁹ For this reason, John Cawood, in his study of the political manoeuvring surrounding the 'magnetic crusade', includes Lubbock as one of the ten members of what he terms the 'Magnetic Lobby'.¹¹⁰ On 22 December the Council accepted the report of the joint committee, delivered by its chairman, Herschel, and resolved to request a meeting with Prime Minister Melbourne. Northampton, who would

¹⁰⁷ Minutes of the Council of the Royal Society, 13 December 1838, Royal Society Archive CMO/12.

¹⁰⁸ *Report of the Eighth Meeting of the British Association for the Advancement of Science*, (London: John Murray, 1839) pp. 49-196.

¹⁰⁹ Cannon, S.F., *Science in Culture: The Early Victorian Period* (Dawson: Folkestone, 1978), pp. 81, 238-39; Cawood, J., 'Terrestrial Magnetism and the Development of International Collaboration in the Early Nineteenth Century', *Annals of Science* 34 (1977), pp. 584-85.

¹¹⁰ Cawood, J., 'The Magnetic Crusade: Science and Politics in Early Victorian Britain', *Isis* 70 (1979), pp 498, 501. The other men Cawood includes in his 'Magnetic Lobby' are: Baily, Beaufort, Gilbert, Herschel, Lloyd, Peacock, Ross, Sabine, Whewell.

be 'out of town' for the festive period, asked Melbourne to communicate with Lubbock, who would be in London at this time.¹¹¹

On Saturday 5 January 1839, as reported in *The Times*, Lubbock led a deputation from the Royal Society to meet with Prime Minister Melbourne in Downing Street to recommend 'the equipment of a scientific expedition to the southern regions'.¹¹² In addition to 'Mr J.W.Lubbock, Vice-President', the deputation consisted of, the paper stated, 'P.M. Roget, M.D., and Mr S.H. Christie, Secretaries: Sir John F.W. Herschel, Chairman; and Major Sabine and Mr Charles Wheatstone, Secretaries of the Physical and Meteorological Committees of the Royal Society'.¹¹³ Morrell and Thackray describe the pressure for government funding for this expedition as the 'most spectacularly successful' of British Association lobbies. While it is true that the Association had been pressing for the establishment of geomagnetic observatories for some years and there had been informal meetings with government, Morrell and Thackray underplay Royal Society involvement at this critical time.¹¹⁴ Herschel, Sabine and Wheatstone are the only members of the deputation they mention by name.¹¹⁵ They do not state that they were present as officers of a *Royal Society* committee. John Cawood, too, mentions only the same three names although he does note that the government would not act until the Royal Society, (which, Herschel was told by Lord Minto, 'carried more weight' than the British Association), was seen to be in favour of the venture.¹¹⁶ Morrell and Thackray consider the support of the Royal Society to have been 'valuable'. It was more than this, however: it was indispensable.¹¹⁷ Lubbock,

¹¹¹ Northampton to Herschel, 31 December 1838, The Sir John Herschel Collection 4174, <https://epsilon.ac.uk/view/herschel/letters/Herschel14174>

¹¹² *The Times*, 7 January 1839.

¹¹³ *Ibid.*

¹¹⁴ Morrell, J.B. and Thackray, A., *Gentlemen of Science: Early Years of the British Association for the Advancement of Science* (Oxford: Oxford University Press, 1981), p. 353.

¹¹⁵ *Ibid.*, p. 365.

¹¹⁶ Cawood, 'The Magnetic Crusade', p. 510. Cawood quotes Herschel's diary entry for 23 November 1838. The Earl of Minto was First Lord of the Admiralty under Melbourne.

¹¹⁷ M and T., p. 366

who was at this time closely associated with the Whig government and, in particular, with its Chancellor of the Exchequer, Thomas Spring Rice (see Chapters 3 and 6), is unlikely to have had an insignificant role in swaying opinion in favour of the proposals.

The following month (January 1839) Lubbock was able to inform the Council that Prime Minister Melbourne had received a Royal Society deputation and had stated that 'the subject should be well considered by Her Majesty's Government and that the objects of the Council ought to be carried into effect, unless some great difficulty stood in the way'.¹¹⁸ This led to the departure, in September 1839, of Captain Ross on his expedition to Antarctica. The other committees were asked to provide suggestions for 'other scientific purposes' to which Ross's 'voyage of discovery' could be put.¹¹⁹ 'The hints and instructions', Northampton was later able to tell Fellows, 'would have been far less extensive and efficient if the Council had not been able to have recourse to the several Scientific Committees'.¹²⁰

The Scientific Committees were soon given a formal role in Society organisation with a resolution by the Council in April 1839, on a proposal by John Frederic Daniell, that the Committees should be responsible for recommending whether papers in their subject, which had been read to the Society and prepared in abstract for the *Proceedings*, should be printed in the *Philosophical Transactions*.¹²¹ As the Anniversary Meeting of 1839 approached, all committees were asked for recommendations in their subject for the award of the Copley Medal. Robert Brown, the suggestion of the Joint Committees of Botany and Vegetable Physiology and of Zoology and Animal Physiology (in total, some thirty individuals), received the award for his 'discoveries during a series of years on the subject of Vegetable Impregnation'.¹²² The final decision, however, had been that of the Council which resolved

¹¹⁸ Minutes of the Council of the Royal Society, 10 January 1839, Royal Society Archive CMO/12.

¹¹⁹ Minutes of the Council of the Royal Society, 13 June 1839, Royal Society Archive CMO/12.

¹²⁰ President's Address at the Anniversary Meeting of 1839, *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive* (London, 1843), p. 169.

¹²¹ Minutes of the Council of the Royal Society, 11 April 1839, Royal Society Archive CMO/12.

¹²² Minutes of the Council of the Royal Society, 7 November 1839, Royal Society Archive CMO/12.

the issue by ballot.¹²³ Similarly, the Committees were not themselves able to add to their number without doing so through recommendation to the Council. A further measure of control was provided by the early decision (April 1839) that all the Society's officers were to be *ex officio* members of all committees.¹²⁴

'Those committees', Northampton stated at the Anniversary meeting, 'have now been found capable of doing excellent service'.¹²⁵ The committees added an additional tier to Society management and a more-accessible rung on the ladder leading to a senior position within it for new men if they could demonstrate their worth. In the two years following their creation thirteen men were elected to the Council for the first time: five in 1838/39 and no fewer than eight (out of a possible ten) in 1839/40, the latter figure being over twice the average for the earlier years of the decade.¹²⁶ Of these 'new men', all but one had served on a scientific committee.¹²⁷ This influx led to the Society leaving the 1830s with a Council over half of whom had been elected for the first time in the past two years. Included amongst them was the Secretary who would replace Roget in 1848, Thomas Bell. 1839/40 also saw the return to the Council, after an interval of eleven years, of Edward Sabine (future Foreign Secretary and President), involved once more in Society management through serving on the Physics Committee.

¹²³ Minutes of the Council of the Royal Society, 21 November 1839, Royal Society Archive CMO/12.

¹²⁴ Minutes of the Council of the Royal Society, 11 April 1839, Royal Society Archive CMO/12.

¹²⁵ *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive*, p. 170.

¹²⁶ 38/39: Galloway, Graham, Kiernan, Todd, Willis; 39/40: Bell, Davy, Donkin, Forster, Owen, Phillips, Taylor. The mean number of 'new men' each year, 1830/31-1837/38, is 3.6.

¹²⁷ Minutes of the Council of the Royal Society, 31 May 1839, Royal Society Archive CMO/12. The fourteen were: Thomas Bell, John Davy, Bryan Donkin, Edward Forster, Thomas Galloway, Thomas Graham, Francis Kiernan, Lord Oxmantown, Richard Owen, Richard Phillips, Ernest Sabine, Richard Taylor, Robert Todd, Robert Willis. Only Donkin was not a member of a scientific committee in 1837/38.

5.6 Election Certificates

On 9 May 1839 the Council resolved to appoint a committee comprising all its members to 'draw up a set of forms for Certificates of persons desirous of being proposed as Candidates for admission into the Society, and also to recommend such measures as may be desirable to be adopted on such occasions'.¹²⁸ The forms were to replace the blank sheets which had been in use since December 1730 when the Fellows approved a new statute requiring those proposing a candidate to 'deliver to one of the secretaries a paper signed by themselves' and signifying, in addition to personal details of the candidate, his 'chief qualifications'.¹²⁹ The Society, Maurice Crosland noted, thus 'formalized' the idea that 'candidates for admission should have a 'special claim to scientific knowledge'.¹³⁰ Crosland analysed the terms used to describe scientific attainment from 1730 onwards and detected, at the beginning of the nineteenth century 'signs of the qualification criterion being taken more seriously' by those writing out the certificate.¹³¹ Nevertheless, as has been discussed in earlier chapters, there was, by the 1820s, growing concern amongst scientific Fellows at the 'facility of admission'. This had prompted the appointment, in 1827, of a committee to 'consider the best means of limiting the members admitted'. A decision on the committee's recommendation that no more than four new Fellows should be admitted annually was repeatedly postponed and then quietly forgotten during the Presidency of Davies Gilbert. Under Sussex, Lubbock's Charter Committee which reported in May 1831, concerned at the financial implications for the near-bankrupt Society of restricting membership, recommended what amounted only to cosmetic changes such as the requirement for a candidate to have six proposers rather than

¹²⁸ Minutes of the Council of the Royal Society, 9 May 1839, Royal Society Archive CMO/12.

¹²⁹ Crosland, M., 'Explicit Qualifications as a Criterion for Membership of the Royal Society: A Historical Review', *Notes and Records of the Royal Society of London* 37 (1983), p. 168.

¹³⁰ *Ibid.*, p. 167.

¹³¹ *Ibid.*, p. 174.

just three. The Society's return to the question of admission at the end of the decade, therefore, is of particular interest.

There is no record of the composition of the committee appointed, or of its deliberations, but on 25 July 1839, 'a form of certificate, agreed upon by the committee . . . was presented and adopted by the Council' and came into use from the November. The candidate required six proposers to nominate him either from their 'personal' or 'general knowledge' with the requirement that at least three should be in the former category. The personal details of the candidate were to include 'Name', 'Title or Designation', 'Profession or Trade' ('*none*' was to be inserted if applicable) and 'Usual Place of Residence'. A five-part section, bracketed 'Qualifications as being', then followed. In this the proposers were asked to provide evidence in support of the candidate. The contents of this section are shown below alongside the 'Directions for filling up the Certificate of a Candidate' which were provided on the reverse of the form. In effect, these directions constituted the Society's first set of criteria for admission.¹³²

(Certificate entry)	(Directions – on reverse side)
Qualifications as being:	Claim for admission:
The Discoverer of . . .	As one who has made discoveries in some branch of science, which should be specified.
The Author of . . .	As the author of a work or paper of merit, connected with science, the title of which should be stated.
The Inventor or Improver of . . .	As one who has invented or materially improved any astronomical, mathematical or philosophical instrument, or chemical process which should be specified.

¹³²Taken from the election certificate of James Annesley, elected 30 January 1840. Royal Society Archive EC/1840/04.

Distinguished for his
acquaintance
with the science of . . .

As one distinguished for his acquaintance with some
branch of science, which should be specified.
As a person eminently distinguished in one of the
learned professions.
As a distinguished Engineer, Architect, Painter,
Sculptor or Engraver.
As one distinguished for his literary or
archaeological attainments
As one who is attached to science, and anxious to
promote its progress.

Eminent as a . . .

President Northampton explained to Fellows at the Anniversary Meeting of 1839 that the old testimonial of recommendation for new Fellows had ‘scarcely been sufficiently definite and precise in stating the grounds on which the candidate was recommended to the body of the Society’.¹³³ The new forms would be ‘more fair . . .to the meritorious candidate and to those electors who are otherwise left in the dark with respect to his claims for their suffrages’.¹³⁴ ‘We hope and trust that that this new regulation will not stand in the way of any candidate who would be a desirable addition to our number’, he added.

It is evident that the form placed a high value on original scientific work. In the absence of this the candidate should ideally be ‘distinguished for his acquaintance’ with a ‘branch of science’ or, at the very least, associated in some way with learning. The emphasis is on scientific merit as the principal criterion for admission but the form does not deny membership to representatives of the Arts. Not for the first time in matters connected with how the Royal Society chose to organise itself in this period, the status accorded to the subjects of Astronomy and Mathematics is evident. The first candidate successfully proposed for admission using this certificate was the Nonconformist and Geologist, John Pye Smith,

¹³³ *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive*, p. 171.

¹³⁴ *Ibid.*

who was elected on 23 January 1840.¹³⁵ Smith, the certificate stated, was the author of ‘a book on the Relation between the Holy Scriptures and some Parts of Geological Science’. He also became the first of many candidates to be described, using the final ‘claim for admission’, as ‘attached to science and anxious to promote its progress’. In general, the structure of the form discouraged the nomination of non-scientific men. A casual examination of those elected in the early 1840s would seem to suggest that it achieved some success in this regard although Crosland was able to point to several instances where proposers were able to make creative use of the suggested claims for admission in putting forward candidates whose acquaintance with science was strictly limited.¹³⁶ The new form did not reduce the numbers admitted annually and it would seem unlikely that this was the aim. In fact, as Aileen Fyfe has shown, Society membership reached a nineteenth-century peak in this period.¹³⁷ The production of the certificate did, however, signal the Society’s desire for its membership to be predominantly scientific. One of the first to be elected under the new system was William Grove, (elected November 1840): ‘The Author of various papers on the subject of Voltaic Electricity; the Improver of the Voltaic Battery; Distinguished for his acquaintance with the science of Electricity’.¹³⁸

It is not clear why this measure was introduced at this particular time. Was Northampton, himself of modest scientific accomplishments and in his first year as President, anxious to make his mark? This would seem unlikely since he attended barely half of the Council meetings in that year and was not present in the period when the new form was devised. Lubbock, as ever, attended all the meetings, taking the chair when Northampton was absent, including at the meeting which adopted the new form. It is perhaps significant

¹³⁵ John Pye Smith Election Certificate, Royal Society Archive EC/1840/01.

¹³⁶ Crosland, ‘Explicit Qualifications’, pp. 181-82.

¹³⁷ Fyfe, A., ‘Journals, Learned Societies and Money: *Philosophical Transactions* ca 1750-1900’, *Notes and Records of the Royal Society* 69 (2015), p. 281. The Society’s membership is considerably larger today.

¹³⁸ William Grove Election Certificate, Royal Society Archive EC/1840/32.

that by 1839, as a result of Lubbock's complete overhaul of finances, the Society was on a secure financial footing and concerns about loss of income from admission fees, in consequence of the discouraging of non-scientific candidates, had lessened. At the Anniversary Meeting of that year, Treasurer Lubbock set out for Fellows in his report the likely balance between income and expenditure in a typical year. 'The clear annual *income*, therefore,' he stated in summary 'which may for some time be expected . . . is about £2386, or without the Admission Fees and Compositions £1546, and the probable amount of *ordinary* expenses £1767'.¹³⁹ In 1846, the year after Lubbock's resignation as Treasurer, reformers would, as Gleason notes, use his analysis to show that the financial consequences of limiting admission would not place the institution in difficulty.¹⁴⁰

The form was used unaltered for 25 years, even after the reforms of 1847. The significance of these reforms, therefore, was not that the Society's admission criteria were changed, rather that the number of new Fellows who could be elected each year was restricted to fifteen, all to be elected at a June Annual Meeting (itself an innovation) thus facilitating the selection of the more scientific candidates. These candidates now became, as Crosland observed, 'in some sense rivals'.¹⁴¹ It also became incumbent upon proposers to look to provide evidence of their candidate's scientific attainment, increasingly in the form of his publications. Essentially the same form was in use over one hundred years later – into the 1950s. It should be noted that the new system of 1839 did not apply to members of the nobility who, as previously, could be proposed and elected at the same meeting provided that prior notice had been given to Fellows. No change to this arrangement would be made in 1847.

¹³⁹ *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive*, p. 184.

¹⁴⁰ Gleason, *The Royal Society of London*, p. 251.

¹⁴¹ Crosland, 'Explicit Qualifications', p. 182.

5.7 Concluding remarks

This chapter has attempted to identify and elucidate some of the changes in the organisation of the Royal Society in the 1830s which together contributed significantly to the institution's being persuaded to accept statute revision in 1847. The Duke of Sussex was essentially an autocratic ruler, albeit one who was content to delegate to Society Officers, and there was always the acknowledgement and acceptance by the Council that decisions it made required Presidential sanction. Lubbock's very public resignation in November 1835 highlighted the lack of effective leadership caused by Sussex's absence. Successive Councils, however, in spite of by now being dominated by the reformers of 1830, found themselves unwilling or unable to accept the President's insincere offers to abdicate. The decision to recommend the election of Northampton in 1838 was as a result of pressure from Lubbock and others to appoint scientific men to lead scientific institutions. For reasons to do with personality and with status, both as an aristocrat and as a man of science, Northampton was never able to act autocratically in the manner of Sussex. In the next decade, reformers on a now more powerful Council, led by William Grove and Leonard Horner, would be able to introduce limitation on admissions against the Presidents wishes. Horner was able to use Lubbock's 1839 analysis of Society finances to show that the proportion of non-scientific Fellows could be reduced without financial difficulty. The scientific committees brought into the management of the Society new men, previously on the periphery. Many of these quickly found their way onto the Council. As the Society entered the 1840s, therefore, the Council was becoming less self-perpetuating and more inclusive. The Election Certificate, devised in 1839 by a Council under Lubbock's chairmanship, provided, for the first time, an objective means of comparing the scientific credentials of candidates and placed a premium on original work and publication as criteria for admission. It encouraged the election of scientific men while not totally discouraging the admission of others.

Towards the end of 1840 William Grove was elected to the Royal Society. His certificate, one of the first of the new type, was written out by Council member, Richard Phillips, himself one of a number of 'new men' appointed for the first time to the Council in that year after serving on a scientific committee. In 1843, Grove published, anonymously in *Blackwood's Magazine*, what amounted to an attack on organised science, in general, and on the Royal Society, in particular. He concluded his article with a parting shot at the Society and its Certificate: 'We should like to see an English Academy, constituted of men having fair claims to scientific distinction, and not "deserving of that honour because they are attached to science"'.¹⁴² The Certificate devised in 1839, however, with the addition of the strict limit on numbers which Grove was successful in introducing in 1847, became the basis of an election system that produced, by the end of the 1860s, a Society consisting predominantly of scientific Fellows.

¹⁴² Grove, W. R., 'Physical Science in England', *Blackwood's Magazine* 54 (1843), p. 52

Chapter 6. The foundation and early years of the University of London

6.1 Introduction

On 7 June, 1842, the Earl of Burlington, Chancellor of the University of London, now in its sixth year of existence, wrote to University Senate member J G Shaw Lefevre as follows:

You will have seen by the notice sent to the Members of the Senate that Sir John Lubbock does not wish to be re-elected to the office of Vice-Chancellor for next year. On looking through the list of our members it appears to me that we could not choose a fitter successor to him than yourself, and I am anxious to know whether if elected you would object to fill the office for the ensuing year. The number of our meetings has latterly diminished very considerably, and unless anything unexpected should occur, there is no reason to suppose there will be any increase of business during next year. Though it cannot be said that the presence of the Vice-Chancellor is absolutely necessary, yet it is certainly desirable he should usually be able to attend.¹

The number of Senate meeting had, indeed, diminished by this time and would settle at a frequency of roughly one meeting each month. Between April 1837 and mid-June 1842, however, the Senate had come together on 140 occasions as it strove to overcome the difficulties in establishing a new institution.² In this period, the presence of the Vice-Chancellor, John William Lubbock, *had* been absolutely necessary. He had attended no fewer than 137 of these meetings and had taken the chair, in the absence of the Chancellor, 82 times. In addition, he had chaired numerous sectional committees and had acted as the University's first Treasurer.

Two works published in celebration of the University's sesquicentenary in 1986 examined different aspects of this period in its history. Negley Harte's *The University of London 1836 – 1986: An Illustrated History* provided a conventional account of the background and early years focusing on central figures, organisation, finance and other

¹ Earl of Burlington to J G Shaw Lefevre, 7 June 1842, as quoted in Wilson, F.M.G., *A Strong Supporting Cast, The Shaw Lefevres 1789-1936* (London: The Athlone Press, 1993), p. 111.

² Minutes of the Senate of the University of London, 5 April 1837 to 15 June 1842, University of London Archive UoL/ST2.

administrative details.³ *The University of London and the World of Learning, 1836-1986*, a collection of essays by distinguished academics and edited by F.M.L. Thompson, set the developments within the various faculties (initially these were Arts, Medicine and Law) against a wider background of human knowledge.⁴ While both could be said to suffer to a degree from what has been termed ‘jubilee syndrome’ – overly self-justificatory and with a limited consideration of wider contexts – these two texts, with their differing emphases, bring the reader closer to an understanding of the processes which created the University.⁵ Each, however, admitted to providing only a ‘sketch’ of 150 years of history, of which the foundation years were just a small, if important, part.⁶ This chapter will focus on the University’s crucial first years and highlight the pivotal role of its Vice-Chancellor, John William Lubbock, (Sir John, 3rd Baronet, after the death of his father in 1840), in the processes by which the institution was created. It is complementary to the rest of the thesis for two main reasons. Firstly, the chapter draws scholarly attention to a neglected feature of the organisation of science in the 1830s – the introduction of a substantial and compulsory element of science into a university degree in England. Secondly, it provides a further illustration of Lubbock’s leadership in a key organisational role, made possible by his position within society and the scientific world. Lubbock’s vision for the University would reflect not just his ideas for a disciplinary approach to science, one in which mathematics occupied a prime position, but also his Whig liberal Anglican viewpoint, facilitating non-Anglican participation and rejecting attempts to introduce theology into the degree.

³ Harte, N., *The University of London 1836 – 1986: An Illustrated History* (London: The Athlone Press, 1986).

⁴ Thompson, F.M.L. (ed.), *The University of London and the World of Learning, 1836-1986* (London: The Hambledon Press, 1990).

⁵ Ostling, J., *Humboldt and the Modern German University: An Intellectual History* (Lund: Lund University Press, 2018), p. 3.

⁶ Harte, *The University of London 1836-1986*, back cover; Thompson, *The University of London and the World of Learning*, xxiii.

The foundation of University of London was seen by the Whig government which brought it into being as a means of reconciling the competing interests of University College (calling itself at the time, London University, but without a Charter authorising it to award degrees) and King's College. Also, they hoped it would provide, for the first time, a university education in the Metropolis which, unlike that at the ancient universities of Oxford and Cambridge, would be open to students of all faiths and be within the means of young men of modest financial circumstances. It would be, as Bjorn Wittrock observes 'the first new university in England since the middle ages' and one which would come to function, he suggests, 'as a kind of benchmark for academic examinations not only throughout England but throughout the British Empire'.⁷ While its BM and DM degrees were milestones in medical education, its BA degree would be, unquestionably, a landmark in university education in Britain: 'an innovation of outstanding audacity', in the words of F.M.L. Thompson, seemingly alone amongst historians in recognising the true significance of its novel syllabuses.⁸ For the first time in England, science subjects, and also some element of modern languages, became compulsory requirements for the degree.⁹

The Senate members who devised the new degree syllabuses were government, (strictly speaking, Crown), appointments and these 'persons eminent in literature and science' were presented with, in many respects, a blank canvas by the First Charter which was sealed by King William IV on 28 November, 1836.¹⁰ 'We have deemed it to be the duty of Our royal office', the Charter began, 'for the advancement of Religion and Morality, and the promotion of useful knowledge, to hold forth to all classes and denominations of Our

⁷ Wittrock, B., 'The Modern University: The Three Transformations' in Rothblatt, S. and Wittrock, B. (eds), *The European and American University since 1800* (Cambridge: Cambridge University Press, 1993), p. 338.

⁸ Thompson, *The University of London and the World of Learning*, xi, p. 62.

⁹ *Ibid.*, pp. 62-63.

¹⁰ 'Memorial to the Council of London University, 19 August 1835', printed in *University of London. The Historical Record (1836-1912)* (London: University of London Press, 1912), p. 8.

faithful subjects, without any distinction whatsoever, an encouragement for pursuing a regular and liberal course of education'.¹¹ Robert Anderson considers this to have established for the first time in England, that 'university education could be detached from religion' but, as can be seen from its opening words, the Charter itself was more than a little ambiguous in this regard.¹² Members of the Senate were charged with 'ascertaining, by means of examinations, the persons who have acquired proficiency in Literature, Science and Art' and they were to examine candidates in 'as many branches of general knowledge' as they considered 'fitting'.¹³ Candidates, initially only from 'Our College called University College or from Our College called King's College', would need to present a certificate from their institution to the effect that they had 'completed the course of instruction' which the Senate would determine. It was for the Senate, therefore, to interpret the Charter and bring the University into being. This chapter will examine how the Senate members were chosen and who amongst them were the key individuals. Also, how they went about devising a 'liberal course of education'. Two elements of this would be crucial to the identity of the new body and will be discussed in some detail. Firstly, the development of a secular (rather than non-denominational) syllabus for the BA, relegating Theology to having the status of an optional additional certificate not part of the degree. Secondly, the inclusion of compulsory subjects, particularly science, as requirements both for the BA degree and for matriculation in all faculties including Law and Medicine. The new knowledge which the Senate chose to include in the University's examination syllabuses would have a profound effect on education nationally.

Historians seem to be in general agreement that the nineteenth century was a period of significant change for university education and a number have turned their attention to

¹¹ 'First Charter of the University of London, 28 November 1836', printed in *University of London. The Historical Record (1836-1912)*, p. 26.

¹² Anderson, R., *British Universities Past and Present*, (London: Hambledon Continuum, 2006), p. 28.

¹³ *Ibid.*, pp. 26-27; First Charter of the University of London, 28 November 1836'.

it. Wittrock, for example, sees this as a period in which there was a transformation of universities 'from institutions for the transmission of a received body of knowledge . . . into research-oriented institutions'.¹⁴ He identifies a 'great transition' from the late eighteenth century up until the 1830s in which there was a challenge to traditional philosophies which were 'gradually superseded by new forms of disciplined and mathematical thinking'.¹⁵ Similarly, Ronald Barnett sees the 'metaphysical university', with its origins in antiquity and which represented 'an institutional means of gaining transcendence from this world', giving way in the nineteenth century to the 'scientific university', characterised by 'scientific method and objectivity' and in which scientific knowledge occupied a dominant position.¹⁶ Much of the historiography focuses on Europe, particularly the 'Humboldtian tradition' in Germany and other countries influenced by this model from the beginning of the nineteenth century.¹⁷ The 'pedagogic vision' of Wilhelm von Humboldt, John Ostling suggests, was for a university which was the abode of scholarship and science, teaching and research.¹⁸

By contrast, in England in the 1830s, university education continued to be, in words of David Willetts, 'uniquely dominated', as it had been for centuries, by Oxford and Cambridge, resisting moves to establish degree-awarding rivals or to modernise their own practices.¹⁹ The creation of London University (UCL) in 1826 provided the capital with a 'secular liberal higher education institution' but one which was unable to award degrees, merely 'certificates of completion of a course'.²⁰ The founding of the University of London solved this problem by placing a university structure above UCL and also King's College, thus separating examining from teaching, as at the Oxbridge Colleges.²¹ Stefan Collini, while

¹⁴ Wittrock, 'The Modern University', p. 303.

¹⁵ Ibid., pp. 21, 30.

¹⁶ Barnett, R., *Being a University* (Abingdon: Routledge, 2011), pp. 15, 16, 21, 30.

¹⁷ Ostling, *Humboldt and the Modern German University*, p. 9.

¹⁸ Ibid., pp. 33, 34, 40.

¹⁹ Willetts, D., *A University Education* (Oxford: Oxford University Press, 2017), p. 2.

²⁰ Ibid., p. 22.

²¹ Ibid.

noting the founding of UCL and of King's, omits the establishment of the University of London from his 'very short history' of Universities in Britain.²² 'The sleepy monopoly of Oxford and Cambridge was not seriously challenged', he suggests, until the 'mid- and late-Victorian period' when they were reformed.²³ And yet, the birth of an institution, in 1836, which recognised new subjects like science as worthy of a place in a university, and which enabled not only Dissenters but also Catholics and even Jews to obtain a university degree, is deserving of mention even in the briefest of accounts.

In the following section, 'London University' is the institution that would become UCL – Whig/Radical sponsored and founded upon secular principles in 1826. Its rival, King's College, Tory and Anglican, was founded in opposition to the London University two years later. Detailed accounts of the foundation of these two bodies are to be found in H. Hale Bellot's *University College London, 1826-1926*, and F.J.C. Hearnshaw's *The Centenary History of King's College London, 1828-1928*.²⁴ Historiographical confusion between 'London University' (UCL from 1836) and the 'University of London' is common. Even Thompson implied, perhaps unintentionally but nonetheless erroneously, that there was some organisational continuity between the two institutions.²⁵

²² Collini, S., *What are Universities for?* (London: Penguin, 2012), pp. 27-28.

²³ Ibid.

²⁴ Hale Bellot, H., *University College London, 1826-1926* (London: University of London Press, 1929); Hearnshaw, F.J.C., *The Centenary History of King's College London, 1828-1928* (London: Harrap, 1929).

²⁵ Thompson, *The University of London and the World of Learning*, p. 58. 'University College . . . which of course was the University for eight years until 1836', Thompson stated.

6.2 A Whig Institution: Foundation - 1836

On 18 April 1835, a Whig government, led by Lord Melbourne, resumed office following the collapse of Sir Robert Peel's short-lived, minority Tory ministry – the 'Hundred Days'.²⁶ It returned to face a number of issues unresolved from when it had last been in power the previous year. Principal amongst these was addressing the grievances aired by Dissenters in their petition to Parliament of March, 1834, which included 'their exclusion from the Universities'.²⁷ There was also the question of how to proceed with the reform of medical education in the light of the extensive but inconclusive Select Committee Report of August, 1834.²⁸ Inextricably linked to both issues was a third – what to do about the granting of a charter with the power to award degrees to the body calling itself London University; a matter which had become pressing following the King's favourable response that April to an Address from the House of Commons requesting this.²⁹ The solution, at least in part, to these three difficulties would lie in the creation of the University of London. This was not a completely new idea. Indeed, it had been suggested by senior physicians and surgeons in an article in the *Medical Gazette* of April 1834.³⁰ What had been lacking at that time was a willingness to act and a senior figure to set things in motion. In April, 1835, such a figure

²⁶ Gash, N., *Sir Robert Peel. The Life of Sir Robert Peel after 1830*, (Totowa N.J: Rowman and Littlefield, 1972), p. 122. As Gash notes, Peel's ministry actually lasted exactly 120 days – from 9 December 1834 until his resignation on 8 April 1835.

²⁷ 'Dissenters' Grievances', HC Debate 11 March 1834 vol. 21 cc2-9, *Hansard*, <https://hansard.parliament.uk>

²⁸ *Report from the Select Committee on Medical Education* parts 1-3, House of Commons, 13 August 1834.

²⁹ *Morning Chronicle*, 27 March, 1835; Hale Bellot, *University College London*, p.242; Greville, C.C.F., *The Greville Memoirs* vol. 3 (London: Longmans, Green and Co, 1899), p.269. On 27 March, 1835 and in spite of Peel's opposition, the motion for an 'Address to the Crown beseeching his Majesty to grant a Royal Charter' was passed by a majority of 120, (246 to 136). The King's reply of 1 April stated that he would ask the Privy Council for advice on the 'best mode of carrying into effect the wishes of His faithful Commons in respect of a grant of a Charter to the University of London'. According to Privy Council Secretary, Charles Greville, the reply, received on 1 April, was 'the work of Peel and Goulburn [the Chancellor of the Exchequer] and I can't imagine what induced them to put such an one into his Majesty's mouth'.

³⁰ 'Petition of the Medical Teachers in London', *Medical Gazette* 14 (London, 1834), p. 151.

emerged in the shape of Thomas Spring Rice, formerly the Financial Secretary to the Treasury and recently appointed as Melbourne's Chancellor of the Exchequer.

Spring Rice was a prominent member of the Marquess of Lansdowne's 'Bowood Circle' of liberal Anglicans who came to dominate the Whig party in the 1830s, particularly when Melbourne returned to government in April 1835 with a cabinet less Radical than previously but more inclined to introduce measures for the inclusion of Catholics and Protestant Dissenters.³¹ The entry for Spring Rice in the Oxford Dictionary of National Biography records that he was a member of the Senate of the University of London, which, in his later years, he was.³² However, he was a much more significant figure than this: he was, as Harte states, 'the effective founder of the University of London as constituted in 1836'.³³ The new Chancellor of the Exchequer, with the support of the new Home Secretary, Lord John Russell, was quick to win cabinet support for the creation and initial finance of the University so that by 17 June a draft charter had been submitted to the Attorney General.³⁴ With details made public at the end of July, Spring Rice met a deputation from London University on 5 August to reassure them regarding the status of the degrees which the new body would award vis-à-vis those of Oxford and Cambridge. In a subsequent letter to the London University (UCL) Council, which explained the government's aims, he stated that 'it should always be kept in mind that what is sought on the present occasion is an equality in

³¹ Hilton, B., 'Whiggery, Religion and Social Reform: The Case of Lord Morpeth', *The Historical Journal* 37 (1994), pp. 831, 834-35, 837; Brent, R., *Liberal Anglican Politics: Whiggery, Religion and Reform, 1830-1841* (Oxford: Clarendon Press, 1987), pp. 133-34. Hilton questions Brent's classification of Spring Rice as a liberal Anglican rather than an Evangelical, partly as a result of being under the misapprehension that Spring Rice was MP for the *University* of Cambridge rather than the City (p. 837).

³² Wasson, E. A., 'Rice, Thomas Spring, First Baron Monteagle of Brandon', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/26179>. Spring Rice was a Senate member from 1850 until his death in 1866.

³³ Harte, *The University of London, 1836-1986*, p. 81.

³⁴ *The Times*, 17 June 1835.

all respects with the ancient Universities, freed from those exclusions and religious distinctions which abridge the usefulness of Oxford and Cambridge'.³⁵

It was Spring Rice who would have responsibility for the selection of the men who would constitute the University's first Senate, guided in his choices by three aspects of his recent political experience which had ensured that he was aware of the complex issues which would need to be addressed. Firstly, on 24 March 1834, a few days after the Dissenters' Petition to Parliament, it had been Spring Rice who had presented in the Commons a petition, authored by his close friend the Reverend Professor Adam Sedgwick and signed by sixty-three Whig/Liberal Anglican members of the Cambridge University Senate, in support of the admission of Dissenters.³⁶ 'Was it not better and wiser', Spring Rice had stated, 'that those advantages which the Dissenters justly claimed should be freely and liberally conceded by the members of the University, than that they should be extorted from them by importunity and clamour?'³⁷ Notwithstanding Spring Rice's words, a counterpetition from Cambridge, considerably larger than the first, together with another counterpetition from Oxford, had resulted in the 'Universities Admission Bill' being comfortably defeated.³⁸ Secondly, Spring Rice had been a member of the House of Commons Select Committee appointed on 11 February, 1834, to 'inquire into the laws and regulations regarding the education and practice of the various branches of the medical profession', there being an urgent need for reform and the creation of a degree-conferring body in London.³⁹ The Select Committee on Medical Education had examined more than sixty witnesses from the medical

³⁵ *The Times*, 7 August 1835; *University of London. The Historical Record (1836-1912)*, p. 9.

³⁶ 'Dissenters' Grievances -Cambridge Petition' HC Debate 24 March 1834 vol. 21 cc569-598, *Hansard*, <https://hansard.parliament.uk>

³⁷ *Ibid.*, cc570, as quoted in Garland, M.M., *Cambridge before Darwin. The Ideal of a Liberal Education* (Cambridge: Cambridge University Press, 1980), p. 72.

³⁸ 'Admission to the Universities', HC and HL Debates, 17 April 1834 vol. 22 cc900-28, 28 July 1834 vol. 22 cc635-53, 1 August 1834 vol. 22 cc815-88, *Hansard*, <https://hansard.parliament.uk> ; Garland, *Cambridge before Darwin*, pp. 70-77. The Cambridge counterpetition contained 258 signatures.

³⁹ 'The Medical Profession', HC Debate, 11 February 1834 vol. 21 cc233-6, *Hansard*, <https://hansard.parliament.uk>

profession between March and June, 1834, so many that, when they came to deliver their report in August, 1834, 'the extent of evidence . . . prevented them from . . . drawing any such deliberate conclusion therefrom as they would feel justified in reporting to the House'.⁴⁰ The dismissal by the King of the Whig government, in November, 1834, had prevented further consideration of the matter. Thirdly, on 29 May 1835, now as Chancellor of His Majesty's Exchequer, the Right Honourable Thomas Spring Rice had been a member of the Privy Council which had assembled again, following inconclusive meetings the previous year, to advise the King on the question of a Charter for the London University.⁴¹ A Charter had, in effect, been promised by the King the previous month but, as Privy Council Secretary Charles Greville recalled, 'nobody seemed disposed to move' from their positions of the previous year.⁴² Support for a Charter came from Whig representatives including Lord Henry Brougham and Lord John Russell; each had been founder members of the London University Council. Distinctly opposite opinions were represented by the Bishop of London, who was on the Council of King's College, and by Ultra-Tories like the Earl of Eldon.⁴³ Many 'traditional' Whigs such as Earl Grey and Prime Minister Melbourne were still reluctant to support a Radical and secular institution in opposition to the ancient universities. 'It is clear', stated Greville, 'that they would have advised against granting the charter but for the answer the King made'.⁴⁴ Unable to reach agreement, their report to the King requested that he

⁴⁰ *Report from the Select Committee on Medical Education*, (1834). Parts I, 2 and 3. Evidence was given by 37 physicians, (two of whom also appeared as surgeons), 16 surgeons and 8 apothecaries.

⁴¹ Hale Bellot, *University College London*, p. 242.

⁴² Greville, *The Greville Memoirs*, p. 267; Hale Bellot, *University College London*, p. 242. On 27 March 1835, William Tooke had moved 'an Address to the Crown beseeching his Majesty to grant a Royal Charter'. In spite of the opposition of Peel's government, the motion for an address to the Crown was passed by a majority of 120, (246 to 136). The King, in his reply of 1 April, assured 'His faithful Commons, that He will call upon the Privy Council, without delay, for a Report of the Proceedings adopted in this matter, in order that His Majesty may be enabled to judge what may be the best mode of carrying into effect the wishes of His faithful Commons in respect of a grant of a Charter to the University of London'.

⁴³ Greville, *The Greville Memoirs*, pp. 267-69.

⁴⁴ Greville, as quoted in Hale Bellot, *University College London*, p. 269.

‘dispense with the advice of the Council’; the matter, in consequence, was left for Melbourne’s Government to resolve.⁴⁵

The solution to this problem, and to the problems of Dissenter access to the universities and a new degree to reform medical education, would be the foundation of the University of London. In September, 1835, Melbourne, in spite of being generally wary of reform initiatives, sent an official note to Russell (Home Secretary) and Spring Rice requesting them to ‘undertake the consideration of all the questions relating to the Dissenters, and to frame measures for the consideration of the cabinet’.⁴⁶ One such measure which was by then already in hand was the foundation of the University of London and a draft Charter was already in preparation. Here, however, as a memorandum explains, the Prime Minister found it necessary to make some alterations to the wording: ‘It seems to me well conceived, but I would omit the words which I have underlined in the preamble. . . There is no need to point so precisely to it being a measure for the Dissenters. All persons will be entitled to take advantage of it . . .’⁴⁷ Spring Rice would have been keenly aware of the need to choose a management team that would be able to chart a difficult middle course in the face of criticism from both Radical and conservative opinion.

6.3 The first Senate of the University of London

The thirty-eight members of the Senate appointed in November 1836 are listed below, together with the description that accompanied their name on the first Charter.

William Cavendish	Earl of Burlington, Chancellor
John William Lubbock	Vice-president and Treasurer of the Royal Society, Vice-Chancellor
Edward [Maltby]	Bishop of Durham

⁴⁵ Ibid.

⁴⁶ Torrens, W. M., *Memoirs of the Right Honourable William Second Viscount Melbourne* (London: Macmillan, 1878), p. 158.

⁴⁷ Ibid.

William [Otter]	Bishop of Chichester
Henry [Brougham]	Baron Brougham and Vaux
Georg Biddell Airy,	Astronomer Royal, Fellow of the Royal Society
Andrew Amos	Barrister at Law
Thomas Arnold	Doctor in Divinity
John Austin	Barrister at Law
Neil Arnott	Doctor in Medicine
John Bacot	Member of the Royal College of Surgeons
Francis Beaufort	Captain, Hydrographer of the Admiralty
Archibald Billing	Doctor in Medicine, Fellow of Royal College of Physicians
William Thomas Brande	Fellow of the Royal Society
James Clark	Doctor in Medicine, Fellow of the Royal Society
Philip Cecil Crampton	Surgeon General in Ireland
John Dalton	Fellow of the Royal Society
William Empson	Barrister at Law, Professor of the Laws of England, East India College
Michael Faraday	Fellow of the Royal Society
Stephen Love Hammick	Baronet, Member of the Royal College of Surgeons
John Stevens Henslow	Professor of Botany, University of Cambridge
Cornwallis Hewett	Doctor in Medicine, Professor of Medicine, University of Cambridge
Thomas Hodgkin	Doctor in Medicine
Joseph Henry Jerrard	Doctor of Laws, Principal of Bristol College
Francis Kiernan	Member of the Royal College of Surgeons
John Geo. Shaw Lefevre	Fellow of the Royal Society
Charles Locock	Doctor in Medicine
James McGrigor	Baronet, Fellow of the Royal College of Physicians
Robert Pennington*	Member of the Royal College of Surgeons
Jones Quain	Doctor in Medicine
John Ridout	Member of the Royal College of Surgeons
Peter Mark Roget	Doctor in Medicine, Secretary of the Royal Society
Nassau William Senior	Master of the High Court of Chancery
Richard Sheepshanks	Fellow of the Royal Society

John Sims	Doctor in Medicine
Connop Thirlwall	Fellow of Trinity College
James Walker	Fellow of the Royal Society
Henry Warburton	Member of Parliament, Fellow of the Royal Society

* Pennington's first name is incorrectly given as Richard on the charter document.

Harte describes the group which Spring Rice selected as 'an able range of men, varied, but not so diverse as to lack a strongly progressive theme'.⁴⁸ His account did not seek to develop this statement, neither did it concern itself to any great degree with establishing prior links between members of the group or between them and Spring Rice himself. It was noted that he had, in common with 'at least ten' of the Senate (including Lubbock) attended Trinity College, Cambridge.⁴⁹ However, as will now be shown, studying at Trinity, with its strong liberal Anglican ethos, was just one dimension of the shared background to be found amongst many of the Senate members.

Identically worded letters were sent by Spring Rice to those chosen for the new Senate, differing only in date, salutation and closing compliments.⁵⁰ After explaining the purpose of the new board, Spring Rice's letter made the following request:

His Majesty's Government are extremely desirous that the persons named in the Royal Charter should be such as to give to the public the fullest security for the effectual and impartial discharge of their new and most important duties & it will be particularly gratifying to me if I am permitted to submit your name to my colleagues as one of those who we may be enabled to recommend to the Crown as willing to undertake this important and most honourable trust . . . I trust that you may be induced to give the Government your zealous and valuable contribution.⁵¹

⁴⁸ Harte, *University of London, 1836-1986*, p. 86.

⁴⁹ Ibid.

⁵⁰ Thomas Spring Rice to Lubbock, 24 September 1835, Royal Society Lubbock Collection R 40; Thomas Spring Rice to George Biddell Airy, 24 September 1835, Professor Sir George Biddell Airy Papers, University of London Archive MS929 ; Thomas Spring Rice to Michael Faraday, 15 February 1836, Faraday 0895 The Michael Faraday Collection, <https://epsilon.ac.uk/view/faraday/letters/Faraday0895>; Spring Rice to Sir Stephen Hammick, 6 June 1836, Senate Minutes, 29 May 1839, University of London Archive UoL/ST2.

⁵¹ Ibid.

One of the first the first to receive this letter, with a 24 September 1835 date, was John William Lubbock; it is probable that he had agreed to take the position of Vice-Chancellor some months previously. The Chancellor, the Earl of Burlington, was not himself appointed until six months later at the end of February 1836 and, overall, it would take more than a year to put together a Senate of thirty-eight men.⁵² The essential qualities which Lubbock possessed and which drew Spring Rice to have him earmarked for the Vice-Chancellor role are plain to see: in addition to his being one of the most prominent men of science in the country and the son of an eminent London banker and baronet, it was well known that he had transformed the working of the Royal Society in his five years as its Senior Vice President.⁵³ It would be difficult to find a man more capable of fulfilling Spring Rice's requirement that he should 'give the public the fullest security for the effectual and impartial discharge of . . . important duties'. Of course, first and foremost, Lubbock was a Whig, but, like Spring Rice himself, neither one who was too much of a reformer, nor too conservative. In 1831, it had been Spring Rice's long-standing patron, the Marquess of Lansdowne, who had proposed Lubbock for membership of the club and political meeting place for Whig aristocrats and gentlemen: Brooks's.⁵⁴

Spring Rice's earliest connection with Lubbock, and also with many other members of the future Senate, began nearly ten years before the foundation of the University of London with Henry Brougham's Society for the Diffusion of Useful Knowledge (SDUK), founded to promote popular education in 1826.⁵⁵ Spring Rice was a founder member of the

⁵² *Morning Post*, 27 February, 1836; *The Times*, 29 February 1836; *Observer*, as quoted in *The Times*, 18 July, 1836. *The Times* of 29 February 1836 reported that 'it is understood that the Earl of Burlington is likely to be the Chancellor of the New University of London'. On 17 July, the *Observer* published what it claimed was 'a complete list of the examiners of the new Metropolitan University, with the exception only of the medical branch', but it contained barely half the names.

⁵³ Granville, A.B., *The Royal Society in the XIXth Century* (London, 1836), p. 158.

⁵⁴ *Memorials of Brooks's from the Foundation of the Club in 1764 to the Close of the Nineteenth Century* (London: Ballantyne, 1907), pp. 116-17.

⁵⁵ Ashton, R., 'The Society for the Diffusion of Useful Knowledge', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/59807>

SDUK Committee, a part of which he remained until 1833. Fellow committee members during this period included Lubbock and six other future University of London Senators: Francis Beaufort, Henry Brougham, John George Shaw Lefevre, Edward Maltby (future Bishop of Durham), Peter Mark Roget, Henry Warburton. Lord John Russell (the future Home Secretary to whom the Senate would be responsible) and Richard Rothman (future University of London Registrar) were also Committee members. John Stevens Henslow and Connop Thirlwall were members of the SDUK Cambridge local committee and George Biddell Airy, although not a member, contributed articles to the Society's *Penny Cyclopaedia*.⁵⁶ Later in the 1830s, Richard Sheepshanks, William Otter (Bishop of Chichester), and Thomas Hodgkin served on the Committee. Nearly one third of the Senate, therefore, and also those in the Cabinet to whom they were responsible, were connected with the SDUK.⁵⁷ Of course, this reflects the 'Whiggish' nature of a Senate chosen by a Whig government, a fact not lost on a mainly Tory Press. The *Morning Post* made the following comment:

Had it been the intention of Lord John Russell to constitute a club of Whigs, capable of mingling science and liberalism in their *conversazioni*, the list . . . would have been unobjectionable. But aiming at the formation of a permanent and influential national institution, he has certainly selected the Senate of his new University upon a principle much too narrow and exclusive to afford to the establishment the least chance of immediate success.⁵⁸

The *Post* had a point in that the Senate was predominantly Whig from the top (Chancellor William Cavendish – former Whig MP and future Duke of Devonshire) down. While the old London University was represented on the Senate by three members of teaching staff (Andrew Amos, John Austin and Jones Quain) and two Council members (Brougham and Warburton), the only two with any previous connection to Tory King's College, Otter and

⁵⁶ Airy, G.B., *The Autobiography of Sir George Biddell Airy, K.C.B.* (Cambridge: Cambridge University Press, 1896), p. 97. In 1832 Airy contributed 'Gravitation' and 'Greenwich'.

⁵⁷ 'Natural Philosophy', *Library of Useful Knowledge* vol. 4 (London: Robert Baldwin, 1842), Frontispiece listing Committee members 'from its institution'.

⁵⁸ *Morning Post*, 13 December 1836.

Nassau William Senior, were both actually Whigs. Otter, although the first principal of King's until his appointment by Melbourne as Bishop of Chichester, had never had a position on the institution's Council and Senior, King's Professor of Political Economy, had been obliged to resign after writing a pamphlet in support of the Whig government's reformist policy in respect of the Church of Ireland.⁵⁹ The Tory weekly, *The Age*, focussing on the institution's likely commitment to being a secular institution, published a fictitious letter in Latin, supposedly from Burlington to Lubbocke, his new *Vice Cancellarium*, celebrating their appointment as one which '*plurimi anti-religionem professors salutabunt*' – most anti-religion professors will welcome.⁶⁰ The letter also reminded Lubbock of his failure as a Whig candidate for the University of Cambridge constituency four years previously: '*tu ab . . . Senatu ad adventum Caroli Manners Sutton perterritus fugisti*' – you ran away from the Senate terrified by the arrival of Charles Manners Sutton (the Tory heavyweight brought in at the last moment and causing Lubbock to withdraw).⁶¹

Lubbock's work with the SDUK had ensured that he was already familiar with the issues which the new Senate would need to address. Since 1831 he had been an assistant editor of its *Quarterly Journal of Education*.⁶² In the journal's pages were to be found articles on University education in the United Kingdom and on the Continent, on education at Dissenting Colleges and on medical education.⁶³ Volume 7 (January to April 1834) had

⁵⁹ Hearnshaw, *The Centenary History of King's College London, 1828-1928*, pp. 90, 107, 124, 130; Deane, P., 'Senior, Nassau William (1790-1864)', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/25090>

⁶⁰ *The Age*, 25 December 1836.

⁶¹ *Ibid.*

⁶² Berman, M., *Social Change and Scientific Organization: The Royal Institution, 1799-1844* (London: Heinemann, 1978), p. 112; Ashton, 'The Society for the Diffusion of Useful Knowledge'. The principal editor was George Long, Professor of Greek at London University (UCL).

⁶³ 'On the English Universities' and 'The State of Education in France', *Quarterly Journal of Education* 2 (London: Charles Knight, 1831) pp. 23-30, 83-113; 'A General View of the Present State of Education in Italy', *Quarterly Journal of Education* 3 (1832), pp. 17-24; 'The Universities of Scotland', *Quarterly Journal of Education* 4 (1832); 'Manchester College, York', *Quarterly Journal of Education* 8 (1834), pp. 72-77; 'Recent Improvements in Medical Education', *Quarterly Journal of Education* 4 (1832), pp. 1-20.

reported enthusiastically on a proposal (abortive as it would turn out) from some members of the Oxford Convocation 'to render *some acquaintance with the first principles of Physical Science a necessary qualification* for the degree of BA'. The final volume to appear before the journal ceased publication (vol. 10 – April to October 1835) carried an article on 'University Education without Religious Distinctions'.⁶⁴ The editorial comment shared with readers the news that 'it is now known that the present government is employed in framing a constitution for a New University, which shall confer degrees on all persons who shall be found competent'.⁶⁵ 'A measure conceived in so enlarged and truly liberal spirit', it stated, 'and carried into effect, as we have no doubt it will be, with an earnest desire to do all for the best, cannot fail, in course of time, to accomplish the ends for which it is designed'.⁶⁶

Spring Rice's Senate would go on to devise Matriculation and BA exam syllabuses in which science was a significant and compulsory element and the number, calibre and expertise of the various men of science chosen indicates that the introduction of this important innovation in university education was, as the Charter makes clear, always the intention. Also, the selection suggests that a clear idea of the specific scientific subjects to be required for the degree was developed before the foundation. To this end, some of the foremost individuals in the branches of science to be included in the new BA were appointed to the Senate: Lubbock and Airy (Mathematics and Natural Philosophy), Francis Kiernan, Roget and Henslow (Animal and Vegetable Physiology), John Dalton, Michael Faraday and William Thomas Brande (Chemistry).⁶⁷ Over half (twenty) of the original members of the

⁶⁴ 'University Education without Religious Distinctions', *Quarterly Journal of Education* 10 (1835), pp. 1-9.

⁶⁵ *Ibid.*, xx-xxi.

⁶⁶ *Ibid.*, xxi.

⁶⁷ Faculty of Arts Committee Meeting, 21 June 1837, University of London Archive UoL/ST2. Subject areas in parentheses are those which this meeting decided should make up the science component of the BA degree. Natural Philosophy consisted primarily of Newtonian Mechanics. John Herschel, perhaps a greater figure in the public imagination than Lubbock or Airy, had been in South Africa since the end of 1833. Kiernan received the Copley Medal in 1836 for his work on the Kidney. In 1833, Roget had been appointed first Fullerian Professor of Physiology at the Royal Institution. In 1834 and 1836 he published Vols 1 and 2 of his Bridgewater Treatise: *Animal and Vegetable*

Senate were, at the time of the University's foundation, Fellows of the Royal Society; of greater significance still is that, of these, ten served on the Royal Society Council in the 1830s, during which Lubbock was its dominant figure, assisted and supported by the Senior Secretary, Roget.⁶⁸ Roget was approached about Senate membership at an early stage; he would have a key role as the first chair of the Committee of the Medical Faculty.⁶⁹

Spring Rice, himself, was not elected FRS until 1841 when, having recently been created Lord Monteagle, he was elected under the arrangement for Peers at a meeting chaired by Lubbock. However, he had been actively involved with the British Association for the Advancement of Science in the 1830s.⁷⁰ The *Oxford Dictionary of National Biography* entry for Spring Rice focuses on his political activity, particularly in relation to his native Ireland; it is somewhat dismissive of his time as Chancellor of the Exchequer. While there is reference to his action in support of National Education, his activity in furthering the interests of science is perhaps a surprising omission.⁷¹ Jack Morrell and Arnold Thackray, while acknowledging his support of science and scientific men, portray him as the Chancellor of the Exchequer who had to be 'outmanoeuvred' and 'overcome' by British Association leaders such as Roderick Impey Murchison in order to secure government funding.⁷² However, Spring

Physiology Considered with Reference to Natural Theology (London: Pickering, 1834 and 1836). In 1835, Cambridge Professor of Botany, Henslow, published *Principles of Descriptive and Physiological Botany* (Cambridge, Cambridge University Press, 1835) for use as a textbook. Dalton, Brande and Faraday were the most eminent Chemists of the day. Each had delivered lecture series at the Royal Institution.

⁶⁸ *Abstracts of the Papers Communicated to the Royal Society of London from 1830 to 1837 inclusive* (London, 1837); *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive* (London, 1843).

⁶⁹ Roget to Lubbock, 24 December 1835, Royal Society Lubbock Collection R136. At the end of December, 1835, Royal Society Secretary, Peter Mark Roget, told Lubbock that he had seen reports in the newspapers that he would be approached, but he had not at this stage received the official letter.

⁷⁰ *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive*, p. 300. Spring Rice was elected on 29 April 1841

⁷¹ Wasson, 'Rice, Thomas Spring, First Baron Monteagle of Brandon'.

⁷² Morrell and Thackray, *Gentlemen of Science, Early Years of the British Association for the Advancement of Science*, p. 332; Morrell and Thackray, *Gentlemen of Science, Early Correspondence of the British Association for the Advancement of Science*, p. 241. Murchison described Spring Rice as 'the little Knight of the Red Tape'.

Rice was himself a life member of the Association and first attended a meeting in 1833, at Cambridge. Here, on Sunday, 23 June, he is recorded as being present at a small breakfast gathering in the rooms of mathematician George Peacock, in company which included Lubbock and British Association founder, William Vernon Harcourt.⁷³ At the General meeting two days later, it was Spring Rice who authorised his friend, the Association President, Adam Sedgwick, to announce to the meeting that the distinguished chemist, John Dalton, was to be awarded a pension 'out of the funds of the civil list'.⁷⁴ In August, 1834, Spring Rice wrote to Airy on behalf of the government, to enquire whether he would 'accept the office of Astronomer Royal if it were vacant' and in December, 1835, to ask if the government might recommend to the King that Airy 'receive the distinction of a Knighthood'.⁷⁵ Spring Rice's desire to be seen to support science and its practitioners is clear from this latter letter: 'I am quite aware that to you individually this may be a matter of small concern', he explained, 'but to the scientific world in general it will not be indifferent and to foreign countries it will mark the consideration felt for you personally as well as for the position which you occupy among your learned contemporaries'.⁷⁶ Half (nineteen) of the members of the University of London Senate belonged also to the British Association. Not all of these were men of science: their number included a lawyer (Empson), a classicist (Jerrard) and a Bishop (Maltby/Durham who was Association Vice President for the meetings of 1837 and 1838).⁷⁷ Of the nineteen British Association members on the Senate, eight were on the Association's Council during the 1830s. Hodgkin and Lubbock were members of the Association's Council on six out of the

⁷³ Ibid., p. 172.

⁷⁴ *British Association for the Advancement of Science, Cambridge June 1833, A Report of the Public Meetings* (Cambridge: Pitt Press, 1833), p. 72.

⁷⁵ Airy, *The Autobiography of Sir George Biddell Airy, K.C.B.*, pp. 104, 112-13. Airy was appointed Astronomer Royal in 1835 on the retirement of John Pond.

⁷⁶ Ibid., p. 111-12. Airy declined the offer of a Knighthood.

⁷⁷ *Report of the Seventh Meeting of the British Association for the Advancement of Science*, (London: John Murray, 1838); *Report of the Eighth Meeting of the British Association for the Advancement of Science*, (London: John Murray, 1839). Edward Stanley, Bishop of Norwich, who became a Senate member with the second charter of 1837, was Vice President elect in 1837, but replaced by Maltby for the Newcastle meeting of 1838.

eight possible occasions during the 1830s although, it will be remembered, Lubbock attended meetings only infrequently.⁷⁸

No fewer than sixteen members of the Senate were medical men; the large number reflecting the need to construct a viable medical degree which would ensure that all student doctors received adequate training in the work of the physician, the surgeon and the apothecary. Of these sixteen, seven had given evidence to the Select Committee on Medical Education, of which Spring Rice had been a member.⁷⁹ Select Committee Chairman, Henry Warburton MP, not himself a doctor but a campaigner for medical reform over many years, was also chosen to serve on the Senate. Special mention should be made, also, of anatomist Francis Kiernan who would be a key figure in the new University, attending nearly every meeting. Kiernan, who was awarded the Royal Society's Copley Medal in 1836, was a practicing Catholic; his old school, St Edmund's College, Ware, would become one of the first Catholic colleges to be affiliated to the new university.⁸⁰

Six members of the Senate were lawyers, the most senior being the former Lord Chancellor, Brougham, whose connection with Spring Rice and Lubbock has already been established. Spring Rice himself trained as a lawyer at Lincoln's Inn from 1817 but was never called to the Bar.⁸¹ Five of the other lawyers had studied in London in this period. Four of these, Andrew Amos, John Austin, William Empson and John George Shaw Lefevre, overlapped with Spring Rice at Trinity, Cambridge. Nassau William Senior, who was one of only two Oxford men on the Senate, was the principal author of the Poor Law Commissioners' Report of 1834, commissioned by the Whig government of which Spring Rice was a member.⁸² This led to the Poor Law Amendment Act following which, in August 1834,

⁷⁸ *Report of the Eleventh Meeting of the British Association for the Advancement of Science*, (London: John Murray, 1842), ix, x.

⁷⁹ *Report from the Select Committee on Medical Education*. The seven who gave evidence were: Arnott, Bacot, Billing, Clark, Locock, Ridout, Sims.

⁸⁰ *British Medical Journal*, 2 January 1875, <https://doi.org/10.1136/bmj.1.731.31>

⁸¹ Wasson, 'Rice, Thomas Spring, First Baron Monteagle of Brandon'.

⁸² The other Oxford man was Thomas Arnold.

former Whig MP Lefevre was appointed as one of the three Poor Law Commissioners, a post he held until 1841. Lefevre was from a family of bankers friendly with the Lubbocks – his younger brother, Henry, was in Lubbock's form at Eton, both moving on to Trinity, Cambridge. In 1832, Lefevre was the Chair of Lubbock's London Committee supporting his campaign to be elected MP for Cambridge University.⁸³

Doctor of Laws, Joseph Henry Jerrard, would, like Kiernan, attend nearly every Senate and committee meeting. He was primarily a classicist, having graduated first class in the recently-introduced Cambridge Classical Tripos, the path to which required that the student should have first achieved high honours in mathematics. In 1831, Jerrard had been appointed as the first Principal of newly-founded Bristol College at which, unusually and in evidence of Jerrard's liberal views, pupils were given religious instruction (Anglican) only if their parents requested it, a policy provoking hostility from the local clergy.⁸⁴ From early in 1835, Jerrard had been in frequent correspondence with Lubbock, mainly seeking advice on behalf of his brother, mathematician George Birch Jerrard, whose *Mathematical Researches* on the theory of equations had been criticised by, amongst others, William Rowan Hamilton.⁸⁵

In February, 1835 Lubbock invited Jerrard to dine as a guest at the Royal Society Club, a dining club of forty elected members which constituted the Society's inner social circle.⁸⁶ In addition to Lubbock, Senate members, Beaufort, Brande, Lefevre and Roget were also members of the Royal Society Club before the University's foundation; Burlington and Walker were elected shortly afterwards.⁸⁷ In further demonstration of the strong social

⁸³ See chapter 3: 'The Election for the Representation of the University of Cambridge'.

⁸⁴ Giberne Sieveking, I., *Memoir and Letters of Francis W. Newman* (London: Keegan Paul, Trench, Trubner and Co., 1909), pp. 62-63. In 1841, Bishop Monk founded Bishop's College, Bristol, with which Bristol College found itself unable to compete, resulting in its closure that year.

⁸⁵ Jerrard, G.B., *Mathematical Researches* 3 Vols (Bristol and London, 1832-35); Jerrard to Lubbock, March to May 1835, Royal Society Lubbock Collection J42-47.

⁸⁶ Jerrard to Lubbock, 26 February 1835, Royal Society Lubbock Collection J40.

⁸⁷ Geikie, A., *Annals of the Royal Society Club* (London: Macmillan, 1917), pp. 300-55.

connection between Senate members it should be noted that over half (twenty) were members of the Athenaeum Club established in 1824 for scientific and literary gentlemen and of which Lubbock was a Committee member; eight of these, including Lubbock, had been amongst the founder members.⁸⁸

The members of the new Senate who came together for the first time on 4 March 1837 were, therefore, by no means strangers to each other: they were connected through numerous 'circles of acquaintance'.⁸⁹ Principally these may have included being Fellows of the Royal Society or members of the British Association, being on the committee of the SDUK, having membership of the Athenaeum or having attended Cambridge, probably at Trinity. Some had served on the Councils of the Royal Society or the British Association, perhaps on both. This is summarised in the table which follows from which it can be seen that only one man belonged to all of these groups: John William Lubbock. At the time of the University's foundation in November, 1836, Lubbock had already worked regularly on committees with twelve members of the new Senate: Burlington, Maltby, Brougham, Airy, Beaufort, Brande, Faraday, Henslow, Hodgkin, Roget, Sheepshanks, Warburton.

⁸⁸ Waugh, F.G., *Members of the Athenaeum Club, 1824-1887* (London, 1887).

⁸⁹ Mitchell, L., *The Whig World* (London: Hambledon, 2005), pp. 15-35. The term is used by Leslie Mitchell to describe how Whig Society functioned. Its use is appropriate here.

Senate member	FRS C=Council	BAAS C=Council	SDUK Committee	Athenaeum ⁹⁰ (F=Founder)	Cambridge ⁹¹ (T=Trinity)
Earl of Burlington,	✓ C	✓			✓ T
John William Lubbock	✓ C	✓ C	✓	✓ F	✓ T
Edward Maltby	✓	✓	✓	✓	✓
William Otter		✓	✓	✓	✓
Henry Brougham	✓		✓	✓ F	
Georg Biddell Airy	✓ C	✓ C			✓ T
Andrew Amos				✓	✓ T
Thomas Arnold				✓	
John Austin					✓ T
Neil Arnott	✓*1838	✓		✓*1838	
John Bacot					
Francis Beaufort	✓ C		✓	✓ F	
Archibald Billing					
William Thomas Brande	✓ C			✓ F	
James Clark	✓	✓		✓	
Philip Cecil Crampton	✓	✓		✓*1837	
John Dalton	✓	✓			
William Empson		✓		✓	✓ T
Michael Faraday	✓ C	✓		✓ F	
Stephen Love Hammick					
John Stevens Henslow		✓ C	✓		✓
Cornwallis Hewett					✓ T
Thomas Hodgkin		✓ C	✓		
Joseph Henry Jerrard		✓			✓
Francis Kiernan	✓ C *1838				
John Geo. Shaw Lefevre	✓		✓	✓	✓ T
Charles Locock					
James McGrigor	✓			✓ F	
Robert Pennington					
Jones Quain					
John Riddout				✓	
Peter Mark Roget	✓ C	✓ C	✓	✓ F	
Nassau William Senior	✓			✓	
Richard Sheepshanks	✓ C		✓	✓	✓ T
John Sims					
Connop Thirlwall		✓	✓	✓	✓ T
James Walker	✓ C *1837	✓ C *1840		✓	
Henry Warburton	✓	✓	✓	✓ F	✓ T
Total: 38	20 C=10	18 C=6	12	22 F=8	15 T=11

Table 6.1 First Senate: membership of groups at time of foundation

⁹⁰ Waugh, *Members of the Athenaeum Club, 1824-1887*; James, F.A.J.L., *Michael Faraday: A Very Short Introduction* (Oxford: Oxford University Press, 2010), pp. 41-42. Faraday, who would have been unable to afford the Club's fees when it was founded in 1824, was elected an honorary member after being persuaded, by Davy, to act as its first (unpaid) Secretary.

⁹¹ Cambridge Alumni Database, <http://venn.lib.cam.ac.uk/Documents/acad/2018/search-2018.html>

No reference has been made, as yet, to the presence on the Senate of classicist, historian and educational reformer, Dr Thomas Arnold, Headmaster of Rugby School. His early and somewhat surprising inclusion, given that it was known that he would challenge the secular nature of the examination syllabuses to be constructed, will be discussed in section 6.5.⁹²

6.4 The working Senate

The University of London's first Charter, granted by King William IV, was sealed on 28 November 1836. A few days later, on 1 December, the Home Secretary, Lord John Russell, wrote to the Earl of Burlington as follows:

His Majesty has been pleased to approve the appointment of your Lordship as Chancellor, and of Mr Lubbock as the first Vice-Chancellor of the University.

I feel confident that it is not necessary to recommend to your Lordship either a zealous attention to the interests of learning, or a constant regard to those principles of religious freedom, which have furnished motives for the Royal grant.

I have no less reliance on the distinguished men who are associated with yourself and Mr Lubbock in the government of the University.⁹³

However, not all the 'distinguished men' would prove to be reliable in their attendance at meetings of the Senate. This is abundantly clear from the table which follows showing attendance at the 140 Senate meetings held during Lubbock's period as Vice-Chancellor (and of which he attended 137). It supports Lefevre biographer F. M. G. Wilson's view that 'the big membership was largely window-dressing'.⁹⁴ This surely explains the inclusion, for example, of the aged but enormously respected Dalton; based in Manchester and with a dislike of London, he was never likely to attend and never did so.⁹⁵ Only ten members of the

⁹² Stanley, A.P., *The Life and Correspondence of Thomas Arnold, D.D.* vol. 2 (London: John Murray, 1877), p. 265. Arnold's letter from Spring Rice is dated, like Lubbock's, 24 September 1835.

⁹³ *The Times*, 13 December, 1836.

⁹⁴ Wilson, *A Strong Supporting Cast*, p. 109.

⁹⁵ Harte, *The University of London, 1836-1986*, p. 86.

Senate attended at least half (70) of the Senate meetings in this period and it was these men who were largely responsible for bringing the university into being.⁹⁶ Jerrard and Kiernan, in particular, attended virtually every meeting. Some members of Senate, such as Lefevre, while attending few full meetings, were nevertheless active on committees.⁹⁷ Astronomer Royal, Airy, often pleading that work or travel difficulties kept him at the Observatory in Greenwich, made his views known by letter. The University of London Archive's considerable volume of correspondence between Lubbock and Airy seems to have escaped the attention of historians. It greatly facilitates the study of this period in the University's history.⁹⁸

⁹⁶ The ten are Vice-Chancellor Lubbock, Arnott, Billing, Clark, Hammick, Jerrard, Kiernan, Ridout, Roget and Warburton. Chancellor Burlington does not make the list.

⁹⁷ Wilson, *A Strong Supporting Cast*, p. 109.

⁹⁸ Professor Sir George Biddell Airy Papers, University of London Archive MS929.

<i>Year: 18-</i>	37	38	39	40	41	42	<i>Total</i>
No. Meetings	20	40	39	19	15	7	140
Burlington	13	24	5	5	6	2	55
Lubbock	19	40	38	19	15	6	137
Airy	4	4	0	1	1	0	10
Amos	4	0	0	0	0	0	4
Arnold	2	0					2
Arnott	14	22	29	10	8	3	86
Austin	0	2	1	0	0	0	3
Bacot	18	12	11	12	11	5	69
Beaufort	8	13	2	1	1	1	26
Billing	16	30	38	12	13	7	116
Brande	7	16	9	4	4	1	41
Brougham	0						0
Clark	13	19	32	11	7	3	85
B. Chichester	2	11	6	2	0	0	21
Crampton	0	0	0	0	0	0	0
Dalton	0	0	0	0	0	0	0
B. Durham	2	9	13	3	2	2	31
Empson	11	5	3	5	2	0	26
Faraday	8	18	10	5	1	0	42
Hammick	14	24	33	17	13	4	105
Henslow	1	1	3	0	0	0	5
Hewett	3	8	1	1	0	0	13
Hodgkin	0	4	28	7	11	4	54
Jerrard	20	39	39	15	15	4	132
Kiernan	19	40	35	18	14	7	133
Lefevre	3	11	3	4	4	0	25
Locock	6	12	4	5	3	1	31
McGrigor	2	9	7	2	2	2	24
B. Norwich		5	3	3	1	0	12
Pennington	0	0	0	0	0	0	0
Quain	0	0	0	0	0	0	0
Ridout	15	20	19	9	9	4	76
Roget	11	14	11	16	14	4	70
Senior	8	5	8	9	5	2	37
Sheepshanks	0						0
Sims	18	21					39
Somerville		3					3
Thirlwall	0	2	1	0	0	0	3
Walker	8	11	9	10	5	2	45
Warburton	15	34	31	12	11	5	108

Table 6.2 Summary of attendance at Senate meetings, 5 April 1837 to 15 June 1842⁹⁹

⁹⁹ *Minutes of the Senate of the University of London, 1837-1840*, University of London Archive UoL/ST2. The new Senate met for the first time on 4 March 1837; from its third meeting (5 April)

On 4 March, 1837, the *Morning Chronicle* reported the following:

The University of London – The Earl of Burlington entertained the members of its Senate, on Saturday last, in Belgrave-square; those gentlemen will assemble for business today, for the first time, in Somerset House. The large rooms, formerly of the exhibition, are now allotted to the new university, and the exhibition will hereafter be translated to Trafalgar-square.¹⁰⁰

The Royal Academy having moved to the buildings which would later become the National Gallery, the University of London was finally in possession of accommodation and in a position to begin its Senate meetings. Somerset House was familiar ground for many members of the Senate being also the venue for meetings of the Royal Society and its Council, the Royal Astronomical and Geological Societies and also the Council of the British Association (in the Geological Society rooms). Lefevre's Poor Law Commission offices were also to be found there.

Harte has chronicled the major events of the University's early years which led to its first examination, for Matriculation, in November, 1838, followed by degree examinations for the BA, LLB, MB and MD in 1839, the MA in 1840 and, finally, the LLD in 1843.¹⁰¹ Noting that Lubbock was for many years also Treasurer and Vice-President of the Royal Society, Harte makes the observation that he 'took what was in effect a comparable position as Vice-Chancellor'.¹⁰² Indicating that he considers this to have been a comparatively less-significant role he states that: 'at the time of foundation, the Chancellorship was much more active a

onwards the minutes record names of those attending. Original members, Brougham and Sheepshanks, who had failed to attend any meetings, declined to serve when the second Charter, occasioned by the accession of Queen Victoria, was granted at the end of 1837. They were replaced by the Bishop of Norwich and James Craig Somerville, the latter resigning after attending just three meetings. John Sims died in July 1838. Thomas Arnold resigned in November 1838. At the end of 1839 Michael Faraday suffered some kind of breakdown which severely affected his work in the early years of the 1840s and probably accounts for the falloff in his attendance. (James, *Michael Faraday: A Very Short Introduction*, p. 75).

¹⁰⁰ *Morning Chronicle*, 4 March 1837.

¹⁰¹ Harte, *The University of London, 1836-1986*, pp. 88-98.

¹⁰² *Ibid.*, p. 83.

position than it was to become, and the Vice-Chancellorship rather less so'. This is not supported by the attendance record and, as we shall see, by primary sources. Lubbock *did* take a 'comparable position' but that was through deputising, day-by-day, for an often-absent aristocratic figurehead, in this case the Earl of Burlington, as he had done previously with the Duke of Sussex at the Royal Society. Most notably, during Lubbock's tenure as Vice-Chancellor, there were two periods (13 July 1838 – 17 July 1839 and 8 April 1840 – 19 May 1841) when Burlington did not attend a single Senate meeting for over a year, the latter period consequent upon the death of his wife on 27 April, 1840, which turned him into a recluse at his north Lancashire (now Cumbria) estate, Holker Hall.¹⁰³ Lubbock wrote frequently to Burlington when the Earl was out of Town to apprise him of the Senate's work. That the Chancellor was able to delegate total responsibility to Lubbock for long periods is illustrated by a letter of 5 January 1839 which Burlington, who had not attended a Senate meeting since the previous July, sent from Rome:

You may have heard from Sir James Clark that I have been obliged to spend the winter in Italy on account of the health of one of my children; we shall return to England as soon as we are permitted by the Physician who is now attending him but I do not think that will be before the beginning of May. When you have leisure to write I should be very glad to hear how the examinations went off and how matters in general have been going on latterly in the University.¹⁰⁴

However, when May arrived, he wrote again to Lubbock, this time from Florence:

I had hoped at the early part of the winter that I should have been able to return to London by this time but the doctor who is travelling with me strongly urged me not to cross the Alps before the end of May on account of the health of one of our children. We mean to spend a few days in Venice and from thence return with as little delay as possible to England. I hope to be there at latest by 14th or 15th June and to resume my duties in the Senate, though I fear I shall have been absent during the period of their greatest labours.¹⁰⁵

¹⁰³ Thompson, F.M.L., 'Cavendish, William, Seventh Duke of Devonshire, 1808-1891', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/4950>

¹⁰⁴ Burlington to Lubbock, 5 January 1839, Royal Society Lubbock Collection C50.

¹⁰⁵ Burlington to Lubbock, 6 May 1839, Royal Society Lubbock Collection C49.

The Senate's labours had indeed been great. During the Earl's absence, the first Matriculation and BA examinations had been held; those for the LLB, MB and MD had been prepared and were about to be sat. Lubbock was a constant presence supervising and often directing the work of the Senate beginning with his framing of regulations governing its operation in April 1837.¹⁰⁶ Faculty and sub-committee chairmen wishing to hold meetings were to request the authorisation of the Vice-Chancellor, as the following letter to Lubbock from the Registrar demonstrates:

I saw Mr Senior yesterday afternoon who desired to have a meeting of the committee of the Faculty of Laws summoned for Monday at three.

I was a little embarrassed as there was not time to get directions from you to call it. I thought under the circumstances you would excuse me if I summoned it taking for granted your approval. I am aware of the irregularity of this . . .¹⁰⁷

The position of registrar was central to the operation of the new institution and the appointment proved to be a source of considerable disagreement. Lubbock confided in Airy: 'I am anxious that we should be careful and judicious in the selection of Officers, of the registrar most particularly. I fear injudicious promises have been made'.¹⁰⁸ Lubbock was referring to an attempt to have the Scot, Dr James Craig Somerville, installed. This had been made by influential Senate member Henry Warburton who had, as *The Times* put it, 'promised away the situation to a friend frae the north'.¹⁰⁹ In the event, it was Lubbock's man, Richard Wellesley Rothman, a colleague from the SDUK who had assisted Lubbock with some of the calculations for his book on the orbit of comets and had been an active member

¹⁰⁶ Airy to Lubbock, 17 April 1837, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 214.

¹⁰⁷ Rothman to Lubbock, 11 July 1840, Royal Society Lubbock Collection R251.

¹⁰⁸ Lubbock to Airy, 14 March 1837, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 2/3.

¹⁰⁹ *The Times*, 23 January 1838.

of Lubbock's London Committee during the Cambridge election campaign, who was chosen from the sixty-three applicants.¹¹⁰

6.5 The question of Theology in the BA

The early and somewhat surprising appointment to the Senate of Thomas Arnold has already been noted. Arnold is usually considered to have been a Liberal Anglican; he had been a member of an intellectual group known as the Oriel Noetics, with liberal attitudes to reform and inclusion, based at Oriel College, Oxford. Arnold had come to prominence as a result of his success in transforming Rugby School following his appointment as Headmaster in 1828.¹¹¹ Mitchell suggests that Whigs were alarmed by Arnold's promotion of 'non-academic activities' associated with 'manliness' which was at variance with the Whig desire for 'an educational system that equipped citizens to be voters'.¹¹² Hilton, however, sees Arnold's 'manliness', not as the 'coarse, hearty, games-playing Tory imperialism' that it would become later in the century, but rather as one founded on Christianity – 'composed of earnestness, gentleness, truth-telling, dutifulness, compassion'.¹¹³ Either way, it is clear that Arnold was at the forefront of Spring Rice's thinking regarding the make-up of the new body since, like Lubbock and Airy, he received the letter asking him to serve on the Senate in September, 1835.¹¹⁴ Arnold had been in frequent correspondence with members of the SDUK during its early years in the hope of being able to 'impart to the publications of the Society . . .

¹¹⁰ Rothman to Lubbock, undated, probably 1830, Royal Society Lubbock Collection R176, R177; Lubbock, J.W., *On the Determination of the Distance of a Comet from the Earth and the Elements of its Orbit*. (London: Charles Knight, 1832); Rothman to Lubbock, 1 and 5 December 1832, Royal Society Lubbock Collection R178, R180; Rothman to John Drinkwater, 1 December 1832, Royal Society Lubbock Collection R179; Senate Minutes, 28 March 1838, University of London Archive UoL/ST2.

¹¹¹ Hilton, B., *A Mad, Bad and Dangerous People?* (Oxford: Clarendon Press, 2006), p. 465.

¹¹² Mitchell, L., *The Whig World 1760 – 1837* (London: Hambledon Continuum, 2005), p. 115.

¹¹³ Hilton, *A Mad, Bad and Dangerous People?*, p. 466.

¹¹⁴ Stanley, *The Life and Correspondence of Thomas Arnold, D.D.*, p. 265.

something of the religious spirit in which they seemed . . . to be deficient.¹¹⁵ Similarly, Arnold had , at one stage, considered becoming a professor at the old London University ‘in the hope of giving a religious influence to its proceedings’.¹¹⁶ In neither venture was he successful, but good relations were maintained with both organisations: in June 1831, William Tooke (Treasurer of both) wrote to Arnold on behalf of Lord Chancellor, Henry Brougham, (Chairman of both) offering a stall at Bristol Cathedral with a living attached.¹¹⁷ This was declined because Arnold felt it would be wrong to accept it when the Headmastership of Rugby would keep him away from Bristol most of the time, but he told Tooke, ‘I am sure that I value the offer quite as much, and feel as heartily obliged both to the Chancellor and you for it, as if I had accepted it.’¹¹⁸ Commenting also on the latest SDUK publication – ‘Cottage Evenings’ – Arnold continued:

You know of old how earnestly I have wished to join your Useful Knowledge Society; and how heartily on many points I sympathise with them. This very work, the “Cottage Evenings”, might be made everything that I wish, if it were but decidedly Christian.¹¹⁹

Spring Rice can have been under no illusion about the kind of man he was appointing to the Senate and perhaps, having himself expressed the view that moral and religious education was ‘the greatest of all national duties’, it was always his hope that Arnold might sway Senate opinion in this regard.¹²⁰ Writing to Arnold soon after he had agreed to serve on the Senate, Spring Rice hinted that an element of theology might possibly be included in the Classics examinations which ‘embracing as they must the principles of moral science – history – and political philosophy not only admit but demand . . . recognition of the religious

¹¹⁵ Ibid., p. 243.

¹¹⁶ Ibid., p. 265.

¹¹⁷ Ibid., p. 262.

¹¹⁸ Ibid.

¹¹⁹ Ibid.

¹²⁰ Wasson, ‘Rice, Thomas Spring, First Baron Monteagle of Brandon’.

principle'.¹²¹ A letter written by Arnold to Judge John Taylor Coleridge a few weeks after he had agreed to serve on the Senate states his intentions: 'I have accepted the office of one of the examiners in Arts . . . desirous, if possible, to exercise some influence on a measure which seems to me full of very important consequences for good or for evil'.¹²² He was anxious to make his views clear 'lest any man should think me an advocate for the plan of national education without Christianity; which I utterly abhor'.¹²³

'On coming to think and talk more on the subject', Arnold stated later as the Senate prepared to start its work, 'I was more and more convinced that the Scriptural Examination was both practicable and all but indispensable'.¹²⁴ Arnold believed, (incorrectly, as it would transpire), that in introducing 'the Scriptures as part of the Classical examination for every degree' he would have the backing of Nonconformists because 'Unbelief was making a cat's paw of Dissent'.¹²⁵ Writing to enlist the support of fellow Senate member Bishop Otter in April, 1837, he explained:

I need not say that I cordially agree with the Principle of the University that it recognises no sectarian distinctions. But while I fully allow this, I also find it expressly declared in our Charter that we are founded for the advancement of "Religion and Morality" . . . "Religion", in the King's mouth can mean only Christianity.¹²⁶

A statement issued the previous day by the Council of King's College 'in reference to the foundation of the University of London' offered Arnold further support when it declared that 'the Council retain unqualified and unmodified their deep and thorough persuasion that that

¹²¹ Spring Rice to Arnold, 29 September 1835, as quoted in Brent, R., *Liberal Anglican Politics: Whiggery, Religion and Reform 1830-1841* (Oxford: Clarendon press, 1987), p. 203.

¹²² Arnold to Mr Justice Coleridge, 18 November 1835, as quoted in Stanley, *The Life and Correspondence of Thomas Arnold, D.D.*, p. 267.

¹²³ Ibid.

¹²⁴ Ibid., p. 265.

¹²⁵ Ibid.

¹²⁶ Arnold to Otter, 30 April 1837 as quoted in Stanley, *The Life and Correspondence of Thomas Arnold, D.D.*, p. 307.

there is no other sure foundation for national education than the doctrines of the Christian religion'.¹²⁷

On 24 June, 1837, Arnold and Otter, together with Jerrard, found themselves appointed to the Faculty of Arts sub-committee for Classics, responsible for drawing up a 'descriptive schedule' for the subject as part of the BA examination.¹²⁸ This body was to make a report to the full Faculty of Arts Committee which, it had earlier been decided, was a 'Committee of the whole Senate'.¹²⁹ At the end of November the Sub-Committee let it be known that they wished to 'obtain the sanction of the Senate to one part that report' – the inclusion of Christian Theology in the Classics examination. Lubbock was concerned and wrote to Airy urging him to attend:

'We shall have a large meeting on Saturday next and I hope you will attend, if not, I should like to know your opinion and be able to state it at the meeting on the subject of "examining all candidates for B.A. in the New Testament and in sacred history". I do not think those who are anxious for this step have sufficiently weighed the difficulties which will attend it.

Lord Burlington comes to town on Saturday from Lancashire on purpose¹³⁰

A few days before the meeting Arnold wrote to his fellow Senate member Empson who, in spite of being a life-long friend, was against the inclusion of Theology. In the following quotation L – can only be Lubbock:

I hope we may meet on Saturday: I know that you are perfectly sincere, and that L – is so; nevertheless, I am persuaded that your argument goes on an over-estimate of the Theological . . . character of Christianity, and an under-estimate of it as a moral law; else how can L – talk of a clergyman being in a false position in belonging to the University.¹³¹

¹²⁷ *John Bull*, 30 April 1837.

¹²⁸ Senate minutes, 24 June 1837, University of London Archive UoL/ST2.

¹²⁹ Senate minutes, 6 May 1837, University of London Archive UoL/ST2.

¹³⁰ Lubbock to Airy, 30 Nov 1837, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 128.

¹³¹ Arnold to Empson, 28 November 1837 as quoted in Stanley, *The Life and Correspondence of Thomas Arnold, DD*, vol. 2, p. 315.

Airy did attend the Faculty of Arts meeting on Saturday 2 December, 1837, but Empson was, perhaps diplomatically, absent. The Classics sub-committee submitted their recommendation that ‘as a general rule the candidates for the degree of Bachelor of Arts shall pass an examination either in one of the four gospels or the Acts of the Apostles in the original Greek and also on Scripture History.’¹³² A motion ‘that this recommendation be not agreed to’ was defeated by 10 votes to 9: the sub-committee’s recommendation was, therefore, approved.¹³³ Unusually, it was resolved ‘that the names be inserted of those who voted in the preceding division’ revealing the Senate to have divided as follows:

That this recommendation be <u>not</u> agreed to	That this recommendation be agreed to
The Vice Chancellor	The Bishop of Durham
Mr Airy	The Bishop of Chichester
Dr Arnott	Dr Arnold
Dr Billing	Mr Bacot
Sir James Clark	Capt. Beaufort
Prof Henslow	Dr Jerrard
Mr Kiernan	Sir James McGrigor
Dr Sims	Mr Ridout
Mr Warburton	Dr Roget
	Mr Senior

Table 6.3 Voting record on the recommendation that candidates must pass a Theology examination.

Chancellor Burlington, who, as Chairman, was permitted by the Regulations and Bye-laws to vote ‘if he shall so think proper’, chose not to do so, perhaps torn between his views as a devout Christian and his position as a Whig government appointment.¹³⁴ If Empson had

¹³² Faculty of Arts Committee Meeting, 2 December 1837, University of London Archive UoL/ST2.

¹³³ Ibid.

¹³⁴ Regulations and Bye-laws Committee Meeting, 26 April 1837, University of London Archive UoL/ST2.

attended and voted with the 'ayes' Burlington would have had the casting vote. Aware of the significance of its decision the meeting resolved, unanimously, to ask the Senate whether 'it be not proper to inquire of Her Majesty's Government what the opinion of the Law Officers of the Crown is as to the competency of the University to institute the Examination in question' before proceeding further.¹³⁵ Accordingly, the Chancellor was requested 'to make this inquiry through Her Majesty's Secretary for Home Affairs' (Russell).

The extent of the apparent discord on this issue can be gauged from the following report in the *London Medical Gazette*:

We understand that a very stormy discussion took place last Saturday in the Senate of the University of London, as to whether candidates for degrees in arts should or should not be made to undergo any examination on the subject of religion. The question was at length decided in the affirmative, leaving Messrs Warburton and Lubbock, together with their followers, in the minority. By this decision the candidate is to be examined on the Gospels and some of the elementary works on theology. The degree in arts is made a pre-requisite to that in physic.¹³⁶

The conservative *Gazette* was, of course, no friend to the Radical Warburton who was a close associate of Thomas Wakley, editor of the rival journal, the *Lancet*. Neither was *The Times* which described amateur geologist Warburton as an 'ultra-liberal', (using a prefix more usually reserved for extreme Tories), 'whose geological dogmas are notoriously known to be unfavourable to revealed religion'.¹³⁷ 'But', *The Times* asked, in a comment aimed at Lubbock and the others voting against the proposal, 'what are we to think of those consistent and tolerant persons in the minority, who, professing to reverence revealed religion, are so tender of their darling liberalism, that rather than risk any apparent compromise of it by a few simple questions on Scripture *facts*, they have insisted that the New testament shall be ignominiously cashiered from their graduation test-books'.¹³⁸ For Lubbock, however, it was

¹³⁵ Faculty of Arts Committee Meeting, 2 December 1837, University of London Archive UoL/ST2.

¹³⁶ 'University of London', 9 December 1837, *London Medical Gazette* 21 (1837), p. 429.

¹³⁷ *The Times*, 25 March 1837.

¹³⁸ *The Times*, 23 December 1837.

perhaps as much a question of practicality as of ideology. 'If you are for a compulsory examination in religious subjects' he later told Airy who had by then changed his mind on the issue, 'I do not understand how you get over the clause [in the Charter]'.¹³⁹ This would also have been the opinion of minority voter Sims who, in advance of the meeting, had asked a prominent Congregationalist, Dr John Pye Smith, for his opinion on the proposal. Pye Smith considered it to be 'ineligible' for several reasons, the first of which being that 'it seems to involve a violation of the understood principle of the University'.¹⁴⁰

Jerrard set to work in trying to construct a scheme that would satisfy Dissenter objections, asking for Airy's help 'in consequence of the willingness you expressed after the discussion on Saturday to assist in devising some plan for securing the recognition at our University of the Christian Religion'.¹⁴¹ Airy responded favourably in spite of declaring himself 'rather startled by the phrase recognition of the Christian religion'.¹⁴² However, Jerrard's efforts were soon overtaken by events. Home Secretary Russell was besieged by protesting deputations from the United Dissenters led by Henry Waymouth MP and from the Council of University College.¹⁴³ 'With this view of the case', Russell wrote to Burlington, 'I must request your Lordship to bring again under the consideration of the Senate the proposed rule'.¹⁴⁴ 'What this implies', commented the *Morning Chronicle*, 'is known to every man acquainted with official language'.¹⁴⁵ The *Whig Chronicle* was especially critical of Dr Arnold:

¹³⁹ Lubbock to Airy, 10 February 1838, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 78. The Charter promised to 'hold forth to all . . . denominations of Our faithful subjects, without any distinction whatsoever, an encouragement for pursuing a regular and liberal course of education'.

¹⁴⁰ Pye Smith to Sims, 1 December 1837, as reported in the *Morning Chronicle*, 29 January 1838.

¹⁴¹ Jerrard to Airy, December 1837, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 130.

¹⁴² Airy to Jerrard, 16 December, 1837, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 131.

¹⁴³ *The Times*, 31 January 1838.

¹⁴⁴ Russell to Burlington, 13 December 1837, as reported in *The Times*, 31 January 1838.

¹⁴⁵ *Morning Chronicle*, 29 January 1838.

The doctor is, in his way a Reformer, but he is, after all, only an Oxford Reformer. . . No one but an Oxford doctor could have proposed this measure for, among all the Protestant Universities in Europe it is in Oxford alone that religious examination has been required in a candidate for degrees in arts . . . and it is only very recently that the practice has been introduced at Cambridge. The imposition, therefore, of this *Oxford* practice upon a university erected as an asylum against the intolerance of Oxford seems a proceeding as absurd as it is practically unjust¹⁴⁶

The *Chronicle* was not entirely correct: Theology had always been a traditional component of the Cambridge degree but, as Martha Garland points out, it had been ‘pushed into the background’ during the eighteenth century.¹⁴⁷ What had changed was that in 1822 the curriculum had been revised so that, as she notes, it now stated explicitly that ‘all students during their second year would sit for an examination covering either the four Gospels or the Acts of the Apostles’.¹⁴⁸ The serious point the newspaper is making in its concluding sentence, however, is clear.

Undeterred, Jerrard visited Waymouth and found him still opposed although he detected his opposition to be ‘very considerably softened’; he also wrote to Pye Smith asking him to consider the question again.¹⁴⁹ Pye Smith had to ‘confess that reflection only confirms my mind in the opinion I expressed to Dr Sims’ but he did make a suggestion that would provide a solution to the difficulty: ‘that any candidate for a degree . . . shall be at liberty to profess a readiness to be examined in the Hebrew text of the Old testament or in the Greek text of the New’ and that ‘the Examiners be authorised to comply with this request’.¹⁵⁰ The examination would be optional and not part of the degree.

¹⁴⁶ Ibid.

¹⁴⁷ Garland, M.M., *Cambridge before Darwin, The Ideal of a Liberal Education 1800-1860* (Cambridge: Cambridge University Press, 1980), p. 4.

¹⁴⁸ Ibid., p. 57.

¹⁴⁹ Jerrard to Airy, 29 January 1838, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 136.

¹⁵⁰ Pye Smith to Jerrard, 1 January 1838, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/137.

On 7 February the Classics sub-committee presented to the Faculty of Arts committee their 'plan with regard to the proposed examination in Greek testament and in Scripture History' but their recommendation that the examination should have to be passed by candidates for the BA examination 'as a general rule' was withdrawn. *The Times* reported that:

. . . the following resolution was adopted almost unanimously by a committee of the whole Senate of the University of London, at which 25 members were present: "That examination in the Hebrew text of the Old Testament, and in the Greek text of the New, and in Scripture History, shall be instituted by this University, to be followed by certificates of proficiency, and that all candidates for degrees in arts may, if they think proper, undergo such examination".¹⁵¹

The only dissenting voice was not that of Arnold, although he was at the meeting, but that of Airy who, with characteristic obstinacy, having switched sides would not be persuaded to support the resolution. Airy even went to the considerable expense of having a lengthy letter to the Chancellor printed and circulated in which he stated that Dissenters 'fear that differences in religious persuasion may cause partiality in examination; and this evil seems to me more likely to occur in the voluntary examination than in the general examination for the degree'.¹⁵²

The outcome divided Press opinion. Under the heading 'Settlement of the Scholastic Schism' *The Spectator* attempted to make a balanced assessment:

As in most cases of compromise, neither party get all they wish; but what is gained is gained by the Oxford Doctors, who have done a rather clever thing. They have established the principle that a theological education is recognized by the University as proper and desirable, if not indispensable.¹⁵³

¹⁵¹ *The Times*, 9 February 1838. To be strictly correct, this was a meeting of the Faculty of Arts Committee of which all those on the Senate were members.

¹⁵² Airy to Burlington, 10 February 1838, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/140.

¹⁵³ *The Spectator*, 10 February 1838.

The Lancet, however, offered a different assessment of the likely value of the certificates of proficiency suggesting that they would be ‘no more indispensable than proficiency in Greek Mythology’.¹⁵⁴

Lubbock distanced the certificates still further from the degree by persuading the Senate that the Scripture Examination could only be taken by candidates who had previously obtained the BA, and not in the same year. The reasons he gave Airy – ‘it will either be a most serious diversion for the Mathematical men or it will prevent them from doing well in it’ – seem almost spurious for a step which would significantly devalue the certificate.¹⁵⁵ Arnold had hoped that the University might adopt the Archbishop of Dublin’s suggestion that ‘the certificate of a man’s Degree should give notice of his having passed the Theological examination’. ‘Now’, he complained to Senate member Bishop Stanley, ‘I see that the Theological Examination is to follow the Degree so that this cannot be done; and the Degree is to all intents and purposes complete before the Theological examination even comes into question’.¹⁵⁶

Arnold discovered that, at a time when Jewish students were barred from Oxbridge and would continue to be so for many years to come, ‘every single member of the Senate excepting myself was convinced of the necessity, according to the Charter, of giving the Jews degrees’.¹⁵⁷ ‘I have no satisfaction’, he told a friend, ‘in belonging to a body whose views are so different from mine’.¹⁵⁸ Hearing that the Principal of King’s College, Hugh Rose, had said

¹⁵⁴ ‘University of London’, (10 February 1838), *The Lancet* 1 (1837-38), p. 720.

¹⁵⁵ ‘Scripture Examination’, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 79; Lubbock to Airy, February 1838, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/145.

¹⁵⁶ Arnold to Archbishop of Norwich, 7 June 1838, as quoted in Stanley, *The Life and Correspondence of Thomas Arnold, D.D.*, p. 329.

¹⁵⁷ Arnold to Sir T.S. Pasley, 16 February 1838 as quoted in Stanley, *The Life and Correspondence of Thomas Arnold, D.D.*, p. 321. Religious tests prevented Jews from graduating at Oxford and Cambridge until the passing of the Oxford University Act of 1854 and the Cambridge University Act of 1856.

¹⁵⁸ *Ibid.*

that 'he will little care whether the students of King's College pass our examination in Theology or no', only strengthened Arnold's resolution to resign.¹⁵⁹ In his letter of resignation, dated 7 November, 1838, he told Burlington:

Christianity should be the base of all public education in this country. Whereas with us it would be no essential part of one system, but merely a branch of knowledge which any man might pursue if he liked, but which he might also, if he liked, wholly neglect without forfeiting his claim, according to our estimate, to the title of a completely educated man.¹⁶⁰

Writing to Lubbock a few days later, Spring Rice, who had been so anxious to appoint Arnold to the Senate, said of him that 'I have come to the conclusion, I regret to say, that with all his talent and his high and honourable principle, he is a wrong headed man'.¹⁶¹

Lubbock's position regarding Theology is consistent with his being a member, at the time, of the short-lived Central Society of Education.¹⁶² Its members are generally held to have advocated secular elementary education focusing on the development of the child as an alternative to one based on the Scriptures as promoted by, for example, the (Dissenter) British and Foreign Schools Society and the (Anglican) National Society.¹⁶³ As Richard Brent has noted, however, not all members of the CSE were secularists.¹⁶⁴ Spring Rice was also a member and Jerrard, who had attempted to construct a non-denominational Theology syllabus for the University, was on the CSE Committee of Management.

In September, 1840, the Senate confirmed their commitment to facilitating the education of non-Christians by changing, at the request of the father of two Jewish students,

¹⁵⁹ Arnold to Archbishop of Norwich, 7 June 1838 as quoted in Stanley, *The Life and Correspondence of Thomas Arnold, D.D.*, p. 329.

¹⁶⁰ Arnold to Burlington, 7 November 1838 as quoted in Stanley, *The Life and Correspondence of Thomas Arnold, D.D.*, p. 334.

¹⁶¹ Spring Rice to Lubbock, 10 November 1838, Royal Society Lubbock Collection R43.

¹⁶² *Central Society of Education: First Publication*, (London: Taylor and Walton, 1837), vi.

¹⁶³ *Ibid.*, pp. 1-14.

¹⁶⁴ Brent, *Liberal Anglican Politics*, p. 239.

the dates of the Matriculation Examinations because one of the days coincided with the 'Day of Atonement of the Jews' when it would have been 'utterly impossible for my sons to attend any Examination'.¹⁶⁵

6.6 Examinations

6.6.1 Matriculation

On 17 July, 1837, the 'Sub-Committee appointed for the purpose of considering under what circumstances Students shall be admitted to Examinations for Degrees in Arts' resolved 'that it is expedient that there be a previous examination, and that no student be admitted to the examinations unless he have passed such previous examination, and unless he produce a certificate of having been two years at least a student of one of the recognised colleges'.¹⁶⁶ Candidates for what would come to be called the 'Matriculation Examination' would need to show that they were at least sixteen years of age and pay a fee of £2; moves to increase this to £5 were resisted in the University's early years so that the examination continued to be within the means of families with a modest income.¹⁶⁷ The Senate decided, in addition, that 'if he should fail the examination, the fee shall be returned to him'.¹⁶⁸ The early plan to have different Matriculation Examinations in each of the three faculties was soon discarded in favour of their being a common examination, even for medical students.¹⁶⁹ There seems to have been considerable accord amongst the Senate members regarding the constituent elements of this preliminary examination. Classics, acknowledged to be fundamental to a

¹⁶⁵ Senate Minutes, 30 September 1840, University of London Archive UoL/ST2.

¹⁶⁶ Faculty of Arts Sub-Committee minutes, 17 June 1837, University of London Archive UoL/ST2.

¹⁶⁷ Faculty of Arts Sub-Committee minutes, 3 March 1838, University of London Archive UoL/ST2. ; Senate Minutes, 23 February 1842, University of London Archive UoL/ST2. In February 1842 a motion by Jerrard to increase the fee to £5 was rejected.

¹⁶⁸ 'Regulations of the University of London on the Subject of Examinations for Degrees in Medicine [including regulations for the Matriculation Examination]', (April 1839), Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/79.

¹⁶⁹ Senate Minutes, 22 April 1837, University of London Archive UoL/ST2.

liberal education, was to feature strongly but the University would break new ground in requiring its prospective students to demonstrate proficiency in both Maths and Science. At the Medical Education Select Committee of 1834, Chairman Warburton had been anxious to obtain the views of the profession regarding a medical student's preliminary education and in the evidence given we have the opinions expressed by many future Senate members. Medical reformer Sims, for example, who believed strongly that the Royal College's Licentiate Examination 'ought to be conducted in the vernacular language of the candidate' rather than Latin, nevertheless considered the language to be essential in a prospective medical student's preliminary education.¹⁷⁰ Sims' answers (S) to Warburton's questions (W) reveal something of the views of both men:

(W) Ought . . . a student, before commencing his medical studies, to know Latin?

(S) Yes, he ought to have a knowledge of Latin

(W) Is it desirable that he show also know some Greek?

(S) Yes, he should have a knowledge of Greek, so as to enable him to understand the meaning of terms, and to read any author if he chose; but I should not make it a *sine qua non*.

(W) Arithmetic?

(S) Arithmetic of course.

(W) Elementary geometry?

(S) Yes.

(W) The solution of simple equations?

(S) It is a matter of doubt whether you should require so much of a candidate . . .

(W) Even if he did not study natural philosophy mathematically, would it not be desirable that he should have acquaintance with popular physics?

(S) Certainly it would.¹⁷¹

¹⁷⁰ *Report from the Select Committee on Medical Education* vol. I 'Physicians', p. 134.

¹⁷¹ *Ibid.*, p. 142.

However, simple equations, alongside arithmetic, algebra and Euclidean Geometry (Book 1), *would*, it was decided, be included in the mathematics section of a Matriculation examination that set new standards both in the breadth of the syllabus and the depth of knowledge required. If, as Harte rightly suggests, ‘the London syllabus [for the BA] brought a range of new subjects into the scope of university education for the first time’, the matriculation examination did likewise for education in schools and Colleges.¹⁷² In it we can see, as Harte notes, ‘the origin of the School Certificate [introduced in 1918] and the General Certificate of Education’, the O and A-Levels which replaced the Certificate on its abolition in 1951.¹⁷³ Nearly all the school subjects which we today recognise as traditional were to be found in the matriculation syllabus including, within Classics, the grammatical structure of the English Language and outlines of History and Geography. It was decided that for the Classics papers, one Greek and one Latin subject was to be selected by the Committee of the Faculty of Arts, one year previously, from authors such as Homer, Xenophon, Virgil, Horace, Livy and Cicero.¹⁷⁴ For the first Matriculation examination of 1838, the Committee decided that the ‘set books’ were to be Homer, the *Iliad*, Book V and Cicero, *De Senectute* and *De Amicitia*.¹⁷⁵ ‘Proficiency in composition’ was to be ‘judged by style of answers generally’.

As students from the numerous Colleges becoming affiliated to the University found, the examination represented a considerable challenge particularly when, after 1841, they were required to show ‘a competent knowledge . . . in all . . . branches of the examination’, not just in Classics, Mathematics and Natural Philosophy as had been the regulation earlier. ‘Why,’ commented *The Times*, ‘the candidate who can “show a competent knowledge of all these subjects” ought to be welcomed with open arms’, before adding that ‘scarcely one

¹⁷² Harte, *The University of London 1836-1986*, p.25.

¹⁷³ *Ibid.*

¹⁷⁴ “Regulations of the University of London on the Subject of Examinations for Degrees in Medicine [including regulations for the Matriculation Examination]’, (April 1839), Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/79.

¹⁷⁵ Minutes of the Committee of the Faculty of Arts, 27 June 1838, University of London Archive UoL/ST2.

pupil educated at Eton, the Charterhouse, Shrewsbury &c will be enabled to pass this examination without special preparation'.¹⁷⁶ In 1842, eighty-one candidates presented themselves for the examination and sixty-four (79%), from twenty-one different institutions, passed. Of those who were successful, fourteen were educated at University College which continued to provide the largest number of candidates in the University's early years.¹⁷⁷ This reflects, perhaps, the success of University College's own School (opened November 1830) which, by the 1840s, had acquired a reputation for its teaching of maths and was providing lessons in Chemistry, Physics and botany.¹⁷⁸

At a time when Public schools such as Eton were just facing up to the need to teach Mathematics alongside Classics, the London Matriculation syllabus required in addition from its candidates, most of whom were boys between sixteen and nineteen years of age, a familiarity with scientific subjects which was, in the context of the time, far from superficial. In brief outline, the science syllabus was as follows, beginning with the compulsory examination in Natural Philosophy.

Natural Philosophy:

Mechanics including the Laws of Motion

Hydrostatics, hydraulics and pneumatics

Acoustics

Optics

The University sought to reassure any candidates disheartened by the broad range of the Natural Philosophy specification that 'a popular knowledge only of these subjects in natural

¹⁷⁶ *The Times*, 5 November 1838.

¹⁷⁷ Senate Minutes, 17 August 1842, University of London Archive UoL/ST2.

¹⁷⁸ Hale Bellot, *University College London, 1826-1926*, pp. 169-70.

philosophy will be required such as may be attained by attending a course of experimental lectures'.¹⁷⁹

Candidates were required also, to answer questions from one of the following sections:

Chemistry:

The components of the atmosphere and of water

General characters of the supporters of combustion, the combustibles and the metals

Natural History – Zoology:

The characters of the primary divisions of the animal kingdom and the classes and orders of the vertebrate sub-kingdom according to the system of Cuvier

Natural History – Botany:

The characters of the natural classes and principal orders belonging to the flora of Europe in the classification of De Candolle

Spread over four days, the Matriculation Examination would comprise two three-hour morning papers in each of Mathematics and Classics (including Greek and Roman History) and a further three-hour afternoon paper in each of Natural Philosophy, Chemistry or Natural History, English History (to the end of the Seventeenth Century) and the English language.¹⁸⁰ Lubbock was insistent that Matriculation, and other examinations should be 'entirely by printed papers; in order that we may know the questions which the examiners set and that the public may acquire as definite idea as possible of the nature of our examinations'.¹⁸¹ It was agreed, however, that 'the examiners shall not be precluded from

¹⁷⁹ 'Regulations of the University of London on the Subject of Examinations for Degrees in Medicine [including regulations for the Matriculation Examination]', (April 1839), Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/79.

¹⁸⁰ Faculty of Arts Sub-Committee minutes, 10 March 1838, University of London Archive UoL/ST2.; 'Regulations of the University of London on the Subject of Examinations for Degrees in Medicine [including regulations for the Matriculation Examination]', (April 1839), Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/79.

¹⁸¹ Lubbock to Airy, March or February 1838, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/79.

putting any *viva voce* upon the written answers of the candidates, when they appear to require explanation'.¹⁸² Demonstrating a hierarchy of subjects, candidates who had performed well in the Matriculation Examination and who had not yet completed their nineteenth year could be 'examined for honours' in either Mathematics and Natural Philosophy or in Classics. This entailed their being brought back the following week for a further three days of more searching examinations, morning and afternoon. In Mathematics, for example, this now required answering questions on plain and spherical trigonometry and on conic sections. In Classics, the questions on Homer alone, out of the numerous works of antiquity listed, could be based on the first six books of the *Iliad* and on books IX -XII of the *Odyssey*.¹⁸³ At the discretion of the examiners and dependent upon 'sufficient merit' being demonstrated, 'the candidate who shall distinguish himself the most in Mathematics and Natural Philosophy' and his counterpart in Classics could 'each receive an exhibition of 30/ per annum for the next two years', if continuing their studies.

By 1842, the Registrar was able to report that the number of Institutions from which the University was authorised to receive candidates for matriculation and subsequent examinations now stood at 21. While Rothman did not group them by any criterion, organising them by religious affiliation reveals the extent to which the University was now providing the access to a degree previously denied to non-Anglicans:

Dissenting Academies (10 in total):

Manchester New College, Homerton, Highbury, Spring Hill College Birmingham, Stepney College, Countess of Huntingdon's College Cheshunt, Baptist College Bristol, Airedale College Undercliffe near Bradford, Protestant Dissenters' College Rotherham and Presbyterian College Carmarthen.

Catholic (7):

¹⁸² 'Regulations of the University of London on the Subject of Examinations for Degrees in Medicine [including regulations for the Matriculation Examination]', (April 1839), Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/79.

¹⁸³ *Ibid.*

St Cuthbert's, St Edmunds College near Ware, St Mary's College, Oscott, Stoneyhurst, Colleges of St Peter and St Paul Prior Park, College of St Gregory the Great, Downside near Bath and Carlow College.

Anglican (2):

King's College, London and Bristol College. (At Bristol, Anglican religious instruction was provided but was optional).

Non-sectarian (1):

Royal Belfast Academical Institution (the Belfast Merchants' College).

Secular (1):

University College London

Many of the affiliated Dissenting Academies provided ministerial training. Examples of these, from each of the 'Three Denominations' which had together petitioned Parliament for admission to the Universities in 1834, include Spring Hill (a Seminary for the Congregational ministry), Stepney (for the Baptist ministry) and Carmarthen (for the Presbyterian).¹⁸⁴ St Cuthbert's, St Edmund's and St Mary's were the three Roman Catholic seminaries for England and Wales. In 1840, the Whig Government's (strictly, Crown's) authorisation for St Mary's students to sit for examination at London prompted *John Bull* to condemn 'the extent of Royal favour which has just been conferred' upon the 'papist college of St Mary'.¹⁸⁵ Similarly, *The Age* commented as follows on the authorisation of Carlow College in Ireland:

Her Majesty has granted to the Catholic College of Carlow a warrant entitling the students of that institution to take degrees in the University of London. Her Majesty has, of course, taken this step by and with the advice and consent of her Ministers. The consequence of the act thus officially announced will be to elevate the Catholic College of Carlow at the expense of Trinity College, Dublin.¹⁸⁶

¹⁸⁴ 'Admission of Dissenters to the Universities', HC Debate 20 June 1834 *Hansard* vol.24 cc632-714; Dissenting Academies Online, the Queen Mary Centre for Religion and Literature in English, <https://www.qmul.ac.uk/sed/religionandliterature/dissenting-academies/dissenting-academies-online/>

¹⁸⁵ *John Bull*, 15 March 1840.

¹⁸⁶ *The Age*, 7 June 1840 .

Since the 1793 Irish Act, Catholics had been entitled to take degrees at Trinity, Dublin, but not to become Fellows or Professors or, of great significance to the many poorer students, be awarded a Scholarship. Even after the passing of the Catholic Emancipation Act of 1829 they continued to be 'excluded from these advantages'.¹⁸⁷ In May, 1840, Carlow's Principal, Fr Andrew Fitzgerald, a man described at the time as openly displaying 'Catholic and democratic fervour', persuaded his College to reject Trinity and begin its long association with the University of London.¹⁸⁸

6.6.2 The BA and MA

In 1842, Registrar Rothman provided the following information about the University's BA examination, now in its fourth year:

The Examination for the Degree of Bachelor of Arts takes place two years after Matriculation. These two years must be passed in Study at one of the Colleges in connexion with the University. The Examination is much the same in its general character with that for Matriculation, but a more extensive knowledge in the respective subjects is required, and none of them are optional.¹⁸⁹

As Rothman was suggesting, there was a similar emphasis on Mathematics, Natural Philosophy and Classics but where Matriculation candidates had the option of choosing to sit a paper in either Chemistry, Botany or Zoology the BA degree now included compulsory examinations in Chemistry and in the more complex subjects of Animal and Vegetable Physiology. BA candidates were also examined in Moral Philosophy and in either the French

¹⁸⁷ 'Catholics and Trinity College, Dublin', HC Debate 08 May 1834, *Hansard* vol. 23 cc761-67.

¹⁸⁸ De Tocqueville, A., *Journeys to England and Ireland* (New Haven Ct: Yale University Press, 1958), p.1 32. De Tocqueville interviewed Fitzgerald in 1835. Senate Minutes, 1 June 1840, University of London Archive UoL/ST2.

¹⁸⁹ Huber, V.A., *The English Universities* (London: Pickering, 1843), p. 566.

or the German Language. The fee was 10/. Primary sources allow us to piece together the complex process by which the comprehensive and innovatory BA syllabus was constructed.

In May 1837, even before the Committee of the Faculty of Arts had begun its consideration of the 'knowledge required' for the BA, Arnold, responding to the request that 'members as personally cannot attend . . . should communicate their suggestions on paper', had written to Burlington setting out his vision for the examination.¹⁹⁰ Arnold's ideas, some of which were considerably at variance with those of other Senate members, provide a convenient starting point for the examination of the Senate's deliberations on this matter. There was agreement with Arnold that faced with the choice to either 'shape our examinations according to the system of instruction actually pursued by other institutions or . . . risk dictating to them their course of study', it was their 'duty . . . to adopt the latter alternative.'¹⁹¹ However, Arnold imagined a London BA inferior to that at Oxford and Cambridge, 'not more severe than persons of eighteen or nineteen may be expected to a pass'.¹⁹² Although the standard for the BA should be 'higher than it is practically fixed for Matriculation at Oxford . . . or Cambridge', it would be, suggested Arnold, the London *Master of Arts* degree which would be 'what the BA degree is at Oxford or Cambridge'.¹⁹³ On this point, the Committee did not share Arnold's opinion: the standards required for the new BA were not just to match those at the Ancient Universities, they were to exceed them. Arnold suggested the following content for the BA:

I suppose it would not be disputed that the examination for our degree of BA should embrace at least two divisions, physical and moral knowledge . . . I am inclined to think that a threefold division might be better; into physical science on the one hand; moral science including history . . . moral philosophy and poetry; and thirdly, formal science, including the elements of geometry and algebra, logic and grammar or philology. . . If this be considered too much, then surely the formal and moral science

¹⁹⁰ Arnold to Burlington, 26 May 1837 and Senate Minutes, 31 May 1837, University of London Archive UoL/ST2.

¹⁹¹ Ibid.

¹⁹² Ibid.

¹⁹³ Ibid.

must be insisted on; and if any one be waived, which I would rather not be the case, it should be physical science.¹⁹⁴

Summarising his thinking, Oxford classicist and Rugby Headmaster Arnold therefore made the progressive suggestion that the London BA should include, if possible, ‘a certain amount of physical science, all details on which I leave entirely to others’, together with the traditional elements of university education found at Oxford and Cambridge – Greek and Roman authors, Moral Philosophy, History and ‘the elements of Euclid and logic’.¹⁹⁵ The Committee of the Faculty of Arts (the whole Senate), however, quickly agreed that, as with Matriculation, physical science would not just be a desirable component of the BA, it would be indispensable.¹⁹⁶ By the end of the Committee’s second meeting, on 21 June, 1837, the following requirements for the BA had been agreed:

Classics – Greek and Latin authors, prose and verse

Mathematics – Arithmetic, Algebra, Geometry, Trigonometry

Elements of Moral Philosophy

The French or German Language

Elements of Natural Philosophy

Elements of Chemistry

Elements of Animal and Vegetable Physiology

Elements of Logic¹⁹⁷

It should be noted that this draft structure was agreed some eight months before the analysis of reports from ‘foreign universities’ was begun in order to ascertain, in addition to their administrative arrangements, the ‘course of study required’.¹⁹⁸ The innovative emphasis on

¹⁹⁴ Ibid.

¹⁹⁵ Ibid.

¹⁹⁶ Minutes of the Committee of the Faculty of Arts, 17 June 1837, University of London Archive UoL/ST2.

¹⁹⁷ Minutes of the Committee of the Faculty of Arts, 17 and 21 June 1837, University of London Archive UoL/ST2.

¹⁹⁸ Senate Minutes, 21 February 1838, University of London Archive UoL/ST2.

science in the new BA is clear to see and the inclusion of either French or German would bring modern languages into university education for the first time.

Sub-committees were appointed to 'draw up a descriptive schedule of the particular subjects':

Chemistry, Animal and Vegetable Physiology: Faraday, Henslow, Roget

Mathematics and Natural Philosophy: Airy, Arnott, Lefevre

Logic and Moral Philosophy: Empson, Senior, Warburton

Classics: Otter (Bishop of Chichester), Arnold, Jerrard¹⁹⁹

Burlington and Lubbock's responsibilities in this period related to another committee appointed 'for the purpose of considering under what circumstances students shall be admitted to examinations for degrees in Arts'.²⁰⁰ This 'Committee of Circumstances' would have oversight of the work of the other groups, collate their recommendations and make any modifications necessary in constructing a complete examination. The process can be illustrated by a close inspection of the work of the Mathematics and Natural Philosophy sub-committee. In addition to Airy this included Arnott, a physician but also highly respected for his work, *Elements of Physics*, and Lefevre, a lawyer but who had been Senior Wrangler in 1818.²⁰¹ 'I have put query to a few of the subjects in Mr Lefevre's list', Arnott wrote to Airy regarding proposals for mathematics, 'knowing that several members of our Senate will think we have required too much'.²⁰² Airy did not share Arnott's opinion: 'I quite agree with Mr

¹⁹⁹ Minutes of the Committee of the Faculty of Arts, 24 June 1837, University of London Archive UoL/ST2.

²⁰⁰ Minutes of the Committee of the Faculty of Arts, 15 July 1837, University of London Archive UoL/ST2.

²⁰¹ Arnott, N., *Elements of Physics, or Natural Philosophy, General and Medical, Explained Independently of Technical Mathematics* (London, 1827).

²⁰² Arnott to Airy, 20 November 1837, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/65.

Lefevre', he replied, 'in requiring more than is required at Cambridge'.²⁰³ Lubbock, however, having received the sub-committee's report, felt they should have been even more demanding. 'I think your report much too easy', he informed Airy, 'and I should be disposed to add at least conic sections under geometry and in the first section of Newton under mechanics'.²⁰⁴ Conic sections were duly added amongst other changes causing Airy to complain to Lubbock:

Was it intended that the Committee of Circumstances should alter ad libitum the scheme suggested by the sub-committee to whom the subject of mathematical examinations was expressly referred? It seems to me that they are going beyond their duty . . . Moreover, it appears to me to be an uncourteous act towards the sub-committee (who had employed their labour on the matter) . . .

I cannot help thinking that I have spent some time which I could ill spare to no purposes . . .²⁰⁵

Airy, who was rarely able to attend meetings in person, was perhaps unaware that Arnott was himself a member of the Circumstances Committee and had attended the meeting of 13 March 1838 which agreed the syllabus for Mathematics and Natural Philosophy.²⁰⁶ Airy was also concerned that resolutions were being made by committees whose composition varied, meeting by meeting, due to the irregular attendance of members: 'Even while attending frequently at . . . meetings', he told Lubbock, 'the fluctuations occasioned by their not attending uniformly, will be extremely inconvenient; I need not to recall to any member of the Senate that, at consecutive meetings, different members have attended . . .²⁰⁷ However, as has been noted earlier, a small core of men attended nearly every Senate meeting and it

²⁰³ Airy to Arnott, 21 November 1837, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/66.

²⁰⁴ Lubbock to Airy, 15 March 1838, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/81.

²⁰⁵ Minutes of the Committee of the Faculty of Arts, 13 March 1838, University of London Archive UoL/ST2; Airy to Lubbock, April 9 1838, Royal Society Lubbock Collection A134.

²⁰⁶ Minutes of the Committee of Circumstances, 13 March 1838, University of London Archive UoL/ST2.

²⁰⁷ Airy to Lubbock, 13 December 1838, Royal Society Lubbock Collection A140.

was largely the same individuals who, as members of the Committee of Circumstances, came together on ten occasions in the space of one month to organise the syllabus for the BA Examination. As can be seen, Burlington, Lubbock, Jerrard and Kiernan attended every meeting.

	3 Mar	10 Mar	13 Mar	17 Mar	24 Mar	26 Mar	29 Mar	31 Mar	3 Apr	4 Apr
Burlington	/	/	/	/	/	/	/	/	/	/
Lubbock	/	/	/	/	/	/	/	/	/	/
Otter								/		
Arnott			/		/					
Bacot	/	/		/	/	/	/	/		/
Jerrard	/	/	/	/	/	/	/	/	/	/
Kiernan	/	/	/	/	/	/	/	/	/	/
Lefevre				/						
Ridout	/	/			/			/		/
Roget	/		/			/	/			/
Warburton		/								/

Table 6.4 Attendance at Committee of Circumstances meetings. 3 March to 4 April 1838.²⁰⁸

A flavour of the depth and breadth of the examination syllabus they produced is provided by the following few examples from the science components. It will be obvious that, in many cases, they reflect what were the most recent scientific developments.

Mechanics – Hydrostatics: the diving bell, hydraulic ram and steam engine

Optics: the eye considered as an optical instrument

Astronomy: the principle of the equatorial, the transit instrument, the mural circle

Chemistry – Hydrogen: how procured, its nature, levity, proportion in water, presence in most fuels, product when burnt

²⁰⁸ Minutes of the Committee of Circumstances, 3 March to 4 April 1838, University of London Archive UoL/ST2.

Vegetable Physiology: fertilization of the ovule and its maturation

Animal Physiology: the nature of digestion.

A similar breadth and depth of study was to be required for the Mathematics, Moral Philosophy and Classics examinations: 'The examination in Classics has been made easier', Lubbock told Airy, before stating his opinion that it was 'still rather difficult'.²⁰⁹ A resolution of 17 March 1838 makes it clear that within this new and exacting BA examination there was to be, as with matriculation, a hierarchy of subjects:

Resolved, That no candidate be approved by the examiners unless he shows a competent knowledge of the subjects of the examination; but higher attainments in the Classics or in Mathematics and Natural Philosophy shall compensate for lower attainments in other subjects.²¹⁰

The University rejected all requests to make the examination less demanding, notably when Colleges asked that Chemistry, Animal Physiology and Vegetable Physiology be made options from which students might select one.

There was, however, to be no place for the relatively new discipline of Geology in any of the University's examination syllabuses. The dominant position of subjects like astronomy was not lost on at least one Senate member at the time: 'On looking over the schedules', James Clark wrote to Michael Faraday, 'there appears to me to be a great omission in no notice being taken of Geology and Meteorology – what think you of this? – We require our candidates to know all that is known of the distant planets, whilst he may be perfectly ignorant of the nature of the planet which he inhabits'.²¹¹ The omission of Geology

²⁰⁹ Lubbock to Airy, 30 March 1838, Professor Sir George Biddell Airy Papers, University of London Archive MS929.

²¹⁰ Minutes of the Committee of Circumstances, 17 March 1838, University of London Archive UoL/ST2.

²¹¹ James Clark to Michael Faraday, 30 April 1838, Michael Faraday Collection 1078, <https://epsilon.ac.uk/view/faraday/letters/faraday1078>. Clark and Faraday were working on the Descriptive Schedule for Chemistry.

is indeed a surprise given the status which the subject had achieved by this stage in the nineteenth century. The Senate included a Geologist, and one of some distinction – Henry Warburton, who would be elected President of the Geological Society in 1843 – but his focus was on the degree in Medicine. There was no shortage of other reliable Geologists (George Greenough, for example, who was on the committee of the SDUK throughout the 1830s) who might have been called upon to devise a syllabus if this had been wanted.²¹² Geology would have to wait until the creation of the Faculty of Science in 1858 to find itself included, alongside palaeontology, as a compulsory element of the first Bachelor of Science degree.²¹³

The Committee of Circumstances now turned its attention to the Master of Arts Degree which, unlike its Oxbridge counterparts, was to be by examination taken one year after the BA in one of the following subjects: Classics, Mathematics and Natural Philosophy, Moral Philosophy.²¹⁴ One of the earliest resolutions of the Senate had been ‘that a certain knowledge of classics and mathematics shall be an indispensable condition for the degree of Master of Arts’.²¹⁵ A move to omit Moral Philosophy from the MA and instead offer it as a Certificate of Proficiency (a move which Lubbock supported and may have proposed) was eventually rejected and it retained its place as part of Branch III, Logic; Moral, Mental and Political Philosophy, with Political Economy.²¹⁶

6.6.3 Certificates of Proficiency

Before concluding discussions concerning the University’s examinations, brief mention must be made of the innovative proposals for a range of Certificates of Proficiency, proposals

²¹² Wyatt, J., ‘Greenough, George Bellas, (1778-1855)’, *Oxford Dictionary of National Biography* <https://doi.org/10.1093/ref:odnb/11432>

²¹³ Harte, *The University of London 1836-1986*, p. 111.

²¹⁴ Minutes of the Committee of Circumstances, 7 May 1838, University of London Archive UoL/ST2.

²¹⁵ Senate Minutes, 31 May 1837, University of London Archive UoL/ST2.

²¹⁶ *Ibid.*; Huber, *The English Universities*, p. 566.

which were never to come to fruition (except in Theology, as has been discussed earlier). Early committee discussions show that it was planned to offer Certificates in Political Economy, Architecture, Civil Engineering, Chemistry, Botany, Geology and Mineralogy, Zoology, Oriental Languages and in Navigation and Hydrography.²¹⁷ Mining was added to the list at a later date. The Certificates were to be available to candidates independent of the degree examinations and the fee was to be 10/. Candidates could sit for Honours and one gold medal to the value of £5 was to be awarded to the best scholar.

Harte, understandably, fails to mention these examinations that were never to be, but they were surely the reason why many members of the Senate were selected. Beaufort, for example, described by Harte as 'in himself a synonym for nautical science', seems an unlikely choice until the connection with the Certificates is made.²¹⁸ It also explains the presence on the Senate of Walker, builder of lighthouses and harbours, who was, at the time, President of the Institution of Civil Engineers. A committee 'appointed for the purpose of considering the subject of certificates of proficiency in Civil Engineering and in Navigation and Hydrography' met for the first time on 13 February 1839 under Lubbock's Chairmanship. The other members were Airy, Faraday, Roget and Warburton and, of course, Beaufort and Walker. Even before this first meeting preparations for the first Certificates were underway. Lubbock's enthusiasm for them is evident from his letter to Airy of 8 February:

I should like to see the details of the examination of Proficiency in Navigation and Civil Engineering settled. Particularly the former. I think we may be able to get Trinity House and the Shipping Interest to take an interest in it and thus it might be of great benefit.²¹⁹

²¹⁷ Minutes of the Committee of Circumstances, 7 and 9 May 1838, University of London Archive UoL/ST2.

²¹⁸ Harte, *University of London 1836-1986*, p. 85.

²¹⁹ Lubbock to Airy, 8 February 1839, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/88.

Airy, who was primarily responsible for the draft of the syllabus for Navigation and Hydrography, wrote to enlist the support of distinguished naval Captain and astronomer, William Smyth. “I am right glad your attention is drawn to the very defective education of naval officers’, Smyth replied. ‘The neglect of naval science has indeed been prodigious’.²²⁰ On 30 February reports were presented to the Committee outlining proposals for Certificates in Navigation and Hydrography (by Airy), Civil Engineering (by Walker) and Mining (by geologist Warburton). The certificates would have provided some of the earliest vocational qualifications and the following selection from the draft specifications gives a sense of what the examinations might have involved.

Navigation and Hydrography:

6 methods for latitude

3 methods for determining time at a place

7 methods for longitude

Laws and phenomena of the tides

Construction of maps on 5 different projections

Theory of stability of floating bodies

Construction of temporary rudders

Civil Engineering:

Arches and domes

Theory of catenary – bridges

Computation of the Power of horse mills, water wheels (three types), wind mills and steam engines. The power of men and horses

Construction of steam engines (5 types)

Construction of roads canals and railways

Harbours

Geodesy

²²⁰ Smyth to Airy, 18 December 1839, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/112.

Mining:

Geological structure

Techniques for the discovery of mineral deposits

Sinking shafts – levels and galleries

Methods of working seams of coal

Firedamp and safety lamps

However, all such preparations were overtaken by events. ‘It appears’, Lubbock wrote to Airy, ‘that under our present Charter we cannot give Certificates of Proficiency except connected with degrees’. ‘Captains of Merchantmen’, he continued, ‘will never come to take our degrees in Arts’.²²¹ The University’s lawyer confirmed that this was the legal position and the government responded negatively to a request from the Senate that they should be ‘empowered to grant Certificates . . . to persons not entitled to take degrees’.²²² An emphatic diagonal line struck through the title page of Airy’s own copy of his Hydrography syllabus says more than words about his feelings on this matter.²²³

In March, 1841, Lubbock wrote, on behalf of the Senate, to Home Secretary Normanby requesting that ‘in any Supplementary Charter which may be granted to this University, it is expedient that the Senate should have the power of granting Certificates of Proficiency in such subject of Examinations as may be hereafter determined, to others than who have been examined for and found qualified to take a Degree’.²²⁴ The reply, simply acknowledging receipt of the letter, is the last reference to Certificates of Proficiency to

²²¹ Lubbock to Airy, probably February 1839, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/92.

²²² Lubbock to Airy, 1 March 1839, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 1/94/1; Senate Minutes, 17 February and 18 March, 1840, University of London Archive UoL/ST2

²²³ Hydrography Report, Professor Sir George Biddell Airy Papers, University of London Archive MS929, 97.

²²⁴ Senate Minutes, 10 March 1841, University of London Archive UoL/ST2.

appear in the Senate Minutes and marks the disappearance of these qualifications in this form.²²⁵

6.7 Concluding remarks

In March 1842 Lubbock gave notice that he would not be seeking re-election as Vice-Chancellor. Burlington wrote to him as follows:

I regret extremely to hear that you intend to retire from the office of Vice-Chancellor at the next election. I fear it will be difficult to find a successor equally able and willing to serve the University.²²⁶

I have long been of opinion that the government ought not to expect those who devote much of their time to the university to do so without remuneration and I have on former occasions stated my opinion to Lord John Russell. This applies undoubtedly more strongly to the case of the Vice-chancellor than to any other member of the senate. I doubt however whether under present circumstances anything can be hoped for from the government.²²⁷

The only official recognition of Lubbock's efforts is a brief note in the Minutes of 15 June 1842 where it is recorded that it was resolved 'that the thanks of the Senate be given to Sir John William Lubbock for the manner in which he has performed the duties of Vice-Chancellor since the foundation of the University'.²²⁸

Largely under Lubbock's direction, the University had been established as an essentially secular institution. Science had been introduced into university education for the first time and as a compulsory requirement both for matriculation and graduation in Arts. This would pave the way for the University's introduction of the first BSc degree in 1858.

²²⁵ Senate Minutes, 17 March 1841, University of London Archive UoL/ST2; Harte, *The University of London, 1836-1986*, p. 115. In 1866, by special permission of the Home Office, Certificates of Proficiency in a range of subjects were introduced as qualifications for women who were not at the time allowed to graduate.

²²⁶ Burlington to Lubbock, 2 April 1842, Royal Society Lubbock Collection C85.

²²⁷ Burlington to Lubbock, 30 May 1842, Royal Society Lubbock Collection C86.

²²⁸ Senate Minutes, 15 June 1842, University of London Archive UoL/ST2.

Lubbock's influence on the new University's curriculum is evident from the dominant position occupied by Mathematics and related physical sciences within its syllabuses.

Gillian Cooke and Andrew Watts have traced the origins of the 'Local Examinations' which the universities of Oxford and Cambridge each instituted in 1858.²²⁹ These examinations for school pupils, they suggest, 'grew from within educating communities'. Ben Macintyre, in a recent (2021) newspaper article, describes the 'Oxbridge Locals' of 1858 as 'the first school exams'.²³⁰ However, as F.M.G. Wilson has pointed out, while the 'Locals' of 1858 may have been the first to be designed as 'school exercises', the 'London Matric' had been assessing the competence of 16–19-year-old boys in a range of subjects for twenty years by this stage and can thus claim to be the origin of the standard school-leaving certificate.²³¹ The London Matriculation exam is a surprising omission from Cooke and Watts list of suggested 'forerunners' of the 'Locals'.²³² Wilson calculates that by the end of the century some thirty-nine thousand London candidates had matriculated, while only a quarter of them had gone on to take degrees. Thousands of boys and, from 1879, girls, left their schools with London Matriculation as their 'final formal educational qualification'.²³³

To underline the significance of these points, the last word will be left to Lubbock's son, John, addressing the House of Commons sixty years after the University's foundation. Speaking (unsuccessfully) in opposition to the passage of the 'London University Commission Bill' which would make the University responsible for teaching as well as examining, the now

²²⁹ Cooke, G., and Watts, A., 'The Cambridge "Locals" and their Legacy' (Seminar 1 October 2013), <https://www.cambridgeassessment.org.uk/Images/the-cambridge-assessment-archives-andrew-watts-presentation.pdf#>

²³⁰ Macintyre, B.R.P., 'Rows over Exams have raged for 160 years', *The Times*, 27 February 2021.

²³¹ Wilson, F.M.G., *The University of London, 1858-1900: The Politics of Senate and Convocation* (Woodbridge: The Boydell Press, 2004), p. 4.

²³² Cooke and Watts, 'The Cambridge "Locals" and their Legacy'. The following 'forerunners' are identified: Teacher Accreditation Scheme (1846), College of Preceptors (mid-1850s), Civil Service examinations (1854-55), Society of Arts 'trade exams' (1855).

²³³ Wilson, *The University of London, 1858-1900*, p. 4; Harte, *The University of London, 1836-1986*, p. 127. Women were allowed to take the full Matriculation examination for the first time in 1879. In 1880 four passed the final BA examination and became the first women in the country to graduate.

Sir John Lubbock, 4th Baronet and MP for the University of London, made the following comments:

London is the only English university which insists that all candidates should be grounded in science. In the encouragement of science the University of London has exerted and is exerting, especially through its matriculation examinations, an influence upon secondary schools which can scarcely be overrated . . . and by doing so has determined the education of many times the number of its candidates.²³⁴

John Lubbock, who was just two years old when the University was founded, was probably unaware of the true extent of his father's role in bringing this about.

²³⁴ 'London University Commission Bill', HC Debate 14 June 1898, *Hansard* 59 268-269. The University of London constituency was created in 1867. John Lubbock was its second MP, 1880-1900.

Conclusion

Essentially, this study has had twin aims. Firstly, to identify and interpret some of the significant developments in the organisation of science in the 1830s, particularly those at the Royal Society, which have previously either escaped historiographical scrutiny altogether, or have been examined only superficially. Secondly, to demonstrate that many of these came about through the influence and at the direction of John William Lubbock, a figure largely ignored by historians. The catalyst for the research was the casual examination of Royal Society records in which Lubbock was observed to feature prominently and which suggested that a close examination of his role might improve the understanding of this period in the Society's history. While this focal issue generated the original research questions, examination of primary sources quickly revealed areas into which the study should be extended. What has emerged might be described as a collection of case studies connected by a central character: Lubbock, each of which sheds new light on aspects of a poorly understood period in the history of science. The pivotal position which Lubbock occupied in English science in the 1830s becomes evident from the totality of his involvement in its evolution during this period. Contrary to the accepted view, this was a period of significant development in the organisation of science, including the introduction of much innovative practice. The present study has highlighted the importance of the contribution to this of a neglected figure, John William Lubbock. It has also demonstrated the value of a methodological approach focussing on an individual where this can be shown to be appropriate.

There is of course a danger, inherent in this kind of investigation, that the interpretation is shaped by the research questions, not least, in the present study, by those concerning Lubbock's significance. However, the weight of evidence from primary sources establishes his importance in the scientific world of the 1830s beyond question. Historians

have overlooked Lubbock through a failure to examine such evidence, this in consequence, in part at least, of being unaware both of his precocious talents as a mathematician and of his position in Society. Understanding Lubbock's origins, as examined in the first chapter, has been the crucial first step to understanding how he came to assume such an influential position. In addition, the processes which brought Lubbock to astronomy and mathematics have been found to support ideas about the particular value which Whig Society placed upon science and also on the transition, in the early nineteenth century, from a scientific world dominated by natural history to one in which the exact sciences were increasingly prominent. This study has sought to avoid focussing too strongly on an event in its future – the revision of the Statutes of 1847 – since, it has been argued, this has been a weakness of earlier studies. It is appropriate at this point, however, to bring this event into final discussions since it provides a significant postscript to the story.

A strength of this study, it is believed, has been the use of primary sources of evidence. This will continue as overall conclusions are drawn and the significance of developments in the 1830s is assessed. In particular, evidence from the contemporary comments of two scientific figures of some importance will help to shape conclusions. Principally these are to be found in two lengthy magazine articles, published anonymously in the early 1840s but unmistakably the work of their respective authors. The first article, 'Science and Rank', published in the *Dublin Review* of November 1842, was from the pen of the unconventional mathematician, Augustus De Morgan (1806-1871), who had set out to examine 'the manner in which science comes in contact with rank'.¹ A major portion of his article focussed on the Royal Society and its governance.² The second publication, appearing just under a year after De Morgan's, was the work of William Robert Grove (1811-1896), later

¹ De Morgan, A., 'Science and Rank', *Dublin Review* 13 (1842), pp. 413-47; De Morgan, S.E., *Memoir of Augustus de Morgan* (London: Longmans, Green and Co., 1882), p. 407. This article is included in the list of De Morgan's contributions to the *Dublin Review*.

² De Morgan, 'Science and Rank', p. 415.

to have a key role in the Statute reforms of 1847. His 'Physical Science in England', in *Blackwood's Edinburgh Magazine* of October 1843, was a more wide-ranging attack on what he saw as the 'national neglect' by which 'the cause of science is injured, her progress retarded'.³ Grove, too, lamented the 'want of encouragement' from Government, but many of his harshest words were reserved for the Royal Society and its procedures.⁴

De Morgan, like Lubbock, had honed his exceptional mathematical skills at Trinity, Cambridge, under the tutelage of William Whewell, graduating two years after Lubbock, in 1827. From 1828 to 1831 De Morgan had been Professor of Mathematics at London University. He had been reappointed as the institution became University College in 1836 and would hold the post for a further thirty years. He never wished to become a Fellow of the Royal Society having been 'repelled', as a young man during Gilbert's presidency, by the haughtiness of some of the senior figures within it.⁵ Although he was pleased to recount how he had resisted all attempts to persuade him to accept nomination, he was, nevertheless, active within metropolitan science, always interested in the affairs of the Royal Society and a close acquaintance of many Fellows, including Lubbock.⁶ The ambitious Grove was a Fellow, (elected November 1840), but still a relatively junior one and not yet on the Council of the Royal Society at the time that he wrote his article. Of provincial origin, and desperate to be accepted within metropolitan science, it was Faraday's recognition of his talents in practical Chemistry which had led to Grove being appointed Professor of Experimental Philosophy at the London Institution in 1841.⁷ The views of these two very different men provide

³ Grove, W.R., 'Physical Science in England', *Blackwood's Edinburgh Magazine* 54 (1843), pp. 514-25.

⁴ *Ibid.*, p. 517.

⁵ De Morgan, A., *A Budget of Paradoxes* (London: Longmans Green and Co., 1872), p. 19.

⁶ De Morgan, S.E., *Memoir of Augustus de Morgan*, p. 172. De Morgan wrote numerous articles for the SDUK, many on mathematical topics; so many that 'On Probability', which Lubbock and Drinkwater wrote for the SDUK in 1830, was mistakenly printed with De Morgan's name on the cover. De Morgan contributed 33 articles to the SDUK's *Quarterly Journal of Education* (1831-1835) of which Lubbock was an assistant editor. Lubbock and De Morgan were also together on the Council of the Astronomical Society for several years from 1830.

⁷ Morus, I.W., 'Grove, Sir William Robert, (1811-1896)', *Oxford Dictionary of National Biography*, <https://doi.org/10.1093/ref:odnb/11685>

contrasting assessments of the state of science in general, and of the Royal Society in particular, in 1842/43.

'The Royal Society', stated Augustus De Morgan in his article, 'is the focus of aristocratic science and scientific aristocracy'.⁸ De Morgan, was fond of such witticisms and this particular remark finds its way into the work of both Marie Louise Gleason and Roy MacLeod, presented in evidence of the Society's poor image in the 1840s.⁹ However, De Morgan's article, taken as a whole, was broadly supportive of the Royal Society and those Fellows who 'supply the place of a government which cared nothing for the promotion of philosophy'.¹⁰ De Morgan reminded his readers of the electoral strife of November 1830 when the Royal Society sought 'the splendour to be derived from a royal president' and 'sixty fellows, or thereabouts, including in their number almost all of great scientific eminence, declared their intention of supporting Mr (Sir John) Herschel'. 'The result is well known: the influence of the court, and the free use of the King's name, obtained for the duke of Sussex a majority of *eight*'.¹¹ That De Morgan, never himself a Fellow, should be writing this, twelve years after the event, says much about the impact which this episode in the Royal Society's history had had on the wider scientific community. He continued:

All the probabilities were against its turning out well: nevertheless, speaking from the impressions which we observed to prevail, . . . we believe it impossible to deny, that there was never a period of ten years [*sic*] during which it was more respectable, or respected, than that in which the Duke was in the chair'.¹²

⁸ De Morgan, A., 'Science and Rank', p. 425.

⁹ Gleason, M.L., *The Royal Society of London: Years of Reform, 1827-1847* (New York: Garland, 1991), p. 214; MacLeod, R.M., 'Whigs and Savants: Reflections on the Reform Movement in the Royal Society, 1830-1848', in Inkster, I. and Morrell, J.B. (eds), *Metropolis and Province* (London: Routledge, 1983), p. 71.

¹⁰ De Morgan, A., 'Science and Rank', p. 426.

¹¹ *Ibid.*, pp. 435-36.

¹² *Ibid.*, p. 437. Sussex was President for *eight* years.

Amongst the qualities which had 'rendered him . . . well fitted for the office' – 'a man of literary tastes, good information, an excellent library' – De Morgan identified the Duke's 'disposition to ask advice . . . and to know where to look for it'. This study has shown that Sussex's presidency turned out 'well', against 'all the probabilities', because he put his trust in one man: John William Lubbock.

Lubbock saw the need to take immediate steps, within days of the Presidential election, to involve 'Declarationists' in discussions about reform measures and to improve Society procedures, not least those relating to finance. His status within science and within metropolitan society enabled him, in spite of his relative youth (he was, it will be remembered, just twenty-seven at the time), to carry the Society with him. The extent of support from men of science of all political persuasions for Lubbock's unsuccessful election campaign in 1832 provides compelling evidence for his ability to reconcile and unite. The investigation of this episode, in itself, represents an important new contribution to scholarship. During the 1830s Lubbock used the relatively permanent position of Treasurer to introduce extensive change in a manner not seen with his predecessors or successors in that role, or even during the 'interregnum' of reformer Baily. Under Lubbock's direction the Society devised a structure for branches of science, a reward system and an improved procedure for publications, including peer review. Lubbock can also be credited with vastly improving the Society's Library facilities. At the Anniversary Meeting of 1841 it was reported that the Library now contained over 20,000 bound volumes, many containing a number of separate works. To facilitate ease of location, these had now been organised according to the classed arrangement found in the catalogue which Lubbock had devised. 'In almost every department of science', it was stated, 'the Library contains all the most valuable works', 'especially' the report added, betraying Lubbock's influence, 'in the mathematical

sciences'.¹³ This study has extended previous work on the different aspects of the organisation of science by the Royal Society in the 1830s and has provided, through Lubbock, a connection which allows them to be seen as an organisational whole.

De Morgan's use of 'in the chair' was surely figurative. As the present study has shown, and as De Morgan was almost certainly aware, the man to be found literally in the chair during Sussex's presidency was usually not that royal figurehead, but Lubbock. Similarly, University of London Chancellor, Burlington, and Sussex's successor at the Royal Society, Northampton, relied totally on Lubbock to run their respective institutions in their frequent absence. At the time De Morgan's article was written in 1842, Sussex's successor, the Marquess of Northampton, who had been abroad on the Continent, had only just returned to the Society after an absence of almost one whole year.¹⁴ Lubbock was a constant presence ensuring efficiency of operation. In Lubbock's final year as Royal Society Treasurer (1845) one of the first entries in the journal of newly-appointed Assistant Librarian, Walter White, records: 'Have been very busy today preparing the magnetic observations for despatch to the Foreign Observatories, and hope Sir John Lubbock will have no reason to complain of slowness'.¹⁵

In November 1835 Lubbock had resigned in protest against the Duke of Sussex's continuing absenteeism. The Council, in spite of now being dominated by the reformers of 1830, did not offer support and would not accept the Duke's token offers to step down. The Council felt itself unwilling or unable to sever its association with Royalty. As De Morgan remarked in 1842, 'there still exists, among philosophers a strong portion of that respect for

¹³ *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive* (1843), pp. 334-35. (Council Report, November 1841).

¹⁴ *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive* (1843), pp. 317-84. Northampton was absent from June 1841 until May 1842.

¹⁵ White, W., *The Journal of Walter White* (London: Chapman and Hall, 1889), p. 64. Journal entry dated 20 March 1845.

rank which characterises the whole of our nation'.¹⁶ Charles Dodd's *A Manual of Dignities, Privilege and Precedence* published in the year following De Morgan's article (1843) shows the Regency obsession with rank to be just as strong in the early Victorian age, perhaps stronger as new professions had to be accommodated within the hierarchy. 'Precedence', Dodd stated, 'is part and parcel of the law of England'.¹⁷ Professors such as De Morgan at UCL and Grove at the London Institution found themselves, along with similar 'professional gentlemen', at number 152 (out of 153) in Dodd's 'General table of precedence' with the guidance that '... scientific professors, and others not involved in manual labour, farming of land or retail trade, are considered to possess some station in society, although the law takes no cognizance of their ranks'.¹⁸ Lubbock and the other 737 members of the order of baronets, however, together with the 'five ranks of the peerage and the sovereignty of the realm', possessed 'hereditary distinctions' which characterised the 'aristocratic spirit of British society'.¹⁹ Librarian White's journal would record how, in 1847, he had been angrily reprimanded by Sir James Clark for omitting his post-nomial 'Bart' from the new Council list, implying he was merely a 'dirty Knight'.²⁰

Despite Lubbock's eventual dissatisfaction with his royal President, he continued to favour this model of governance although arguing for *scientific* aristocrats to be appointed to lead scientific institutions. Even De Morgan, while deploring the manner in which men of science 'bow to mere title without reference to the qualifications of the bearer', nevertheless advised that 'if the Royal Society be wise it will continue to choose a President of rank, with as much science as can be got'.²¹ This the Society had done with Northampton, (a Marquess with a little Geology), and would continue to do with 'the astronomical lords', Rosse and

¹⁶ De Morgan, 'Science and Rank', p. 424.

¹⁷ Dodd, C.R., *A Manual of Dignities, Privilege and Precedence* (London: Whittaker, 1843), p. 19.

¹⁸ *Ibid.*, p. 60.

¹⁹ *Ibid.*, pp. 20-21.

²⁰ White, *The Journal of Walter White*, p. 87.

²¹ De Morgan, 'Science and Rank', pp. 437, 446.

Wrottesley (less aristocratic than Northampton, but more scientific), between 1848 and 1858.²² Rosse and Wrottesley, however, and for that matter Northampton, after Lubbock's departure in 1845, struggled to deal with Councils of strong-willed men without a dominant figure on whom to rely.

De Morgan pointed to the 'cordial agreement with the British Association' as 'one among many proofs of the existence of a comparatively healthy state in the Royal Society'.²³ Yet, in the Association's early years, this outcome was by no means certain. Lubbock's personal opposition to the new body in its initial stages, together with his work at the same time to make the Royal Society, in De Morgan's words, 'respectable' and 'respected' as the representative of the nation's science, ensured that the senior institution remained pre-eminent. 'The old society contains so large a proportion of the scientific knowledge of the country among its members', De Morgan believed, 'that there never was, nor could be, formed any other society at all deserving of respect . . . unless it had a tolerable contingent of members writing F.R.S. after their names'.²⁴ Jonathan Clarke warns against 'naïve counterfactualism' in considering 'paths that were not taken' but it is difficult to see how the Royal Society could have reached its present situation if Lubbock had not been appointed in 1830 and if, in consequence, the institution really had been deserted by its eminent Fellows and the British Association had arisen in a vacuum of scientific leadership.²⁵

²² Hall, M.B., *All Scientists Now* (Cambridge, Cambridge University Press, 1984), pp. 94-97.

²³ De Morgan, 'Science and Rank', p. 429.

²⁴ *Ibid.*

²⁵ Clark, J.C.D., *From Restoration to Reform: The British Isles 1660-1832* (London: Vintage, 2014), p. 293.

Grove's article is usually noted for its attack on the corruption of scientific societies which 'do harm by becoming the channels of selfish speculation, their honorary offices being used as stepping-stones to lucrative ones, . . . by the cliquerie they generate, collecting little knots of little men'.²⁶ It went much further, however, arguing for comprehensive reform of the institutions of science, the Royal Society in particular. It is not known where Grove, who was Oxford-educated and trained as a lawyer, acquired his interest in science.²⁷ He had come to prominence through demonstrating his battery at the Birmingham meeting of the British Association in 1839 and by publishing in the *Philosophical Magazine* in that same year.²⁸ He was fully aware, however, that his reputation would not be made until he had been elected FRS and had had his work accepted for publication in the *Philosophical Transactions of the Royal Society of London*. 'Having contributed one paper which was not published', Grove complained to Faraday in 1842, '& the reason of their rejection of which I cannot see, I do not wish this to happen a second time'.²⁹ In spite of telling Faraday that he intended now to publish only in periodicals, Grove persisted in his attempts to get his work into the *Phil. Trans.* and was finally successful in 1843.

Grove's rejected paper, 'On some Electro-Nitrogurets', had been read to the Society at a meeting on 4 February 1841; Lubbock had sat in the chair.³⁰ It may have been the memory of the occasion which caused Grove to complain in his magazine article that, once a paper has been read, 'the meeting is adjourned in solemn silence; no observation can be made upon it, no question asked, or explanation given'.³¹ Lubbock, although he had been active in improving the Society's publications machinery, had shown no inclination to

²⁶ Grove, 'Physical Science in England', p. 518.

²⁷ Morus, 'Grove, Sir William Robert'.

²⁸ Grove, W.R., 'On the Inaction of Amalgamated Zinc in Acidulated Water', *The London and Edinburgh Philosophical Magazine and Journal of Science* 15 (1839), pp. 81-84.

²⁹ Grove to Faraday, 19 December 1842, The Michael Faraday Collection

1454, <https://epsilon.ac.uk/view/faraday/letters/Faraday1454>

³⁰ Grove, W.R., 'On some Electro-Nitrogurets', *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive* (1843), p. 286.

³¹ Grove, 'Physical Science in England', p. 518.

introduce discussion of papers into its proceedings. 'The paper', Grove continued, seemingly with deep feeling, 'is next committed, it is not known to whom, reported on in private, and either published, or deposited in the *archives of the Society*, according to the judgement of the unknown irresponsible parties to whom it is committed'.³² Society records show that his work was discussed at the 'Committee of Papers' on 13 May 1841, a meeting chaired by Northampton and attended by Lubbock and nine others including chemist and inventor of batteries, John Frederic Daniell.³³ Grove's paper was 'postponed' until the next meeting (10 June 1841) at which point it was consigned to the 'archives', but it had, by this time, already benefitted from having appeared in abstract in the *Proceedings* (which Lubbock had introduced ten years previously), thus assuring recognition of priority for its author.³⁴

Contrary to the implication of Grove's comments, a formal system of peer review by a competent person, (as introduced by Lubbock and Whewell in 1831), was still in operation although the reading of reports at meetings had, of necessity due to time constraints, quickly been abandoned and those reporting now did so anonymously. The system, however, did favour the work of the eminent: Grove's first paper successfully to make its way into the *Phil. Trans.* ('On the Gas Voltaic Battery'), coincided with Faraday's 'Eighteenth Series' of 'Experimental Researches in Electricity' (of which there would eventually be thirty).³⁵ Lubbock himself had twenty-one papers approved for printing in the *Phil. Trans.* Having been elected to the Council in November 1845, Grove lost no time in getting himself appointed to

³² *Ibid.*

³³ Committee of Papers, 13 May 1841, Royal Society Archive CMB/90/3/132.

³⁴ Committee of Papers, 10 June 1841, Royal Society Archive CMB/90/3/133; Grove, W.R., 'On some Electro-Nitrogurets', *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive* (1843), p. 286.

³⁵ Faraday, M., 'Experimental researches in Electricity – Eighteenth Series', *Philosophical Transactions of the Royal Society of London* 133 (1843), pp. 17-32; Grove, W.R., 'On the Gas Voltaic Battery', *Philosophical Transactions of the Royal Society of London* 133 (1843), pp. 91-112.

the Committee of Papers and became one of those he had labelled as 'irresponsible' just two years previously.³⁶

Looking back to earlier times, pure mathematician De Morgan was scathing in his criticism of the presidency of Sir Joseph Banks with his 'contempt of the exact sciences . . . such as totally unfitted him to preside over the society which was to keep up the Newtonian discoveries in England'.³⁷ This he believed had 'led to the subsequent controversy about the *decline of science*'.³⁸ 'In 1830 we were not on a level with some of the continental kingdoms in the production of *theoretical discovery*' but it was his belief that 'though behind our neighbours we were on the road to overtake them'.³⁹ In 1832, as has been noted, Airy credited Lubbock with having restored the nation's 'scientific character' through his 'original investigation in the highest branches of mathematical philosophy'.⁴⁰ More than this, Lubbock had ensured that higher mathematics and astronomy should each be accorded the status of a 'Branch of Science' in the Society's first classification of scientific knowledge. Mathematics occupied a central position, too, in the University of London degree.

Grove, in marked contrast to De Morgan, did not share his view of the importance of theoretical discovery. He warned of the 'evils . . . from excess of intellectual cultivation; as is shown by the exclusive love of mathematics by a great number of philosophers'.⁴¹

Minds, which left to themselves might have eliminated the most valuable results, have, dazzled by the lustre cast by fashion upon abstract mathematical speculations, lost themselves in a mazy labyrinth of transcendentals . . . The fashion of mathematics has ruined many who might be most useful experimentalists.⁴²

³⁶ Committee of Papers, 11 December 1845, Royal Society Archive CMB/90/3/168.

³⁷ De Morgan, 'Science and Rank', p. 428.

³⁸ Ibid.

³⁹ Ibid., p. 434.

⁴⁰ Airy to Sedgwick, 28 November 1832, Royal Society Lubbock Collection A96.

⁴¹ Grove, 'Physical Science in England', p. 517.

⁴² Ibid.

He was particularly scornful of those mathematicians who ‘too frequently taking the means for the end, have embarrassed Natural Philosophy with a crowd of analytical labours’.⁴³ Perhaps Grove was thinking here of Whewell’s seemingly endless ‘Researches on the Tides’, of which thirteen series were published in the *Phil. Trans* and which, ultimately, failed to produce useful results.⁴⁴ He also singled out Whewell for criticism for his contribution to the ‘novel vocabularies’ of scientific nomenclature.⁴⁵ Whewell, who ‘seems particularly deficient in ear’ had condemned Grove and his colleagues to being called ‘*physicists*, where four sibilant consonants fizz like a squib’.⁴⁶ Lubbock could be imagined as the focus for Grove’s dissatisfaction with the Royal Society: the now middle-aged Baronet in the chair, presiding over the ‘solemn formalities’ of the meeting, contributing papers such as ‘On the Theorem of Fermat’.⁴⁷ The young moderniser who had transformed the institution, making it one which men like Grove would aspire to join, now seen as a reactionary member of the ‘old guard’. Lubbock, however, in the organisation of science as in his liberal Anglican politics, had never been radical, seeking to make the system more efficient, fairer and inclusive, but not to change it fundamentally. An engraving in the *Illustrated London News* published the month after the appearance of Grove’s article depicts a Society meeting at the time:

⁴³ Ibid.

⁴⁴ Snyder, L.J., *The Philosophical Breakfast Club* (New York: Broadway, 2011), p. 177.

⁴⁵ Grove, ‘Physical Science in England’, p. 524.

⁴⁶ Ibid., pp. 524-25.

⁴⁷ Grove, ‘Physical Science in England’, p. 518; Lubbock, J.W., ‘On the Theorem of Fermat’, *Abstracts of the Papers Communicated to the Royal Society of London from 1837 to 1843 inclusive* (1843), p. 590. Lubbock’s paper was read on 25 February 1841.

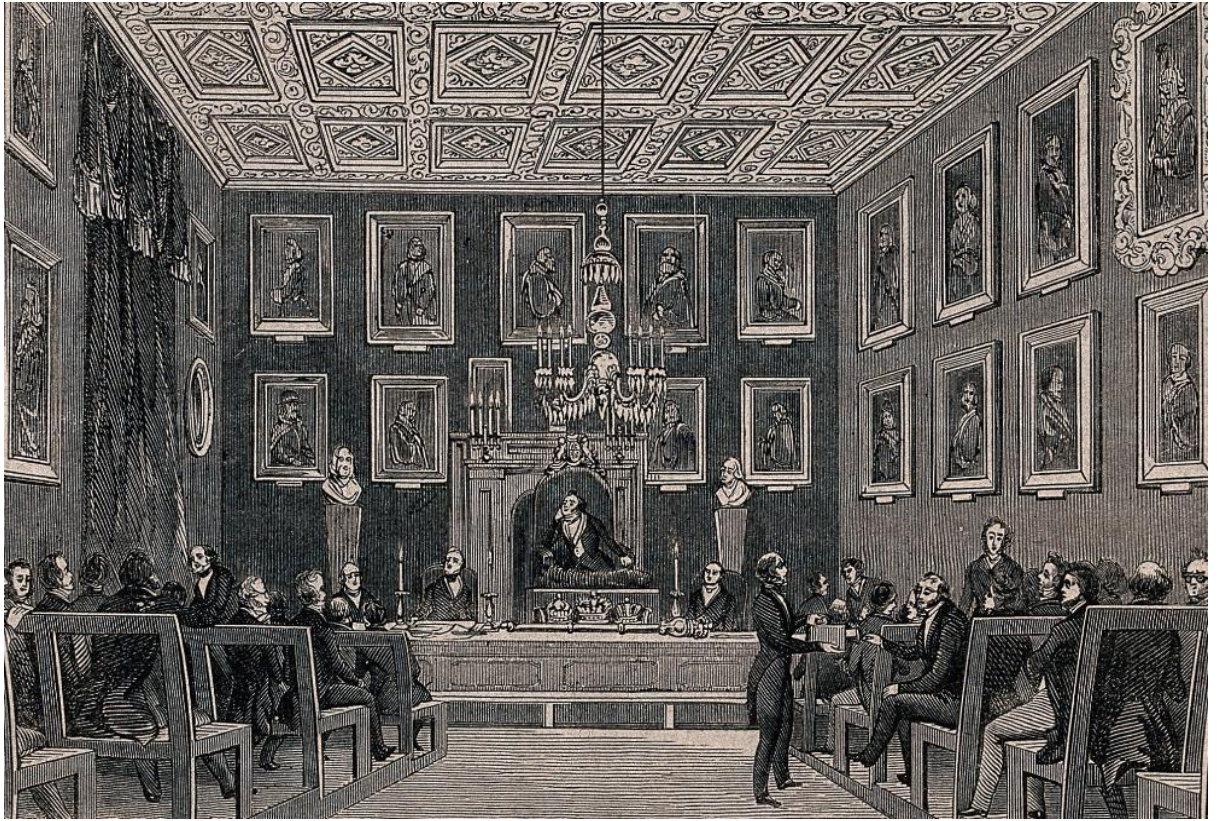


Figure 7.1 'A Meeting of the Royal Society at Somerset House'.

Illustrated London News 23 December 1843⁴⁸

Adrian Rice, in his survey of teaching styles and courses in university-level mathematics to be found in Victorian London, highlights the tuition provided at University College from 1837 by its Professor of Mathematics, De Morgan, who offered 'an extensive mathematical programme'.⁴⁹ It should be remembered, however, that this course, and that at King's which Rice also details, were designed to fulfil the requirements for the University

⁴⁸ **Gale Document Number**GALE|HN3100008433; *Abstracts of the Papers Communicated to the Royal Society of London from 1843 to 1850 inclusive* (London, 1850), p. 475. Wood engraving by Frederick William Fairholt. If the engraving, which shows a ballot for a new Fellow, depicts one particular meeting it is most probably that of 23 November 1843. With Lubbock in the chair, 'the Rev. David Laing was balloted for and duly elected a Fellow of the Society'.

⁴⁹ Rice, A., 'Mathematics in the Metropolis: A Survey of Victorian London', *Historia Mathematica* 23 (1996), pp. 379-80.

of London syllabuses which made it compulsory, at Lubbock's insistence in particular, that students should be able to demonstrate competence in higher mathematics.⁵⁰ Grove, perhaps displaying the snobbishness of an Oxford man, omitted the University of London from his discussion of the lack of science in university education. 'At one of our universities [Oxford]', Grove complained, 'physical science is utterly neglected; at the other [Cambridge], only certain branches of it are cultivated.'⁵¹ He continued:

But what part of the regular academic education does the study of natural philosophy occupy? It forms no necessary part of the examinations for degrees; no credit is attached to those who excel in its pursuit; no prizes, no fellowships, no university distinction, conferred upon its most successful votaries. On the contrary, physical, or at all events experimental, science is tabooed.⁵²

It is surprising that Grove seems to be unaware that Lubbock and his colleagues on the Senate of the University of London had ensured that natural philosophy was a compulsory element of *its* BA, now (in 1843) being awarded for the fourth year, and that an elementary knowledge was even required for matriculation. Indeed, Grove's mentor, Faraday, had been responsible for devising the Chemistry sections. High-achieving students could sit for honours in mathematics and natural philosophy and exhibitions were awarded to the outstanding candidates. It could not, however, be said that London required its students to be familiar to any degree with *experimental* science. The University had expanded the idea of a liberal education to include science, with profound implications for the future of education generally. In 1858, with the institution of science degrees, it would begin producing graduates who would come to be called 'scientists'. Donald Cardwell identified this point as 'approaching the dividing line between the old liberal education and the coming

⁵⁰ Ibid., p. 391.

⁵¹ Grove, 'Physical Science in England', p. 516.

⁵² Ibid.

specialised and professional one'.⁵³ Although he does not seem to have been aware of the extent of the science already required for a degree at London, his assessment is broadly correct: the syllabus for the new BSc of 1858 was based firmly on the liberal education devised for the old BA twenty years previously, keeping the science, moral philosophy and logic, but omitting the classics.⁵⁴

De Morgan made an important point in reminding his readers that the Royal Society was not a public body but 'an association of private persons' – 'all its funds are derived from private contributions . . . most of its officers are without salary'.⁵⁵ 'If we look at their balance sheet of long and useful service', he therefore concluded, 'in spite of the exhibitions of weakness . . . the Royal Society was entitled to the respect of the country'.⁵⁶ 'This society does not live merely by the labours of those who cultivate science', he stated, 'but also by the pecuniary contributions of those who do not, but are willing to help in its promotion, and to buy a title [FRS] which confers upon them at least the character of admirers and patrons of it'. MacLeod paraphrases this important and seemingly negative comment but does not note that De Morgan continued by expressing the opinion, surprising in view of his feelings about rank and wealth, that 'no better mode exists of procuring money for the laudable objects of any society; and, all things balanced, it may be a question whether aid from government would better secure the attainment of these objects, independently of miscellaneous support'.⁵⁷ Grove, too, could see no advantage in government involvement – 'politics are already too much mixed up with all government appointments in England'.⁵⁸ 'Their influence', he added, 'is at present scarcely felt in science, and we would not willingly

⁵³ Cardwell, D.S.L., *The Organisation of Science in England* (London: Heinemann, 1957), p. 94.

⁵⁴ *Ibid.* William Grove, now Mr Justice Grove, gave evidence to the University committee considering instituting a BSc arguing that it would be 'decidedly wrong' to allow specialisation in the degree.

⁵⁵ De Morgan, 'Science and Rank', p. 426.

⁵⁶ *Ibid.*, p. 427.

⁵⁷ *Ibid.*

⁵⁸ Grove, 'Physical Science in England', p. 518.

risk an introduction so fraught with danger'. It should be noted, in passing, that Grove's belief that the affairs of science were largely free from political influence in this period supports the findings of this study. Grove, however, could not see why government should not organise and endow an 'academy', 'without any permanent connection with it'. He set out his vision for such an academy, a reconstituted Royal Society, in the concluding comments of his article:

Provided science be kept from political excitement, we should like to see an English Academy, constituted of men having fair claims to scientific distinction, and not "deserving of that honour because they are attached to science" . . . The proposition is by no means new. On the contrary we believe a wish for some such change pretty generally exists. The more frequently the point is brought before the public, the more probable it is that steps will be taken by those who are qualified to move in such a matter.⁵⁹

Grove's biographer, Iwan Rhys Morus suggests that Grove saw the Royal Society at the head of a 'hierarchical structure' for the scientific community with himself 'at the apex of that hierarchy'.⁶⁰ His vision did not include a place for the gentleman enthusiast and, in December 1845, he became one who was 'qualified to move in such a matter' through being elected to the Council of the Royal Society. Given the severity of Grove's criticism of the Society in October 1843, it is something of a surprise to find his being recommended for election to its Council barely two years later. Lubbock was resigning as Treasurer, however, and, in any case, had less influence on the composition of the Council than he had had previously. The retiring Council making the recommendation included Thomas Graham, who had signed Grove's election certificate, and three men who would vote for reform the following year: William Sharpey, John Taylor and John Royle. These were 'new men' appointed to the Council for the first time as it became more inclusive from the end of the

⁵⁹ Grove, 'Physical Science in England', p. 525.

⁶⁰ Morus, I.R., 'Correlation and Control: William Grove and the Construction of a New Philosophy of Scientific Reform', *Studies in History and Philosophy of Science* 22 (1991), p. 591.

1830s. Grove found a kindred spirit in Geological Society President, Leonard Horner, an old 'new man' having been a fellow for over thirty years. Also, in George Rennie, the new Treasurer and Edward Sabine, the new Foreign Secretary, who were appointed at this same time.⁶¹

On the occasion of the Anniversary Meeting of 1 December 1845, Northampton began his address with the following announcement: 'Gentlemen, I deeply regret that I have to commence my address to you by lamenting, in common with the whole Society, that after many years of the most valuable services, Sir John Lubbock has resigned the situation of your Treasurer'.⁶² The reason, Northampton explained, was that he was 'now not generally resident in London'. 'I am quite sure', he continued, 'that I shall be no unfaithful interpreter of your feelings when I thus publicly express your thanks and regrets, as well as my own, and those of the Council'.⁶³ This single sentence represents the only formal acknowledgement of Lubbock's contribution to the Society over a period of fifteen years. He was, indeed, now often at his estate, High Elms, in the new mansion which had been built to replace an older house in 1842. He was, also, increasingly occupied by bank business as the economic crisis of 1846 loomed. However, it is noticeable, (since this was the next item in the President's address), that his departure coincided with the 'introduction of discussion of papers after they have been read'; a measure, argued for by Granville and, more-recently, by Grove, which, Northampton recognised, 'can hardly be expected to meet with universal concurrence'.⁶⁴ It was a sign of the times, as was the voting onto the Council, at this same meeting, of Grove and Horner.

⁶¹ Abstracts of Papers Communicated to the Royal Society of London from 1843 to 1850 inclusive (1850), p. 534.

⁶² Abstracts of Papers Communicated to the Royal Society of London from 1843 to 1850 inclusive (1850), p. 571.

⁶³ Ibid.

⁶⁴ Ibid.

Lubbock received the usual courtesy extended to retiring officers of being recommended for election to the Council in the following year (1845/46) and being appointed one of the Vice-Presidents. Although no longer attending meetings he therefore found himself, along with the other Vice-Presidents and Society Officers, being placed on the Charter Committee appointed by the Council on 7 May 1846 to 'consider and report' on the revision of the Charter.⁶⁵ At the next Council meeting (28 May), Grove was added to the Committee which was now asked to consider whether it would be 'expedient' to limit the number of new Fellows elected each year. There is no evidence that Lubbock played any part in the Committee's deliberations which led to its proposing a limit of fifteen new Fellows annually, on the recommendation of the Council; these proposals had been opposed by Northampton and Roget who had found themselves in the minority. Lubbock was present, however, on 5 November 1846 when the proposals were put to the Council. Horner, in a letter written the following day, described the scene:

This proposal has been most strenuously opposed by Lord Northampton; he did not come yesterday, but we met sixteen, only three others being absent. Sir John Lubbock proposed that the consideration of our report should be adjourned *sine die*, and was seconded by the Dean of Ely [George Peacock], and supported by Professor Willis, the two Secretaries (Roget and Christie), and Mr Galloway. Ten voted on our side, Rennie (in the chair), Colonel Sabine (Foreign Secretary), Smyth, Wheatstone, Daubeny, Grove, Royle, Sharpey, John Taylor, and myself . . . This is a great triumph and the commencement, I hope, of a better state of things in that Society.⁶⁶

But in what sense was it a 'great triumph', and for whom? Of the men voting in the measure, only Rennie and Horner had been amongst the 'Declarationists' of 1830, and Horner had only recently joined the Council for the first time. It would be incorrect, therefore, to portray this, as Gleason seems to suggest, as a victory for reformers who had been agitating constantly

⁶⁵ Lyons, H.G., *The Royal Society 1660-1940: A History of its Administration under its Charters* (Cambridge: Cambridge University Press, 1944), p. 260.

⁶⁶ Horner, L., *Memoir of Leonard Horner, FRS, FGS* vol.2 (London: Women's Printing Society, 1890), p. 107.

for reform but had been frustrated in their efforts.⁶⁷ A number of the formerly reform-minded did resurface when invited in 1847 to become members of the Royal Society Philosophical Club founded in celebration of the 'triumph', but many of these – Beaufort, Faraday, Herschel, Lyell, Murchison – had served on the Council in the 1830s.⁶⁸ Murchison, in particular, had occupied a prominent position on the Council without moving for constitutional changes. As this study has demonstrated with Lubbock, the influence of an individual within a small group such as the Royal Society Council can be considerable. Horner, with the assistance of Grove, was able to find sufficient 'other Fellows entertaining the views we do' to carry the day.⁶⁹ It cannot be insignificant that his success in bringing forward the proposed changes coincided with Lubbock's departure from the Council. This thesis concurs with Morus's observation in discussing this episode: 'A more detailed understanding of the early Victorian scientific community will be contingent upon an increased attention to the political manoeuvrings of particular actors who had their own individual ideological ends'.⁷⁰

Galloway, according to his friend De Morgan, 'inquired particularly into the reason why *fifteen*, of all numbers, was the one to be selected'.⁷¹ Fifteen had been chosen because Horner had calculated that, if this number were elected, assuming eight would compound and seven pay annually, the income from admission fees would be sufficient to ensure that the Society would not find itself in financial difficulty.⁷² Horner's figures were derived from Lubbock's projected financial situation which he had presented to Fellows five years previously.⁷³ Ironically, therefore, Lubbock had set the Society on the sound financial basis

⁶⁷ Gleason, *The Royal Society of London: Years of reform, 1827-1847*, p. 19.

⁶⁸ Lyons, *The Royal Society 1660-1940*, p. 264.

⁶⁹ Horner to Grove, 12 May 1846, Horner, *Memoir of Leonard Horner*, pp. 98-99.

⁷⁰ Morus, 'Correlation and Control', p. 621.

⁷¹ De Morgan, A., *A Budget of Paradoxes* (London: Longmans Green and Co., 1872), p. 38.

⁷² Horner, L., *Memoir of Leonard Horner*, pp. 98-99.

⁷³ Lyons, *The Royal Society 1660-1940*, p. 261.

needed before this reform could be considered, and had then produced the evidence showing it could be achieved. With defeat on this issue, Lubbock left Society affairs for good.

Fundamentally, Lubbock, Northampton and Roget, while wanting the Society to continue to attract the men most talented in scientific matters, did not want it to exclude those who were not – to remain a learned society rather than an academy. De Morgan, reflecting in later years on the consequences of the Council's decision made the following observations: 'The co-operative body got tired of getting funds from and lending name to persons who had little or no science, and wanted F.R.S. to be in every case a Fellow Really Scientific . . . The election is now a competitive examination: it is no longer – Are you able and willing to promote natural knowledge; it is - Are you one of the upper fifteen of those who make such claim'.⁷⁴ 'This plan', he added, 'appears to me to be directly against the spirit of their charter, the true intent of which is, that all who are fit should be allowed to promote natural knowledge in association'.⁷⁵ From 1848 the Society would not admit a man like Lubbock's father – 'a gentleman very conversant with various branches of science and zealous, on all occasions, in his endeavours to promote its interests' – or, it may be assumed, one who was simply 'a gentleman conversant with various branches of natural knowledge': Horner himself.⁷⁶ The Society's present and future members found themselves benefitting, with the limitation of numbers, from being members of an increasingly exclusive club. Gleason suggests that 'the statutes revision of 1846 paved the way for the ascendancy of scientific interests'.⁷⁷ This thesis contends however, that science had been well-served by the Society's administration since 1830 and that it could be argued that the reforms simply paved the way, not for the 'ascendancy of scientific interests', but for the ascendancy of the

⁷⁴ De Morgan, A., *A Budget of Paradoxes*, p. 21.

⁷⁵ *Ibid.*, p. 38.

⁷⁶ Sir John William Lubbock and Leonard Horner Election Certificates, Royal Society Archive EC/1821/32, EC/1813/09.

⁷⁷ Gleason, *The Royal Society of London: Years of reform, 1827-1847*, p..20.

interests of the eminently scientific. As Faraday had remarked to Grove when the Charter Committee was meeting: 'Where is the honour of being one of 800 men of science?'⁷⁸

Through the close examination of minute books and correspondence this study has revealed that it was Lubbock, assisted by a small number of colleagues, who directed the operations of the Royal Society and the University of London at what were critical times for these institutions. That Lubbock, with mathematical talents as great as any in this age, should, over a period of fifteen years, choose to act as the senior administrative figure for the Society and the University is not easy to explain. Certainly, he received scant thanks either from science or government. Notwithstanding Grove's criticisms, it cannot be said of Lubbock that the 'honorary offices' he occupied were used as 'stepping-stones to lucrative ones'.⁷⁹ Lubbock spent countless hours in Somerset House attending to the affairs of the Royal Society and University of London. Here, no doubt, he would regularly encounter fellow Royal Society Council members Francis Baily, George Greenough or Roderick Murchison similarly occupied with the business of the Astronomical or Geological Societies or that of the British Association.⁸⁰ They might also find themselves meeting at the Athenaeum Club of which all were founder members and of which Lubbock, Greenough and Murchison were 'Committeemen'.⁸¹ These men, together with a handful of others, connected in numerous ways socially and scientifically, were largely responsible for running science in England in the 1830s, and gave freely of their time in doing so.

⁷⁸ Faraday to Grove, 5 June 1846, The Michael Faraday Collection 1885, <https://epsilon.ac.uk/view/faraday/letters/Faraday1885>

⁷⁹ Grove, 'Physical Science in England', p. 518.

⁸⁰ *Monthly Notices of the Royal Astronomical Society* (London, 1821-1848); *Proceedings of the Geological Society of London* (London, 1834, 1839 and 1842); British Association for the Advancement of Science Council minutes: <https://www.wileydigitalarchives.com/baas>. Baily was President of the Royal Astronomical Society for four years in the 1830s and a Council member throughout this time. Greenough and Murchison were members of the Council of the Geological Society in every year of the 1830s, each serving as President in two years and Vice-President in three during the decade. In addition to serving regularly on the Royal Society Council, all three men were active members of the Council of the British Association in this period.

⁸¹ Waugh, F.G., *Members of the Athenaeum Club, 1824 to 1887* (London, 1887).

Lubbock, then, was a man for this particular time. Elected Treasurer and Vice-President of the Royal Society at a moment of crisis for the institution and with its future in doubt, Lubbock introduced measures which strengthened both its position of pre-eminence in British science and its place as one of the foremost scientific bodies in Europe. In a period of profound political and religious discord on questions of reform, he brought the University of London into being, making degrees accessible to non-Anglicans for the first time in England. Lubbock had the capability and willingness to accomplish these undertakings, qualities which, when taken together, mark him out as an exceptional figure. Lubbock's significance, however, extends beyond this since in the workings of the Royal Society as it emerged from the 1830s can be seen, very clearly, the outlines of the organisation of science which we find today. No less significant is that it is to the University of London's first examinations of the late 1830s that we can trace the origin of science, not just as a university subject in England, but as an essential component of school education. Lubbock, who was principally responsible for all of this, is deserving of a prominent position not just in the history of the Royal Society and of the University of London but in that of science and education more generally. He should be remembered for much more than simply balancing the Royal Society's books.

'A really scientific man', De Morgan stated in his article, 'ought not to throw away his head upon the details of management: his energies should be reserved for greater things'.⁸² That Lubbock managed to accomplish both for so long, as well as running a major bank, was noted in several of his obituaries, seeking to explain his death from heart disease in 1865 at the relatively early age of sixty-two. The *Proceedings of the Institution of Civil Engineers*, of which Lubbock became a member in 1839, expressed the view that:

⁸² De Morgan, 'Science and Rank', p. 437.

It cannot be affirmed that a man who dies in his sixty-third year has shortened his life by too wide a range of occupation; nevertheless, it may be feared that the double life which Sir John Lubbock led for some time produced that general debility under which he laboured for years before his death. At all events it may be said of him, as of many other men of energy, that had they tempered that energy, they would have lasted longer; but would they have been as useful?⁸³

Lubbock's memorial inscription in the church of St Mary, Downe (below) records for posterity, as no doubt he had wished, that he had a hereditary position in society, that he was accomplished in the superior sciences, and that he devoted many years of his life to the service of the Royal Society and the University of London. The Sir John William Lubbock Memorial Prize continues to be presented annually by the University of London to the outstanding student of Mathematics.

SACRED
TO THE MEMORY OF
SIR JOHN WILLIAM LUBBOCK
BARONET

DISTINGUISHED AS AN ASTRONOMER AND MATHEMATICIAN
HE WAS
FOR MANY YEARS TREASURER
AND VICE-PRESIDENT OF THE ROYAL SOCIETY,
AND THE
FIRST VICE-CHANCELLOR
OF THE UNIVERSITY OF LONDON

⁸³ *Minutes of the Proceedings of the Institution of Civil Engineers* 25 (1866), pp. 510-12.

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