“Huxley, Lubbock, and Half a Dozen Others”

Professionals and Gentlemen in the Formation of the X Club, 1851–1864

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ABSTRACT

Since Frank Turner’s classic studies of the mid 1970s, social historians of science have appealed to the X Club as a paradigmatic example of the professionalizing impetus in mid-Victorian science and to members of the club, especially John Tyndall and T. H. Huxley, as exemplars of the challenge posed by men of science to the cultural authority of the clergy. So strong is this interpretation that the significance of amateur Anglican members, such as the London banker John Lubbock, is neglected. This account of the formation of the X Club reexamines the relationship between professional science and gentlemanly culture, showing that participation in gentlemanly networks and alliances with gentlemanly amateurs were means by which the new professionals exercised cultural leadership. The later power of the X Club is widely acknowledged, but although some historians suspect conspiracy from the beginning, others interpret it as a group of friends that became powerful as the members became important. By demonstrating the extent of joint action before the formation of the club in 1864, this prehistory shows the “just friends” account of the club, which owes its authority to Huxley, to be good politics but bad history.

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THE YEAR WAS 1864. The meeting of the British Association for the Advancement of Science in October had been marked by theological controversy, with the circulation of a “declaration” that science and Scripture, rightly interpreted, were not in conflict. Association members had been asked to sign. Although Charles Darwin’s 1859 Origin of Species and T. H. Huxley’s 1863 Man’s Place in Nature were in the background of this issue, the immediate impetus came from the problems of biblical interpretation raised by the germanizing theology of the 1860 collection Essays and Reviews, which aimed to interpret the Bible like any other book, and Bishop J. W. Colenso of Natal’s 1862 Pentateuch, which used arithmetical analyses of population size, transport needs, and food supply to demonstrate that these first books of the Bible were unreliable. The scientific community was also riven by unseemly controversy between the Ethnological Society of London and a breakaway group, the Anthropological Society of London, with the latter defending slavery on the grounds of race theory and accusing the former of unscientific attachment to the theory of monogenesis. This controversy had surfaced at the British Association meeting when the anthropologists tried—and failed—to get “Anthropology” recognized by inclusion in the title of the Ethnology and Geography Section. Scientists were apparently divided on theological and political grounds.

In this polarized environment a small group of scientific friends, leading members of the Ethnological Society and defenders of the “essayists” and Bishop Colenso, met for dinner. There are suggestive hints of shared interests and large schemes in Thomas Hirst’s often-quoted account of the first meeting of what later became known as the X Club:

On Thursday evening Nov. 3, an event, probably of some importance, occurred at the St George’s Hotel, Albemarle Street. A new club was formed of eight members: viz: Tyndall, Hooker, Huxley, Busk, Frankland, Spencer, Lubbock and myself. Besides personal friendship, the bond that united us was devotion to science, pure and free, untrammeled by religious dogmas. Amongst ourselves there is perfect outspokenness, and no doubt opportunities will arise where concerted action on our part may be of service. The first meeting was very pleasant and “jolly.” . . . There is no knowing into what this club, which counts amongst its members some of the best workers of the day, may grow, and therefore I record its foundation. Huxley in his fun christened it the “Blastodermic Club” and it may possibly retain the name.

It was intended to invite two further members to join the new club. William Spottiswoode was added at the December meeting, but W. B. Carpenter and James Fergusson turned


them down, so the number remained at nine. A few months later the unrevealing name “X Club” was chosen. Hirst was correct in his guess that the club would become important. Its members were closely associated with the defense of evolutionary theory and the advocacy of scientific, naturalistic understandings of the world; they were representatives of expert professional science to the end of the century, becoming leading advisors to government and leading publicists for the benefits of science; they became influential in scientific politics, forming interlocking directorships on the councils of many scientific societies. James Moore describes the club as “the most powerful coterie in late-Victorian science.”

But in 1864 one more dining club would have seemed unremarkable to outsiders. Clubs for social, intellectual, and political purposes were a common feature of gentlemanly Victorian society. The Philosophical Club of the Royal Society, established by the 1847 reformers, openly acknowledged that its purpose was to maintain the scientific emphases of the reforms. Its dinner meetings were an informal scientific caucus, held monthly before regular meetings of the Royal Society. At the convivial extreme were the boisterous dinners of the Red Lions, which had originated in 1839 as a protest against the formal, expensive dinners of the British Association; the London “tribe” had its own monthly dinner meetings from 1844. Privately organized clubs were also common. Huxley joined radical intellectuals for dinner and discussion of a formal paper in M.P. Henry Fawcett’s Radical Club in 1865.

“No doubt opportunities will arise when concerted action on our part may be of service.” Hirst’s private record suggests that the purposes of the new club were not purely convivial.


Yet decades later, when some suspected the group of being a kind of scientific caucus and envied its power, Huxley disclaimed any purpose beyond sociability: “The club has never had any purpose except the purely personal object of bringing together a few friends who did not want to drift apart. It has happened that these cronies had [sic] developed into big-wigs of various kinds, and therefore the club has incidentally—I might say accidentally—had a good deal of influence in the scientific world.” According to Leonard Huxley’s Life of his father, the club originated from T. H. Huxley’s passing remonstrance to his friend J. D. Hooker in early 1864, “I wonder if we are ever to meet again in this world,” whereupon Hooker “gladly embraced” Huxley’s proposal to organize some kind of regular meeting. This account of its origins, emphasizing both Huxley’s initiative and the convivial purpose, has skewed interpretation of the X Club for a century. Although it stretches credulity to believe that, in 1864, Huxley founded a club with a purely personal object, and although Huxley had good reason in the 1870s and 1880s, when the club was envied and suspected of undue influence, to disavow any wider intentions, historians have been reluctant to ignore the testimony of such a key actor. Not only have the repeated assertions that there was no purpose beyond preventing friends from drifting apart often been taken at face value rather than treated as a deliberate evasion, but Huxley’s own role in the club has been exaggerated.

Both Vernon Jensen and Roy MacLeod, in their near-simultaneous 1970 articles on the X Club, were ambivalent about the “just friends” explanation of its founding. Here and in later publications Jensen emphasized friendship, as his titles and subtitles indicate: he focused on “interrelationships” within the club, described it as a “fraternity,” and suggested the importance of the wives by quoting Huxley’s description of Ellen Busk as “the most intimate and trusted friend I have.” But he hinted that there was more to the club than preventing old friends from drifting apart when he described its purpose as “to further the cause of science,” though he did not elaborate on this evocative phrase. MacLeod aptly described the club as an “Albemarle Street conspiracy” in emphasizing its later role as an “informal elite,” but he followed Huxley in interpreting its power as a consequence of the later importance of the individual members: “The Club had not begun with any formal purpose.” This judgment was qualified in a later article, where MacLeod and W. H. Brock linked the founding of the club to religious controversy when they described it as one of the “chief effects” of the 1864 “declaration” on science and belief.

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All more recent interpretations of the X Club have been indebted to Frank Turner’s seminal articles of the mid 1970s, which joined the social and intellectual history of science. The conflict between science and religion had a social dimension. Debates about the efficacy of prayer in the 1860s and 1870s were debates about cultural authority. Questions as to the relative effectiveness of prayer and scientific research were questions about cultural leadership: where should the nation turn when the Prince of Wales was dying or British agriculture being destroyed by cattle plague, to the Bench of Bishops or to the Royal Society? Then, in a more reductionist argument, Turner interpreted the “conflict between science and religion” as a conflict between professional science and gentlemanly culture, a “byproduct” of the professionalization of science. Those who sought recognition of scientific expertise, paid positions for men of science, and freedom from theological preconceptions within scientific argument opposed privileged religious institutions that often made science subservient to theological interests. The new professionalizers sought to marginalize amateur men of science, especially clergy, with dual allegiances. There are subtle tensions between Turner’s two analyses. The model profession for the professionalizers (among whom Turner lists all the members of the X Club) was not medicine or law, but the church. This suggests that more than professional recognition was at stake. They were not merely aiming to establish science as one profession among others; rather, they were challenging the profession that had the unique role of cultural leadership, educating the public mind, guiding public morals, and legitimating the social order.

James Moore and Adrian Desmond, drawing on Robert Young, have given a radical political edge to Turner’s sociology, arguing that professionalizing science was aligned with the economic and political interests of dissenting manufacturers and that when extending their expertise to human nature and human society the new men of science produced a naturalistic “theodicy” that legitimated the emerging industrial social order. Their...
evolutionary naturalism supported a meliorist vision of an improving, progressive, but nonrevolutionary society. The professionalizing scientists made alliances with others who shared their naturalistic creed and their political vision of orderly reform.

In writing more directly on the X Club, Moore, drawing on Turner, ascribed conscious, provocative social and intellectual purposes to the members. In the middle of controversy over Darwinism and Essays and Reviews, and faced by the “Declaration of the Students of the Natural Sciences,” the network around Huxley and Hooker feared that resurgent orthodoxy would “stifle dissent, impede research, and put paid to liberal reforms.” But the X Club was not merely a defensive alliance: “they plotted an aggressive campaign to reclaim nature from theology and to place scientists at the head of English culture.” Moore emphasizes the role of Darwin: the X Club members defended their friend from ignorant and abusive criticism, and they advocated his naturalistic theory because it legitimated their ambitions for cultural leadership.\footnote{Moore, “Deconstructing Darwinism” (cit. n. 4), pp. 375–376. See also Adrian Desmond and James Moore. Darwin (London: Michael Joseph, 1991), pp. 411, 431, 525; and, on the significance of Darwin’s Origin for scientific naturalism, Ruth Barton, “Evolution: The Whitworth Gun in Huxley’s War for the Liberation of Science from Theology,” in The Wider Domain of Evolutionary Thought, ed. David Oldroyd and Ian Langham (Dordrecht: Reidel, 1983), pp. 261–287.}

The mutual support of amateurs and professionals within the X Club is a problem for Turner’s professionalization interpretation of the conflict between science and religion. My analysis of the micropolitics of the Royal Society shows that, although the X Club members used their power to adapt the Society to the needs of professional researchers and to assert the independent authority of science, professionalizers did not edge out amateurs. Most notably, the X Club members supported their fellow member Spottiswoode, a wealthy amateur, over G. G. Stokes, an eminent but poor and devoutly Christian professional, for the presidency in 1878.\footnote{Barton, “ ‘Influential Set of Chaps’ ” (cit. n. 4). Reduced admission fees assisted Royal Society Fellows who were not independently wealthy; abolishing special membership categories for aristocrats asserted the independent authority of science.}

John Clark has offered an important reinterpretation of the scientific, social, and ideological position of Sir John Lubbock. Lubbock, who appears in recent history of science narratives representing professional science, appears in economic history representing the London banking elite and in political history as a public moralist and representative whig-liberal Member of Parliament. Clark overcomes these historiographical contradictions by placing professionalism and scientific naturalism “within a liberal, centre-right, ‘generalist,’ intellectual culture.” Socially, Clark locates Lubbock as a member of the intellectual aristocracy, with the responsibility of guiding public morality. Politically, he locates Lubbock as a “whig-liberal” seeking a reformed Established Church, promoting education as a means of achieving both individual moral regeneration and social stability, and opposing any readjustment of private property. Through these interpretations Lubbock emerges most consistently as a “public moralist.” He drew social and ethical conclusions about human behavior from his naturalistic, scientific studies of the social behavior of ants. Although not a professional scientist, he represented the “professional ideal,” advocating hard work, meritocracy, and a science of progress.\footnote{John Clark, “ ‘The Ants Were Duly Visited’: Making Sense of John Lubbock, Scientific Naturalism, and the Senses of Social Insects,” Brit. J. Hist. Sci., 1997, 30:151–176, on p. 151. For these interpretations Clark draws on J. P. Parry, Democracy and Religion: Gladstone and the Liberal Party, 1867–1875 (Cambridge: Cambridge Univ. Press, 1986); Stefan Collini, Public Moralists: Political Thought and Intellectual Life in Britain, 1850–1930 (Oxford: Clarendon, 1991); and Harold Perkin, The Rise of Professional Society: England since 1880 (London: Routledge, 1989).} These interpretations mesh easily with Turner’s
emphasis on cultural authority, and with Desmond and Moore’s identification of a meliorist social vision, but suggest a less exclusive interpretation of Turner’s professionalizing scientists.

My account here will focus on the prehistory of the X Club. Previous studies, my own included, have either ignored the prehistory or conflated prehistory and history, thereby hiding the extent of the future members’ joint action before 1864. The joint activities and the schemes projected before November 1864 are significant for what they suggest of the members’ intentions when, as Tyndall described it, “it was deemed advisable” to meet once a month. More generally, this account of the formation of the club allows reexamination of the relationship between professional science and gentlemanly culture. Participation in elite gentlemanly networks appears as a means by which the new professionals exercised cultural leadership, and scientific gentlemen emerge as useful allies within scientific societies, providing the respectable cover of traditional leadership for controversial policies.

The growth of the group can be divided into three phases: during a period of “self-advancement,” the future members struggled to find a place in the scientific community; once established, they began to be concerned with the state of science; and then, in the early 1860s, they associated science with issues of intellectual freedom and saw themselves as part of a great liberal party. The order of names in Hirst’s list is significant. John Tyndall, his friend and mentor for almost twenty years, came first because he was always first in Hirst’s mind. Next came J. D. Hooker, whom, Hirst noted twelve years later, at the one hundredth meeting of the club, “we regard as the founder.” Thomas Huxley, third, was the social center about whom the friendship network developed in London in the mid 1850s. The others are listed in the order in which they became part of the network. Although other friends and allies who did not become part of the club are included in the story here, it is difficult, without a long discussion of the networks of Victorian science, to avoid a teleological account of the X Club’s formation. To avoid confusion, I will describe the emerging group before 1864 as the “X network” and reserve the title “X Club” for the formal post-1864 group.

**DISADVANTAGED OUTSIDERS: MAKING FRIENDS AND MAKING CAREERS**

The members of the X Club were friends—but not just friends. Their friendships were based on shared life experiences, cemented by shared beliefs and values, and used for mutual support and advantage. The shared experiences of relative disadvantage in a scientific community of privileged, mostly Anglican, gentlemen and the shared rejection of Christian orthodoxies for naturalistic, science-based understandings of the universe were important in forming their early sense of identity as disadvantaged outsiders. Although some of the individual biographical stories are well known, it is in the parallels, and the disparities, that the nature of the club appears.


15 This previously unnoticed comment was made by Hirst at the 100th meeting of the club; see “Hirst Journal,” 8 Jan. 1876. Because the X Club was the center of Hirst’s social life for many years he is unlikely to have been wrong on this detail, quite apart from any corroborative evidence. From William Irvine to Adrian Desmond, historians skeptical enough to reject the “just friends” explanation have nevertheless given Huxley the founding role. See William Irvine, *Apes, Angels, and Victorians: A Joint Biography of Darwin and Huxley* (London: Weidenfeld & Nicolson, 1955), p. 235; and Desmond, *Huxley*, p. 327.
The X network developed in the mid 1850s in London from two earlier friendship trios: Tyndall, Hirst, and Edward Frankland, artisans who became physical scientists; and Huxley, George Busk, and Hooker, surgeons who became naturalists. From the mid 1850s members of these two groups met through the friendship of Huxley and Tyndall, supporting one another as they struggled to make their way, socially and professionally, in scientific London. Spencer, Lubbock, and Spottiswoode, although acquainted with individuals within the network, did not become part of the dining and holidaying circle until the early 1860s. Lubbock and Spottiswoode came from socially privileged Anglican backgrounds, and their participation in the network marked a new phase in the development of the club.

Tyndall, Hirst, and Frankland came to science through skilled trades and the mechanics' institute culture of the north of England. John Tyndall (1820–1893), an Irishman, had worked as a surveyor for the Irish and English Ordnance Surveys and suffered unemployment before he began making money as a surveyor in the railway boom of the mid 1840s. The fifteen-year-old Thomas Hirst (1830–1892) met Tyndall in 1845 when he joined the Halifax firm in which Tyndall was chief surveyor. (See Figure 1.) Tyndall was by then a serious young man, so committed to self-improvement through education that "duty" led him to attend a Mechanics' Institute lecture rather than a dance.16 Owenite pamphlets,

Thomas Carlyle, self-help literature, and much political and theological debate had convinced him that social progress was dependent on individual progress. Hirst became part of the circle of young men to whom Tyndall acted as mentor and was introduced to the serious pursuit of knowledge and to Carlylean ideals of work, duty, and self-examination. Under the passionate rhetoric of Carlyle both Tyndall and Hirst gave up the forms and dogma of Christian tradition and turned to Romantic emotional and pantheistic redefinitions of religion.  

In 1847, as the railway boom declined, Tyndall took a first step from his early engineering ambitions toward science. He became mathematics master at Queenwood College in Hampshire; there he met Edward Frankland, the new chemistry teacher. Although five years younger, Frankland (1825–1899) had a more thorough grounding in science than Tyndall. In 1845, after completing his apprenticeship to a druggist in Lancaster, he had worked with Lyon Playfair at the Museum of Practical Geology in London and at the Civil Engineering College at Putney. He had just returned from three months studying chemistry at the University of Marburg. Frankland’s devout evangelical Christian belief had been unshaken by conversations in Marburg, but after a few months of debate with Tyndall previously abhorrent opinions began “to make inroads upon him.” In science, Frankland’s connections gave hope of fulfillment to Tyndall’s dreams. In the winter of 1847 they began rising at 4 A.M. to study. Frankland taught chemical analysis to Tyndall, and Tyndall taught Euclid and algebra to Frankland. In October 1848 they both left Queenwood for the University of Marburg.

Germany appealed to Tyndall not only for its science but for its philosophy. It was a country where learning was valued and the search for truth taken seriously. Following Carlyle, Tyndall accepted work as a sacred discipline by which man was to be perfected, but, rejecting Carlyle’s critique of science, he believed that science was his particular duty. Science was not merely about discovering natural laws but would lead to an understanding of the meaning of the whole. Frankland, although he had given up Christian orthodoxy, did not follow Tyndall into Romantic and idealist visions of the world. He studied Kant and chemistry, gained his Ph.D. in June 1849, and visited Justus von Liebig at Giessen before returning to England early in 1850 to take up Playfair’s chair of chemistry at Putney. Tyndall spent two years studying science and German philosophy; then, his “pilgrimage” at an end, his savings well spent, he returned to England in June 1850 with a Marburg Ph.D. in physics, hoping for employment. He found little. Nothing came of his attendance


18 For biographical information on Frankland see Frankland, Sketches from the Life of Frankland, ed. West and Colenso (cit. n. 6); and Russell, Edward Frankland (cit. n. 6). The report of “inroads” is Tyndall’s description; see “Tyndall Journal,” 12 Dec. 1845. For Frankland’s account see Frankland, Sketches from the Life of Frankland, ed. West and Colenso, pp. 40, 47, 50; and Russell, Edward Frankland, pp. 54-55, 185, 335-338. On the early morning studies see Frankland, Sketches from the Life of Frankland, ed. West and Colenso, p. 65; and “Tyndall Journal,” 3 Dec., 7 Dec., 10 Dec. 1847.  

19 Tyndall explained his goals in a farewell lecture to his Queenwood students; see “Tyndall Journal,” 25 Sept. 1848. On the significance of Carlyle and German idealist philosophy for Tyndall see Frank M. Turner, “Victorian Scientific Naturalism and Thomas Carlyle,” Victorian Studies, 1975, 18:325-343, rev. in Contesting Cultural Authority (cit. n. 4), Ch. 5; and Barton, “John Tyndall, Pantheist” (cit. n. 17), pp. 124-128.
at the British Association meeting in Edinburgh, but William Francis offered him translation work for the Philosophical Magazine and Hirst offered him a loan, so Tyndall returned to Marburg to continue his research while doing translations for Francis at £2 for sixteen pages and writing for popular magazines. This time Hirst traveled with him, for Hirst, who had visited Tyndall and Frankland in Marburg, had decided to follow the same route to a career in science.

Careers were not easily made. In April 1851 Tyndall returned to his old position at Queenwood. Frankland, more fortunate, moved to the chair of chemistry at Owens College in Manchester early in 1851, although he soon became disillusioned with the limited interest in science shown by Manchester men. Hirst completed his Ph.D. in March 1852 and, having a comfortable inheritance, was able to support himself for a further year of travel and research in Germany. Back in Britain, Tyndall, seeking contacts and recognition in the scientific community, again attended the annual meeting of the peripatetic British Association for the Advancement of Science. At the 1851 Ipswich meeting he may have met Huxley and Hooker, both also recently returned to Britain.

Hooker, Huxley, and Busk had all entered science through medicine and association with the navy—but at different social levels: Busk was the son of an English merchant at St. Petersburg and Hooker a Glasgow graduate, while Huxley had served an apprenticeship in the East End of London. As their navy and medical service ended in the early 1850s they sought stimulation and opportunity in the London scientific community. Instead, they were frustrated and disappointed by the dilettantish state of natural history and, for Huxley especially, the difficulty of finding paying positions in science. They found in each other a “philosophical,” systematic concern with natural history that contrasted with the undirected enthusiasm and leisurely style of the collectors of specimens who dominated natural history institutions.

T. H. Huxley (1825–1895), assistant surgeon in the Royal Navy, had returned to London from the Rattlesnake voyage at the end of 1850. His credentials had been established through letters and articles sent back from distant parts of the empire and formally read or published in his absence. Now he hoped that the navy would support him on half pay while he wrote up his collections for publication. He was welcomed by Sir Roderick Murchison and Sir Charles Lyell, leading gentlemen of the Geological Society, and within six months had been elected a Fellow of the Royal Society. But as Huxley bitterly described it to Henrietta Heathorn, his fiancée, even “great distinction and reputation” did not bring a salaried scientific position. He wanted employment urgently because he had left Henrietta

21 Huxley and Hooker were both at this meeting, but the often-repeated claim that all three became friends at Ipswich is based on an 1895 letter from Hooker to Louisa Tyndall saying that he first met Tyndall at the 1851 Ipswich BAAS meeting and that he, Huxley, and Tyndall first formed a “trio” at Ipswich: J. D. Hooker to Louisa Tyndall, 1895, Huxley Papers, College Archives, Imperial College of Science, Technology, and Medicine, London, 1,250. Contemporary evidence does not support this. See, e.g., Huxley to Henrietta Heathorn (his fiancée), 12 July 1851, Huxley Papers, Huxley-Heathorn Correspondence, fol. 156–157; and John Tyndall to T. A. Hirst, 15/20 July 1851, Tyndall Papers, 31/B10.53. The tone of Tyndall’s later references to Huxley and Hooker suggests that his friendship with Huxley developed in 1852 and that with Hooker in 1854–1855. They may have met at Ipswich, but they certainly did not become friends there. On the fortunes of Tyndall, Frankland, and Hirst in 1851 and 1852 see “Tyndall Journal,” Apr. 1850; Frankland, Sketches from the Life of Frankland, ed. West and Colenso (cit. n. 6), pp. 118, 134; and Brock and MacLeod, “Introduction: Life of Hirst” (cit. n. 16), pp. 10–11.
behind in Sydney, he feared being called back to navy service as his leave on half pay was given for only six months at a time, and he had outstanding debts from his student days.23

Huxley, like Tyndall, was attending the Ipswich meeting of the British Association “not by any means to advance science, but to be ‘advanced’ myself.” At Ipswich Huxley met Hooker. J. D. Hooker (1817–1903) had spent four years in Antarctic waters (1839–1843) and had returned to London only a few months previously after three years in the Himalayas. Hooker, Huxley enviously noted, could look forward to his marriage in a few weeks’ time. He had secure prospects because he was expected to succeed his father, Sir William Hooker, as director of Kew Gardens, but this was only one of the many benefits of his birth. In 1851 he had been granted three years on navy half pay, which Hooker senior was offering to supplement. This became unnecessary because the Department of Woods and Forests, which had funded the Indian trip, responded to representations from the Royal Society, the British Museum, and the Geological Society and granted him £400 per annum, also for three years.24

From Huxley’s point of view Hooker was privileged; nevertheless, they gradually found much in common. As Huxley later described it, they were both “well salted” early in life. They shared secularist and anticlerical views, though Hooker was careful in his public pronouncements to avoid causing hurt to his evangelical relations. Although there is no sign in Hooker of the pathological combativeness that Adrian Desmond has shown to have been characteristic of Huxley, they perceived each other as having similar temperaments, described as “constructed on the high pressure tubular boiler principle” or “berserks like you and me.”25

In spite of differences in age, social background, and personality, George Busk (1807–1886), surgeon on the seamen’s hospital ship Dreadnought, moored at Greenwich, was one of Huxley’s closest friends in his early years in London. In 1856 he retired from medicine to “devote himself to scientific pursuits,” but already in 1851 he was editor of the Microscopical Journal and ex-president of the Microscopical Society. He was a retiring man, lacking self-confidence, and had been elected to the Royal Society only a year before Huxley. Busk and his wife Ellen were soon Huxley’s most intimate friends. Ellen Busk was Huxley’s confidante. He found a sympathetic ear when he dared to tell her both of his distant fiancée and of his religious skepticism. They also shared a marginal social position: some of the gentlemen of science and their wives regarded Ellen Busk as socially inferior.26 Busk and Huxley worked together, hoping to make £180 from their translation

23 Desmond, Huxley, p. 161. Desmond describes Huxley’s lowly origins, ambitions, and financial struggles on his return to London in Ch. 9. I have relied heavily on this new biography, with its revealing interlinking of Huxley’s personal, polemical, and professional life.


26 On Busk’s underestimation of himself see Huxley to Hooker, [May 1855], after Busk’s election to the
of Albert von Kolliker’s anatomy text. Huxley benefited from Busk’s experience and maturity, Busk from Huxley’s enthusiasm and self-confidence. They shared the consequences of social and religious marginality.

Huxley and Tyndall became acquainted toward the end of 1851. They exchanged formal “My dear Sir” letters at the end of 1851, when Huxley signed Tyndall’s F.R.S. nomination certificate; and they were both considered for chairs, in natural history and physics, respectively, at Toronto. Both lost out to candidates with more powerful patrons. Polite mutual encouragement grew into friendship as they shared triumphs, hopes, and failures, supported one another in new and intimidating social experiences, and discovered deeper agreements. Huxley accompanied Tyndall and introduced him at his first Royal Society meeting after his election. In February 1853, asked for advice on positions at the London and the Royal Institutions, Huxley—who was surviving on his half pay, journalism, translations, and by cataloguing the sea squirts for the British Museum—advised Tyndall to aim high: “The other night your name was mentioned at the Philosophical Club (the most influential scientific body in London) with great praise.” Tyndall should be “looking to Faraday’s place” at the Royal Institution.27

Within six months Tyndall obtained a position in science equal to Huxley’s ambitions, becoming professor of natural philosophy under Michael Faraday at the Royal Institution. A year later, in mid 1854, Huxley himself at last obtained a paying position in science—temporary lecturer in natural history at the School of Mines. This appointment was soon made permanent, and other positions were added: he became paleontology lecturer at the School of Mines and naturalist to the Geological Survey and was awarded a three-year term as Fullerian Professor at the Royal Institution from July 1855. One position alone did not yield a living wage, for the salaries attached to paid positions in science were essentially honorariums for gentlemen assumed to be of independent means. Both Huxley and Tyndall took on extra lectures at the London Institution and examining for the Royal Military Academy. Examining, journalism, translation, and supplementary lectureships were important in stabilizing incomes and enabling both men to survive financially both before and after they attained their permanent positions.28

Herbert Spencer introduced Huxley and Tyndall to London’s avant-garde literary circles. Spencer (1820–1903), a railway engineer and failed inventor turned journalist, subeditor of the Economist, a man with a grand and speculative vision of a developing universe, was on the fringes of the scientific community when he approached Huxley with a request

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27 Huxley to Tyndall, 25 Feb. 1853, Huxley Papers, 8.9. For the formal letters see Tyndall to Huxley, 2 Dec. 1851, Huxley Papers, 8.4; and Huxley to Tyndall, 4 Dec. [1851], in Leonard Huxley, Life of T. H. Huxley, Vol. 1, p. 79. Huxley’s introduction of Tyndall at the Royal Society is reported in “Tyndall Journal,” 17 June 1852; Tyndall later did the same for Frankland: ibid., 6 July 1853.

for information about sea squirts in 1852. Through Spencer, Huxley met Marian Evans (later famous as the novelist George Eliot), G. H. Lewes, and John Chapman, and by 1853 he was earning welcome supplements to his income through contributions to Chapman’s radical Westminster Review. Huxley began to introduce Spencer to selected scientific friends. Spencer was a “kerl der Speculirt,” said Huxley, introducing him to Tyndall in 1853. Huxley was aware that Tyndall also appreciated unorthodox speculation. Perhaps he too could collaborate in radical challenges to established institutions and beliefs. After consulting Chapman, Huxley asked Tyndall to contribute the physics and chemistry reviews to his quarterly scientific columns in the Westminster.  

Intimacy developed slowly. The network in the mid 1850s was growing both through such personal introductions and because all the members moved within the London scientific community. Tyndall recorded many meetings at lectures, dinners, and meetings of scientific societies in his journal. He heard Huxley “bewildering” the company with “his astonishing metaphysics” at a reception after a Royal Institution lecture in 1853. He sat next to Hooker at the Royal Society anniversary dinner in 1854 and liked his “evident sincerity.” He talked to “Mr H Spencer” after a Royal Society meeting—“a good mind I believe.”  

After listening to Huxley lecture at the London Institution he noted, “he is an able fellow and has a clear appreciation of very high things.”  

The tone was friendly but not intimate.  

Closer friendships developed after Huxley’s long-deferred marriage in July 1855. Nettie Huxley remembered “Brother John” (Tyndall) as one of their earliest intimate friends. (See Figure 2.) Tyndall’s journal records frequent visits to the Huxley household and his growing friendships with both the naturalists and the Geological Survey men with whom Huxley mixed. “Dined with Huxley and made the acquaintance of his excellent wife. Hooker and Smyth present.” A few months later: “dined with the Busks.” Two weeks later, when Tyndall dined with the Hookers at Kew, the Huxleys were also there. Once again Tyndall was drawn to Hooker: “The more I see of Hooker the more I like him. He is able and earnest: A truthful sincere soul.” Over the next five years Tyndall, Hooker, Busk, and Huxley became close friends, and Frankland and Hirst were added to the group. Spencer and Lubbock did not enter the social network until the early 1860s.  

John Lubbock (1834–1913) became associated with the naturalists after meeting Huxley and Hooker at a scientific weekend at Down House in 1856. Son of Sir John Lubbock, a banker who had served fifteen years as treasurer of the Royal Society, and neighbor of Darwin at Downe, the twenty-two-year-old Lubbock already had powerful scientific and social patronage. At young Lubbock’s request, Sir Charles Lyell had nominated him for Geological Society membership the previous year. He joined Hooker and Huxley for the spring weekend at Down House in 1856, when Darwin was hoping to swing the uniformitarian Huxley from his antiprogressionist stance on the fossil record. Both Huxley and Hooker were impressed with his potential. They believed Lubbock was capable of working “philosophically,” that is, that he was interested in generalizations and laws rather than
mere collection and description. Huxley was soon writing to him with research advice. Two years later Huxley offered to take charge of Lubbock’s certificate for election to the Royal Society. With his scientific promise, social standing, and liberal commitments, Lubbock would be a useful ally; but in the late 1850s he did not need Huxley’s help. He was at home in elite gentlemanly networks, attending dances at the Lyells’ and exchanging papers with Richard Owen. Owen was already looking after his Royal Society nomination certificate.

The X network grew as Tyndall’s old and new friends met. Frankland met up with Hooker, Huxley, and Tyndall, holidaying together in Switzerland, in the summer of 1856. When he obtained a position at St. Bartholomew’s Hospital and returned to live in London in October 1857 he rapidly became part of the social circle and before long was making arrangements to visit Kew and introduce his wife to Mrs. Hooker. Frankland’s sense of social marginality was even greater than his friends’. His shameful secret was that he was illegitimate. But secrets were few, and through the late 1850s the friendships between members of the X network became closer. The joys and tragedies of family life were shared. Frankland and Tyndall visited the new Huxley baby in 1858.


took Huxley climbing in Wales in December 1860 after the death of his three-year-old son.\(^34\)

Although the Swiss Alps and the University of Marburg were important in the life of the growing network, London was its center; such a group could not have formed except in the metropolis. Once their early struggles were over, members of the network wanted to stay in London. The establishment traditions of Oxford and Cambridge, where religious tests for fellowships and higher degrees were not abolished until 1871, and the distance and pious reputation of Edinburgh made these institutions unattractive; anywhere else outside London was intellectually isolated. Hooker, applying for the botany chair at Edinburgh in 1845, intended to reside there for only half the year if he was successful. When patrons advised Huxley to apply for the well-paid Edinburgh chair of natural history in 1854 he told his friends, “I dread leaving London and its freedom . . . for Edinburgh and ‘no whistling’ on Sundays.” Frankland left a chair at Owens College, Manchester, for a hospital lectureship in London. London had the specialist scientific societies, the great museums, and a diverse intellectual life. Tyndall, reflecting on his freethinking and socially recognized friends the Pollocks, emphasized the freedom that came from this diversity: “After all there are great advantages attached to a residence in London: you can pick from the mass the spirits which harmonise with your own, and thus surround yourself with social influences of the highest order.”\(^35\)

In mid 1859, when Hirst returned to England to seek employment, he found the social nucleus of what would become the X Club. Hirst had succeeded Tyndall at Queenwood College in 1853 but resigned in 1856 to take his consumptive wife to the south of France. After her death in 1857 Hirst remained for a time on the Continent and pursued his mathematical research. His detailed and introspective journal records the social network of the nascent X Club he found on his return. Within weeks of his arrival in London Tyndall had taken Hirst to visit Frankland and Hooker and to dine with the Huxleys. In October, at another dinner with the Huxleys, he met Busk for the first time. A few weeks later he dined at the Franklands’ in company with the Hookers, Huxleys, and Williamsons. Tyndall and Hirst regularly walked to Kew on Sundays. By the end of 1859 Hirst was part of a social circle that included Hooker, Huxley, Busk, Tyndall, and Frankland. The wives were important in cementing close relationships in the growing network. To the lonely Hirst, his friends’ wives provided sympathetic female company. In his initial judgment, Mrs. Busk suffered by comparison with Mrs. Huxley: “Compared with Mrs Huxley however her mind is not of so high an order, and she has not Mrs Huxley’s depth and warmth she is more purely intellectual and material.”\(^36\)

Spencer was on the fringe of this social group. In 1853 he had resigned his position at the Economist in order to develop his own economic and cosmic theories more fully. In


\(^{35}\) Leonard Huxley, Life of Hooker, Vol. 1, p. 200; Desmond, Huxley, p. 206; and “Tyndall Journal,” 2 May 1857. However, Tyndall was tempted by offers from Edinburgh in 1859 and Oxford in 1865; see “Hirst Journal,” 13 Nov. 1859, 8 Nov. 1865.

\(^{36}\) “Hirst Journal,” 15 July, 21 July, 14 Oct., 31 Oct., 4 Dec. 1859 (quotation). Alexander Williamson, a positivist who was professor of chemistry at University College, is mentioned frequently in the same company in Hirst’s journal. In the early 1860s the Williamsons and Franklands introduced Hirst to the Carpenters.
the late 1850s he took Sunday walks with Tyndall and with Huxley, but he was known to other members of the network more by reputation than in person. Busk, Frankland, and Hooker were willing to be publicly associated with Spencer’s grand naturalistic philosophy of the universe when they joined Huxley, Tyndall, and other liberals and radicals such as Carpenter, Darwin, Lyell, Chapman, Lewes, and “George Eliot, Esq.,” in subscribing to his projected “System of Philosophy” in 1860.37

Religious unorthodoxy bound them together against an Anglican establishment and also isolated them from many devout dissenters. Huxley, Tyndall, and Frankland were constrained by ungentlemanly financial circumstances. Mutual career support continued to be important. Tyndall reported with self-satisfaction to Hirst that he had successfully proposed Frankland for a Royal Medal in 1857. Frankland and Huxley conducted a vindictive campaign on the Royal Society Council in 1859 to prevent James Forbes from receiving the Copley Medal and, hence, the legitimation of his theory of glacier motion against Tyndall’s contrary theory.38 But as their professional positions became established, the members of the X network began to have higher ambitions for the advancement of science and for their own social advancement.

ADVANCING SCIENCE: PROFESSIONAL SCIENCE, GENTLEMANLY SOCIETY, AND THE PUBLIC

By the mid 1850s these ambitious researchers at last began to be established in secure positions. Tyndall was thirty-three when he went to the Royal Institution in 1853 and Huxley twenty-nine when he obtained his first position at the School of Mines. Busk, who had retired from medical practice in 1856 at forty-eight, did not need a paid position but was appointed to Richard Owen’s place as Hunterian Professor of Comparative Anatomy at the Royal College of Surgeons. Hooker’s long-term future had always been secure, but he was already thirty-eight when he finally obtained a formal position as assistant director to his father at Kew in 1855. Hooker initiated many early schemes for reforming natural history and then natural science more generally. For the next decade, while protesting overwork and preoccupation with Kew, he was constantly scheming, lobbying, and proposing projects to his friends: to redirect the teaching of the biological sciences, to turn the Linnean Society into an institution that supported serious research, to get his scientific friends into the gentlemanly Athenaeum Club, to protect the research value of metropolitan natural history collections from Richard Owen’s proposed reorganization of museum natural history, and to start a popular scientific journal. These campaigns reveal Hooker as an effective networker and skillful strategist. (See Figure 3.)

Hooker intended to take advantage of Darwin’s invitation to Down House in April 1856 to talk over projects of his own with Huxley: “I am very glad that we shall meet at Darwin’s. I wish that we could there discuss some plan that would bring about more unity in our efforts to advance Science. As I get more and more engrossed at Kew I feel the want of association with my brother Naturalists,—especially of such men as yourself,

37 For a list of subscribers see Spencer, Autobiography, Vol. 2, p. 484.
Busk, Henfrey, Carpenter and Darwin.”39 Hooker had two immediate goals. He wanted to improve the teaching of natural history, and he wanted a specialized society for naturalists.

Hooker suggested to Huxley that reforms to the syllabus for natural history could be effected through the examination system. If suitable textbooks were available, he reasoned, “we have sufficient command over the public, as examiners in London, and as confidential advisers of examiners and professors elsewhere, to ensure the cordial reception of such a system.” John Stevens Henslow had produced good material on botany; Huxley, suggested

Hooker, should “occupy the field” in zoology. In 1856 Hooker, Huxley, and Busk between them held examining positions for the army, the navy, the Indian army, the Apothecaries Company, and the University of London. Hooker examined candidates for the botany medal of the Apothecaries Company from 1855. For twelve years, from 1854, he examined assistant surgeons for entry into the Indian army. In 1856 Huxley became examiner in physiology and comparative anatomy for the University of London. Busk was an examiner in physiology and anatomy for the Naval, Indian, and Army Medical Services for twenty-five years. In 1860 Busk, Hooker, and Huxley, together with their close friend W. B. Carpenter, were examiners for the first B.Sc. degree at the University of London.

Although Huxley did not write the zoology text, Hooker reported with satisfaction in 1869 that the examination system that he and Busk had been instrumental in introducing for medical officers of the Indian army had produced “extensive and important reforms in the Medical Schools” and had been so successful that it was extended to the British army and the British navy.

Hooker was dissatisfied with the provision for natural history in London scientific societies. The Royal Society served the physical scientists well; but the Linnean Society was near-moribund, and natural history was fragmented among the Geological, Zoological, Microscopical, and Entomological Societies. Hooker had collaborated in schemes for reforming the Linnean Society under a new president in 1853, but change had been frustratingly slow and constantly opposed. Hooker’s concerns focused on publications—organization of publications to meet the needs of specialists, rapid publication for those concerned with priority, a good library for those not independently wealthy. Hooker and his botanist friend George Bentham wanted to replace the annual Transactions of the society with a quarterly journal, divided into botanical and zoological parts. The resulting more rapid publication and concentration of papers by specialty would benefit serious researchers. Bentham and Hooker proposed that the new journal carry reviews of books—increasing its value to readers and also, by inducing authors and publishers to give books to the society, improving the library.

Progress had been so slow that Hooker was considering starting a new society, a place for discussion among naturalists—but not a merely convivial group like the Red Lions. “We want,” said Hooker, as he set his agenda for the weekend at Darwin’s, “some place where we never should be disappointed of finding something worth going out for. A good society well stocked with periodicals” was needed. It was a well-worn theme. He signed,

40 Ibid.
“Ever your bore, Jos. D. Hooker.” Hooker gave up this scheme as the Linnean Society slowly changed. Division of the quarterly *Proceedings* into zoological and botanical parts, promised at the 1855 anniversary meeting, began in 1856. Busk, elected to the council in 1855, was appointed undersecretary in 1857 with responsibility for the zoological part of the publications.44 Hooker, Bentham, and Busk, joined by Carpenter in 1858, worked persistently, attempting further to speed up publication by requiring monthly reports to the council on “the progress of the Society’s publications and papers in hand” and to improve quality by requiring authors to proofread papers. Although not a member, owing to financial constraints, Huxley had indirect input, for he contributed papers and often joined Busk, Hooker, and Carpenter for discussion of the society’s affairs over dinner before the formal meetings.45

In reforming the Linnean Society, Hooker’s goal was a society that would meet the needs of serious researchers, but amateurs were in no way excluded. In 1861, when Bell retired from the Linnean presidency, Hooker supported Bell’s nomination of George Bentham as his successor. Bentham (1800–1884) had practiced law only briefly before deciding, in 1833, to abandon it for botany and live on his inherited wealth. He was working at Kew on the preparation of his monumental *Genera plantarum*. Hooker explained to Huxley: “You know my prejudice against professional Scientists being Presidents of these heterogenous bodies; & in favour of independent men who make a bond of union between science as represented by the society & the outer world—& who if really scientific, are so as amateurs. Bentham is one such.”46 Amateur status did not imply inferior science in the mid-Victorian period, as Roy Porter has emphasized for geology. Among geologists the utilitarian, paid professionals were “under-labourers” to an amateur, gentlemanly elite.47 For Bentham, as for Lyell and other British “gentlemen geologists,” science was a vocation. But even Hooker, the “professional Scientific,” felt responsibilities to the “outer world” and recognized some benefits in maintaining gentlemanly social networks, as his next collaborative schemes illustrate.

Early in 1858 Hooker, Tyndall, Huxley, and Frankland were involved in planning a

44 Hooker discussed his aims for a new society in two letters to Huxley, Apr. 1856, Huxley Papers, 3.23–25, 3.26–27. On the president’s initiatives see Thomas Bell, “Anniversary Address,” *Proceedings of the Linnean Society of London*, 24 May 1856, pp. xix–xxii. (The *Proceedings* are usually bound within volumes of the *Journal of the Linnean Society*, but as different libraries combine them in different ways the volume numbers are not given here.) For Busk’s involvement see Linnean Society, London, “Council Minute Book No. 3,” fol. 258; and Gage and Stearn, *Bicentenary History of the Linnean Society*, pp. 55, 220–221.

45 See Linnean Society, “Council Minute Book No. 3,” 4 Feb. 1858, fol. 336–337 (report on publications); and “Council Minute Book No. 4,” 5 May 1859, fol. 5 (proofreading). Full information on council membership is in the Minute Books. On the informal dinners see Desmond, *Huxley*, p. 236. When Huxley was elected a fellow in late 1858 he was admitted without payment of the admission and annual contribution fees in consideration of his “distinguished” contributions: Linnean Society, “Council Minute Book No. 3,” 20 Jan. 1859, fol. 359.


quarterly “Scientific Review,” modeled on the status quarterly and aimed at the general middle-class public. In the Victorian period journalism provided a platform for radical intellectuals who, being outside both church and chapel, lacked pulpits and endowments. Books and journals were replacing the sermon as “the standard vehicle of serious truth.”

On a winter Sunday afternoon, Tyndall and Huxley called on Frankland before visiting Hooker at Kew, where they “argued upon the desirability of a new scientific review” as they promenaded in the gardens. After further discussion the following Sunday, Hooker was deputed to discuss the project with John Murray, the publisher, although by the time Hooker saw Murray they had already had second thoughts about the time and energy that would be expended in writing and persuading others to write a quarterly review of science. Murray confirmed their doubts by pointing out more difficulties: weekly papers were replacing quarterly, a purely scientific review would not appeal to the general public whose attention they wished to secure, a well-paid editor was a necessity, and “there must be a staff of promising contributors and also promised contributions, and all contributors must be wellpaid.” Only months later Tyndall and Huxley were involved in a project “to work up the public for Science” through regular columns in the *Saturday Review*. Hooker declined. “I quite feel the want of such a class of articles as you propose,” he told Huxley, but writing them would be “at the expense of original work, & we should thus ‘seek in certain ill, uncertain good.’”

Nevertheless, while he proclaimed the priority of original research, Hooker’s scheming over elections to the Athenæum Club demonstrates his broader social and intellectual goals. The Athenæum, representing both social standing and intellectual achievement, was the organizational embodiment of cultural authority, and Hooker wanted this recognition for science. Membership conferred authority and respectability. Darwin, elected in 1838, liked the social aura: “One meets so many people there, that one likes to see.” In 1856 Hooker had wanted to nominate Huxley under Rule II, which reserved places for men “of distinguished eminence in science, literature, or the arts, or for public service.” But the unwritten rule was that members must be gentlemen, and Darwin warned Hooker against nominating Huxley, fearing that Richard Owen might well charge Huxley with ungentlemanly behavior: “it would be very bad to get him proposed and rejected; & Owen is very powerful.”

When nominated in 1858 by Sir Roderick Murchison, a trustee of the Athenæum, however, Huxley was elected at the top of the list. Hooker urged him to pay up quickly so that he could come and “help to swamp the Parsons & get Buckle in.” Henry Buckle was the “literary lion of the day” after the 1857 publication of Volume I of his *History of Civilization in England*, which sought to remove providence and free will from historical interpretation and turn history into a science by identifying the laws behind human events. Neither Hooker nor Huxley respected his speculative vision of lawlike


social development, but Hooker was insisting that neither gentlemanly nor intellectual standing should be assessed by theological criteria. Huxley’s success made Hooker optimistic that more men of science might be elected under Rule II, and he advised Huxley on strategy for getting Tyndall and Busk elected. Membership in the Athenaeum gave social recognition to scientific merit, a recognition useful to those who wanted to be spokesmen for science. Over the next ten years election to the Athenaeum marked the upward social mobility of the X network: Busk (1859), Tyndall and Frankland (1860), Hirst (1866), and Spencer (1868) were elected under Rule II. Only for Lubbock (1857) and Spottiswoode (1859), who were not elected under Rule II, did social status carry more weight than scientific reputation.\(^5\) (See Figure 4.)

The Athenaeum was important in giving the men of science who were members easy social access to other power elites, as would become apparent later in 1858, when Hooker


and Huxley wanted to prevent Richard Owen's reorganization of the British Museum natural history collections. (See Figure 5.) As a solution to the shortage of space at Bloomsbury, Owen proposed to build a grand new science museum with ten acres of floor space at South Kensington. South Kensington was then a distant suburb, inaccessible by public transport, and it was associated with teacher training in Henry Cole's Department of Science and Art, widely looked down on as a Civil Service rather than a scientific institution. Men of science were afraid, although they could not say so publicly, that support for the natural history collections would decline when they were no longer associated with antiquities and the library. The existence of two herbariums, at the British Museum and at Kew, their cost and relative value, was a complication of concern to botanists, especially Hooker, who was easily roused to defend the preeminence of his father's herbarium at Kew. Men of science were preparing a memorial to the House of Commons protesting the proposed separation of the collections, but Hooker believed that behind-the-scenes pressure was more effective and that success lay with the parties who had the right man in the right place; as he put it to Huxley, "We have no man of weight or of craft, no party, no watchword."

Hooker and Huxley were agreed in opposing Owen but had no satisfactory alternative to his plan. Hooker suggested that the collections be divided between Kew and the Zoo-


54 Hooker to Huxley, 16 June 1858. Rupke stresses Owen's opponents' self-interest. According to his interpretation, Hooker and Huxley were guilty of "jealous duplicity," for Kew and the Museum of Economic Geology both benefited from their proposals: Rupke, "Road to Albertopolis," pp. 82, 85.
logical Gardens, but Huxley was doubtful. Hooker distrusted the geologists who were powerfully represented among the British Museum’s trustees—they had only the interests of “their own bastard science at heart.” When the Quarterly Review came out on the side of Owen and a new museum in December while the museum trustees remained silent, Huxley was provoked into action. He and Hooker would have to protect science: “I see nothing for it but for you and I to constitute ourselves into a permanent ‘Committee of Public Safety,’ to watch over what is being done & to take measures with the advice of others when necessary.” Huxley planned to begin by approaching friendly editors (including the Athenaeum Club member Charles Dickens) for support. Hooker intended giving Sir Roderick Murchison, a geologist and museum trustee, “a broadside” on the secrecy and duplicity of the trustees and planned “cramming” Lord Salisbury, a high-ranking government minister and fellow member of the Athenaeum, so that he would “make a noise” in the House of Lords. Hooker was on the winning side. With the Tory government and the men of science in agreement, Owen’s grand scheme was delayed by twenty years. Huxley’s description of himself and his allies as a “Committee of Public Safety” shows a self-confident belief that he and Hooker represented the genuine interest of the scientific public, as if they could rise above the sectional interests and personal animosities and loyalties that complicated the genuine difficulties over space, location, and government support for natural history collections.

Thus even before the publication of the Origin Hooker had gathered around him a network of naturalists who were involved in collaborative campaigns to organize natural history institutions in the interests, as they perceived them, of serious researchers. This naturalist network intersected with the broader interdisciplinary friendship network that, with the proposed “Scientific Review,” was beginning to organize in the service of larger social goals. Election of these men to the Athenaeum Club marked their upward social mobility into elite intellectual circles, giving them informal access to circles of power and influence and placing them among the cultural leaders of the nation. Scientific recognition, gentlemanly standing, and influential connections were all needed in the scientific and religious controversies of the early 1860s that drew Spencer, Lubbock, and Spottiswoode into the social and scheming network and undermined Hooker’s repeated resolution to eschew society. Participation in cultural politics was a moral duty. As Huxley reminded Hooker, their scientific standing brought them “duties . . . to the outside world, and to Science.”

LARGER ALLIANCES: SCIENCE AND THE GREAT LIBERAL PARTY

The controversies of the early 1860s over evolutionary theory were associated with broader controversies over freedom of opinion, and issues of freedom of opinion were associated with the problem of an Established Church. Positivists, scientific naturalists, and other secular intellectuals, theological liberals of the Broad Church, and Protestant nonconformists, on entirely different philosophical grounds, pursued common policies. J. P. Parry


stresses that policy, not philosophy, united the sections of the Liberal Party. “Whig-liberals” (including Huxley, Lubbock, and Spencer), “academic liberals,” and nonconformists united to pursue the abolition of university tests and the extension of civil liberty in religion. The participation of the X network in the broader campaigns of liberalism linked gentlemen and professionals together and demonstrates their engagement in the generalist intellectual culture. “Liberal” and “liberalism” were used vaguely and polemically, but they carried emotive weight. For Lubbock “the great liberal party” was fighting the “battle of freedom.” For Huxley liberalism implied the naturalistic philosophy that was underpinned by Darwin’s Origin—“a veritable Whitworth gun in the armoury of liberalism.”

Members of the X network revealed their meliorist political commitments when they joined the Quaker humanitarians of the Ethnological Society of London to oppose the racist social policies of the new Anthropological Society in 1863 and then, in 1864, joined Christian socialists and more radical “academic liberals” associated with J. S. Mill in a journalistic project to promote both science and liberal opinion to the general public through a weekly literary review, the Reader.

In these campaigns of the early 1860s the upwardly mobile professionals joined with Lubbock and Spottiswoode, gentleman-amateurs of liberal persuasion, and Spencer, philosopher of evolution on the cosmic scale. Lubbock played crucial roles in broadening both the social network and its political activities in the five years from 1859 to 1864. He moved from colleague to ally of the naturalists in the debates over the Origin, when the growing antagonism between Richard Owen and the Darwinians made it impossible, even for one so well connected and tactful as Lubbock, to maintain friendly relations with everyone. Then, in the controversy over Essays and Reviews in 1861, Lubbock had the social and intellectual credentials to form an alliance between men of science and liberal Anglicans. In 1863 he again had the credentials, and the energy, to take the presidency of the Ethnological Society and so maintain its traditions against the illiberal racism and ungentlemanly behavior of the Anthropological Society. Spottiswoode took less public roles, but he was the link with the Oxford reformers in 1861 and with the Ethnological Society in 1863. With the Reader Spencer entered the circle of collaborators, providing links to radical literary and journalistic circles. No longer was this a network of marginal men. Drawing on both their social and their professional standing, the members formed alliances with Broad Church Oxford reformers, the liberals associated with J. S. Mill, and Christian socialists.

Hooker, Lubbock, and Busk were willing allies of Huxley in the Darwinian and evolutionary debates. At the 1860 Oxford British Association meeting Lubbock gave a paper on the embryological evidence for evolution, and Lubbock and Hooker spoke on Huxley’s side in the legendary confrontation with Bishop Wilberforce. When Huxley took over the editorship of the Natural History Review in 1860, Busk, Lubbock, and Carpenter, plus George Rolleston of Oxford, supported him as coeditors. Even Hooker, now convinced that good research workers wasted their time in journalism, contributed one article a year.


As with the proposed “Scientific Review,” the journalistic models were the opinion-forming quarterly reviews. Huxley’s intention, as advertised on the title page, was to provide “critical” discussion on “general” biological problems in a “philosophical” (that is, non-dogmatic) spirit for both a specialist and a general audience. This ambitious project failed, and Huxley withdrew in 1863. The problems were predictable: it took too much work; there was an insufficient general audience for what proved to be a specialist review—and to make matters worse, the anatomical plates were regarded as unsuitable for a general audience; and the review was perceived, correctly, as “the organ of one party” rather than as the representative of unprejudiced, purely scientific inquiry.

From 1862 members of the X network tried to get the Royal Society’s premier award, the Copley Medal, for Darwin, but others resisted this indirect recognition of the merit of the *Origin*. Darwin was nominated, unsuccessfully, by Carpenter and Lubbock in 1862 and 1863. In 1864 Busk, seconded by Hooker’s old friend Hugh Falconer, tried to separate the award from any controversy over the *Origin* by omitting mention of the volume in the formal recommendation. Some council members, to avoid even indirect approval of Darwin’s theory, nominated an opposing candidate. Although Darwin won the election, the president, General Edward Sabine, effectively sabotaged the X network victory when, at the official presentation, he announced that the *Origin* was “expressly excluded” from the grounds of the award. Too late to prevent it, Huxley and the normally quiet Busk could only protest at this tendentious and unauthorized statement by the president.

The involvement of the X network in theological controversy in the early 1860s demonstrates the extent to which the men of science were participating in elite general culture and shows Hooker’s energetic commitment to the touchstone liberal issue of Church reform. The theological reinterpretations of *Essays and Reviews*, written to publicize new directions in theological and historical scholarship, created a greater furor than the *Origin*. The religious public was shocked, less by the repeated argument that theology must be reinterpreted and its spiritual essence distilled from the now-unbelievable literal accounts of Scripture than by the fact that these views were advocated by ordained clergy of the Church of England who had sworn conformity with its doctrines. Even worse, the *Pen-tateuch* offered the spectacle of a bishop using his office to “propagate infidelity.” The essayists and Colenso were widely charged with heresy, but their defenders asserted that


60 M. J. Bartholomew, “The Award of the Copley Medal to Charles Darwin,” *Notes Rec. Roy. Soc. Lond.*, 1975, 30:209–217, on p. 209. Hugh Falconer (1808–1865) had retired from botanical work in India owing to ill health. Hooker was on the council in both 1863 and 1864, and it must have been a deliberate strategy that he was neither nominator nor seconder.

61 Desmond, *Huxley*, pp. 329–330; Leonard Huxley, *Life of Hooker*, Vol. 2, pp. 75–76; and Leonard Huxley, *Life of T. H. Huxley*, Vol. 1, p. 255. Sabine’s exact words were a matter of controversy; see Bartholomew, “Award of the Copley Medal to Darwin,” p. 212. Bartholomew accuses the X network members of excessive sensitivity (pp. 212–213), but he may underestimate the symbolic meaning of the Copley; compare, for example, Frankland and Huxley’s campaign against James Forbes. The naturalists conducted the campaign, for the recommendation had to be seen to be grounded in scientific expertise, but both Tyndall and Hirst were sufficiently involved to report the incident in their journals: “Tyndall Journal,” 30 Nov. 1864; and “Hirst Journal,” 4 Dec. 1864.

62 Although on some issues Hooker was a conservative, his stance on Church reform was liberal. On the Church policy of the Whig-Liberals see Parry, *Democracy and Religion* (cit. n. 13), pp. 80–102 (summarized at p. 78); on Hooker see *ibid.*, p. 75.
if liberty of speech were not granted to clergy then either dishonest silence would be required of them or “the more hopeful and intelligent of our young men” would not be able, in good conscience, to enter the ministry of the Church of England.63

In February 1861, when the English bishops wrote a letter to the Times condemning the essayists, Lubbock and his friend William Spottiswoode (1825–1883), also a liberal Anglican and a gentlemanly businessman with scientific interests, began to arouse support for the essayists among leading men of science. They drafted an address in support of the first essayist, Frederick Temple, thanking him for his attempt “to establish religious teaching on a firmer and broader foundation” and urging upon the world at large the need to modify theological beliefs in the light of the “general progress of thought.”64 Spottiswoode, an Oxford mathematics graduate, visited Oxford to discuss strategy with Benjamin Jowett, one of the essayists, and Arthur Stanley, the leader of the Oxford Broad Church radicals. Spottiswoode and Lubbock hoped that scientific authority would encourage the Church authorities to modify either the creeds or the Act of Uniformity and so prevent an exodus by “the more liberal and thoughtful” clergy, unable to meet rigid interpretations of conformity.65 Hooker refused to sign because he believed that the public would realize how many names were missing from the list and therefore doubt that the memorial represented the judgment of scientific objectivity. Admitting the problem, Lubbock reluctantly withdrew the memorial: “it is irksome to do nothing while the battle of freedom is being fought, and I do think that the great liberal party should stand by their guns and their friends.” The difference was over strategy, not principle: a year later Hooker, at Lyell’s request, was circulating a memorial in support of Colenso and urging a doubtful Lubbock to action. Hooker hoped that all could unite on the “principle of freedom of enquiry and thought.” This memorial, too, was eventually withdrawn, but the X network gave Colenso private support: Hooker invited the Lubbocks to Kew to discuss strategy with Colenso in March; and in July Hirst, with Tyndall and the Lubbocks, met “the renowned Bishop Colenso” over dinner at the Busks.66 (See Figure 6.)


64 The memorial is found in Avebury Papers, Add. MSS 49639.29; and Hutchinson, Life of Lubbock (cit. n. 32), Vol. 1, pp. 57–58. Spottiswoode is a shadowy figure. He had succeeded his father as Queen’s Printer in the late 1850s. I have relied for biographical information on a biography in Nature, 26 Apr. 1883, pp. 596–601, and an obituary in Proceedings of the Royal Society of London, 1884–1885, 38:xxxiv–xxxix. There is no Dictionary of Scientific Biography entry for him.

65 Spottiswoode to Lubbock, 25 Feb. 1861, Avebury Papers, Add. MSS 49639.28 (the bishops’ letter had been published on 14 Feb.); and Lubbock to Hooker, 5 Mar. 1861, Hooker Correspondence, “Letters to J. D. Hooker,” 14.175. On Stanley see Ellis, Seven against Christ (cit. n. 63), p. 11. The initial list of signers included Huxley, Busk, Lyell, Darwin, Carpenter, G. B. Airy, and Hooker’s botanist friend George Bentham. Huxley’s name was on the initial list that Lubbock sent to Hooker (27 Feb. [1861], Hooker Correspondence, “Letters to J. D. Hooker,” 14.173), but, according to Desmond (Huxley, p. 298), Huxley refused to sign because he agreed with the critics that the views of the essayists were untenable for a clergyman. Responses to Lubbock’s requests for signatures are in Avebury Papers, Add. MSS 49639.30–53; see, e.g., Lyell to Lubbock, 25 Feb. 1860; Carpenter to Lubbock, 27 Feb. 1860; and John Herschel to Lubbock, 2 Mar. 1860.

66 On the problems with the memorial to Temple see Hooker to Lubbock, 29 Feb. 1861, Hooker Correspondence, “Letters from J. D. Hooker,” 10.240–41; and Lubbock to Hooker, 2 Mar. 1861, Hooker Correspondence, “Letters to J. D. Hooker,” 14.174. On the memorial to Colenso see Lubbock to Hooker, 16 Feb. 1863, Hooker...
Strange alliances emerged as the X network defended the essayists and Colenso. When the Reverend Arthur Stanley wrote in defense of the essayists, Hooker, Huxley, and Carpenter tried to get him into the Philosophical Club, the protector of scientific standards in the Royal Society. When Lyell consulted Carpenter, Lubbock, Hooker, and Huxley on how best to support Colenso, Carpenter suggested that he be admitted to the Athenaeum, as was customary for colonial bishops, and Huxley urged Lubbock to use his position on the Athenaeum management committee to ensure that Colenso’s “gentlemanly” credentials were recognized. Liberal theology, like science, was given respectability when its representatives were elected to the Athenaeum. Proposing Stanley for the Philosophical Club may have been a throwback to the practice, before the reform of 1847, of using the Royal Society to mark social respectability. Alternatively, if, as Moore suggests, to treat the Bible like any other book was to accept the principles of scientific naturalism, Hooker, Carpenter, and Huxley may have perceived liberal theology as “really scientific.”


67 Moore, “1859 and All That” (cit. n. 10), p. 193. On the unsuccessful effort to get Stanley into the Philo-
Memorials flourished as the intensity of theological debate increased. When, in February 1864, the Judicial Committee of Privy Council ruled that two of the contributors to Essays and Reviews were not heretical, overturning a Church court’s judgment. 137,000 laypersons and 11,000 clergy signed protesting memorials on the side of orthodoxy. A new group claiming to represent science entered the debate, offering a declaration that Nature and Scripture could not be in contradiction and affirming that apparent contradictions, if not due to faulty interpretations of Scripture, would be dissolved with the progress of physical science. This “Declaration of the Students of the Natural Sciences” was presented to the Lower House of Convocation, a formal representative assembly of the Church of England, which was about to debate Essays and Reviews, revised, and then circulated widely among members of scientific societies for signature. It created immediate dissension. Sir John Herschel publicly condemned it as a “mischievous” attempt to increase the discord in the Christian world. Hirst received a request for his signature in September and declined curtly, just before attending the British Association meeting in Bath. But at Bath, with Lyell as president, the Darwin-Colenso camp was in the ascendancy. Colenso attended and was put on the committee of Section A for mathematics—“for his good arithmetical work,” Hirst surmised. Hirst recorded with satisfaction “the applause with which every protest against fettering science by religious dogmas was received.” He believed that Colenso had given scientific men courage to express their opinions openly. Representing the other side, the editor of the Bath Chronicle was unhappy at the tone of the meeting and accused a “dangerous clique” of using the British Association to promote “heretical teachings.”68 This is the context in which, just two months later, Hirst wrote that the members of the new club were devoted to science, “pure and free, untrammelled by religious dogmas.”

In the controversies over race within the Ethnological and Anthropological Societies of London, which began to engage members of the X network in 1863 and 1864, they were confronted by another group claiming to speak for science. The leaders of the new Anthropological Society of London also asserted their independence from all theological preconceptions, but in this controversy the political and moral sensibilities of the X network members outweighed their commitment to freedom of thought. The X network sided with the Quaker humanitarians of the Ethnological Society, which maintained the principles of its antislavery predecessor, the Aborigines Protection Society: the leaders of the new Anthropological Society advocated polygenesis as a theory and justified slavery as a policy. Robert Hunt, who led the breakaway, described the ethnologists as suffering from “religious mania” and “rights-of-man mania.”69

The Origin, with its implications for human origins, had aroused and directed the an-
thnological interests of Busk, Lubbock, and Huxley, but they were not members of the Ethnological Society of London when it was split by the crisis over race in 1863. During this crisis Lubbock became president, bringing social and scientific stature to the society through his patronage. Spottiswoode, Lubbock’s collaborator in the Essays and Reviews memorial of 1861, was probably the power broker, for Spottiswoode—and Son, Queen’s Printer, an Oxford-trained mathematician with a gentlemanly interest in antiquities and travel—was one of the secretaries of the Ethnological Society in 1862–1863. Lubbock turned to his friends for support, and Huxley responded: “I am very glad to hear from Busk that you are to be the new president of the Ethnological Society. Of course under these circumstances I shall become a member and do my best to help you though, as you know, that help is likely to be little enough—Let Rolleston and Flower and all the good men and true know of your intention.” Huxley and Busk became members of the society and were immediately elected to join Spottiswoode on the council at the annual meeting on 5 May 1863, at which Lubbock was elected president.70 Francis Galton, Darwin’s cousin, also joined the council.

The two societies were divided not only by the politics of race but also by morals and manners. The Anthropological Society’s discussion of the effects of missionary activity on non-European cultures had incensed the missionary societies of England; it displayed a savage skeleton in its window to scandalize passersby; Richard Burton, the collector of phallic symbols, was among its members; and it had an X Club equivalent called the Cannibal Club that used a mace in the form of a Negro head.71 Such scandalous behavior brought science into disrepute and undermined the claims of the X network members that secular, scientific ethics and morality were more righteous than theological ethics and morality. When they dissented from established opinion it was in “a reverent spirit,” but the Cannibal Club reveled in irreverence and impropriety.

Even worse, the anthropologists were claiming that their racially based policies represented the scientific approach to political and social questions. Leading anthropologicals, while accusing the ethnologists of attachment to the “unproven” theory of monogenesis, accepted polygenesis and based their arguments for essential human inequality on innate and permanent race differences. On these grounds they defended slavery, arguing that the “wicked” war in America demonstrated widespread ignorance of the conclusions of anthropological society; explained the Irish problem by reference to Irish racial characteristics; and, in 1866, defended the governor of Jamaica’s brutal suppression of a black uprising. They opposed all melioristic theories and policies grounded on moral and political principles. Human equality is a chimera, Hunt claimed, and social science must be based on the “facts of human nature” rather than mere philanthropy. In the Ethnological Society the X network members aligned themselves with other liberals to associate science with liberal policies. The contrast was made particularly clear when, in 1866, Huxley, Spencer,
and Frankland joined J. S. Mill and other leading liberals in raising funds to prosecute Governor Eyre of Jamaica for murder.⁷²

But it was not enough to propound an alternative to the racist science and policy of the Anthropological Society. The existence of rival societies claiming the authority of science undermined the impartial image both sides tried to present. It was a “scandal,” admitted Huxley in private, while Hunt publicly acknowledged the problem: “All personal quarrels between scientific men do an injury to the cause of truth, by showing that we are not above the petty feelings and jealousies of theological sects.” Even more damaging, such dissension could suggest failings in science rather than in scientific men. The controversy, argues Evelleen Richards, was a struggle for hegemony, as each group claimed that it represented the impartial and objective scientific study of “man.” Over the next eight years Huxley, Lubbock, and Busk, supported by Alfred Russel Wallace, worked to limit and control the anthropologicals’ contributions to the British Association, to give what they called “proper direction” to anthropology, and to reunite the societies.⁷³

When Spencer, Huxley, Tyndall, Lubbock, and Spottiswoode were involved in taking over the Reader at the end of 1864 they explicitly associated science and “liberal opinion.” Under its Christian socialist projectors, the Reader was losing money. Spencer and the original science editor, Norman Lockyer, initiated a campaign to revive it with new proprietors, increased capital, and increased scientific content. Among the new shareholders were Spencer, Lockyer, Tyndall, Lubbock, Spottiswoode, Charles Darwin, Francis Galton, Tyndall’s recently knighted lawyer-friend Sir Frederick Pollock, John Stuart Mill, and J. E. Cairnes, an antislavery associate of Mill. Huxley, who had major editorial responsibilities, was made an honorary shareholder. The Reader was subtitled “A Review of Literature, Science, and Art.” The “lighter contents” of literature and art would, it was hoped, help to “carry science into circles where . . . no science has been read,” thereby avoiding the audience problem of both the proposed “Scientific Review” and the Natural History Review. The reorganized Reader announced that it would extend the science section to eight pages weekly, or one third of the total: “The very inadequate manner in which the Progress of Science, and the Labours and Opinions of Our Scientific Men, are recorded in the weekly press, and the want of a weekly organ which would afford scientific men a means of communication between themselves and with the public, have long been felt. They have been the subject of special consideration lately, by some of the leaders of Science in London.”⁷⁴


By joining science to literature and art, these apparently impartial leaders of science had to declare party affiliations. In canvassing Mill’s support Spencer described the Reader as “an organ of scientific thought and conscientious literary criticism” promoted by “those who have at heart the advance of liberal opinion.” He asked for Lubbock’s assistance “as a means of strengthening the scientific interest” in the proprietorship and “as further guaranteeing the maintenance of an advanced position on theological and other general questions.” At the first X Club dinner, on 3 November 1864, Spencer brought up the Reader for discussion; “provided a liberal editor is appointed,” the members agreed to give it “hearty support.” The Reader survived only briefly as an organ of liberal science. Huxley’s December 1864 editorial, “Science and Church Policy,” which claimed for science uncontrolled domination over the whole realm of intellect,” offended many of his Christian socialist colleagues, and by March some of the proprietors and editors were pulling out. By August the end had come and negotiations were under way to sell the Reader to Thomas Bendyshe, a Cannibalian Club member whom Huxley described as one of the “lights” of the Anthropological Society: “I should be very sorry to see the Reader fall into his hands.” It was a sad end for the flagship of science and liberalism.

Meanwhile, the social centers of the X network were shifting from the Hooker and Huxley households to the much larger and richer establishments of the Lubbocks, the Spottiswoodes, and the Busks. (See Figure 7.) The Lubbocks began to play a central social role after moving from High Elms, the family estate near Downe, to set up an independent household at Chislehurst, eleven miles southeast of London, in 1861. Spencer, for example, who had been introduced to the Lubbocks by the Busks, and to the Spottiswoodes by the Lubbocks in 1862, became a regular visitor at Lubbock’s country house. Thus Spencer, the provincial dissenter who refused to wear formal morning dress and who had been a founding member of the Metropolitan Anti-State-Church Association in 1845, moved from the fringe of the network to a comfortable place in its most privileged and Anglican expression. By 1862 Lubbock was part of the holidaying circle, visiting Switzerland with Huxley and Tyndall in the summer. Hirst and Tyndall’s Sunday walks to Kew were often replaced by trips to Chislehurst, where Lubbock held open house. There they were likely to meet the Busks, or Spencer, or Spottiswoode. Tyndall and Hirst were both drawn to Ellen Lubbock, discussing her charm and beauty and even coming to imply, albeit very discreetly, that she was her husband’s superior in both sensitivity and force of character. The wives and families were important, especially in providing a congenial social environment for the bachelors. Mrs. Busk and Lady Lubbock were his “two best lady-friends.”


76 Huxley to Norman Lockyer, 22 Aug. 1865, Huxley Papers, 21.242. On Bendyshe see Byrne, “The Reader” (cit. n. 71), p. 115. Opposition to the politics of the Anthropological Society was characteristic of the Reader proprietors. Thomas Hughes and J. M. Ludlow, Christian socialists who were among the original proprietors of the Reader, both became members of Mill’s Jamaica Committee. See ibid., pp. 320, 325; and Semmel, Jamaican Blood and Victorian Conscience (cit. n. 72), p. 61.


said Hirst, after sitting between them at a Royal Institution lecture in 1867. Spencer, like Huxley, admired Ellen Busk’s sharp mind. His ponderous prose reveals that her daughters were also appreciated: “Mrs Busk, scientifically cultivated in a degree rare among ladies, united with her culture other mental attractions, which gave a never failing interest to her conversation. In after years many pleasant times, short and long, were spent with them and their four daughters.”

Spottiswoode was the last to join the social network. Hirst was unimpressed by Spottiswoode’s mathematics—“intricate” calculations around a “rather commonplace” idea—but after dining at his “large and elegant” house for the first time in 1863 decided that he “is a genial, gentle man whom I like very much.” By 1864 dinners, soirées, and garden parties at Spottiswoode’s were added to weekends at the Lubbocks’ in Hirst’s social calendar.

79 “Hirst Journal,” 18 Jan. 1867 (this suggests that he had reconsidered his earlier judgment [see above at note 36]); and Spencer, Autobiography, Vol. 2, p. 71 (describing his friends in 1862).

80 On Spottiswoode’s mathematics see “Hirst Journal,” 23 Feb. 1862; on his character and house see ibid., 29 Nov. 1863. Hirst had been more critical in 1856; see Hirst to Tyndall, 5 Oct. 1856, Tyndall Papers, 11/D5.103. On further social engagements at Spottiswoode’s see “Hirst Journal,” 31 Jan., 6 Sept. 1864.

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Figure 7. Sir John Lubbock in his early thirties. Lubbock succeeded his father as Sir John in 1865. From H. G. Hutchinson, Life of Sir John Lubbock, Lord Avebury (London: Macmillan, 1914), Volume 1, Frontispiece.
Even Hooker, who was guarding his energies and avoiding society, and Huxley, kept at home by family responsibilities and overwork, were occasional guests. The bachelors (Spencer, Hirst, and Tyndall) and the scientific gentlemen (Lubbock, Spottiswoode, and Busk) met often. The professionals with young families and limited incomes (Huxley, Hooker, and Frankland) had less time for both general and scientific sociability. Hooker was tired of the hoi polloi of scientific society, he told Darwin in October 1863: “Huxley, Lubbock and half a dozen others are enough for me of the workers, outside my own immediate pale.”81 “Huxley, Lubbock and half a dozen others” was a prophetic description of the X Club.

ALBEMARLE STREET CONSPIRACY

“No doubt opportunities will arise where concerted action on our part may be of service.” Hirst’s journal entry carries new weight when read in the light of the prehistory of the X Club. His expectation was based on knowledge of past concerted action. When Hooker, Tyndall, Huxley, Frankland, Busk, Lubbock, Spencer, and Hirst met for dinner on 3 November 186482 they were already involved in many projects together: spreading liberal opinions through the Reader, seeking Darwinian and liberal hegemony over anthropological science through the Ethnological Society, pushing the Royal Society to honor Darwin and his Origin of Species, promoting serious research in natural history through the Linnean Society. The Linnean Society was at last running smoothly, but in the Royal Society, the anthropological societies, and the British Association controversies were conspicuous. Only two months previously, the Bath British Association meeting had demonstrated the deep theological divisions within the scientific community. In this context devotion to science, “untrammelled by religious dogmas,” required taking sides.

The names proposed for the club amount to overt admissions of the members’ unrecorded intentions. At the first meeting Huxley suggested “Blastodermic Club” because in birds the blastoderm is the seat of the development of all parts of the organism. That is, Huxley wanted the club to guide the growth and development of the body scientific. This intention evokes Hooker’s projects of the late 1860s to use the examination system to reform biological teaching and to reorganize the meetings and publications of the Linnean Society. It also describes the efforts of Lubbock, Huxley, Spottiswoode, and Busk in the Ethnological Society to give “proper direction” to anthropological science. “Thorough Club,” which was rejected for its undesirable associations, alluded to the campaigns for


82 Francis Galton is a surprising omission from the list. As an editor of the Reader and a member of the council of the Ethnological Society, he had been a collaborator and was a friend of Spottiswoode and Tyndall. Examination of correspondence suggests that he was not a friend of either Hooker or Huxley in 1864. Other absences are more easily explained. Their long-term friend and collaborator W. B. Carpenter, who had been seriously ill for months, turned down an invitation to membership (see note 3, above). Alexander Williamson, the positivist professor of chemistry at University College, was a friend and sympathizer but not a collaborator. Although Norman Lockyer collaborated in the Reader project, he was not a close friend of any member of the X network and had neither scientific nor social standing in 1864. Sir Charles Lyell, a sympathizer and occasional collaborator, moved in more elevated social circles. Charles Darwin contributed money to liberal causes, but he was single-mindedly pursuing the acceptance of his theory of evolution (and he lived outside London). James Fergusson, an antiquarian of Darwinian inclination, who was proposed as a tenth member (see note 3, above; and Barton, “‘Influential Set of Chaps’” [cit. n. 4], p. 57), seems a surprising choice, as I have found no reference to any prior association with the X network.
freedom to express unorthodox opinion. Founded at the 1862 British Association meeting to promote a “thorough and earnest search after Scientific truth particularly in matters relating to Biology”—where “thorough” meant “free from the suspicion of temporizing and professing opinions on official grounds”—the Thorough Club had survived less than six months.83 The accusation that many people prevaricated about their true beliefs was the liberal challenge to the doctrinal conformity required by the Church. In the new club there was no prevarication: “amongst ourselves there is perfect outspokenness.” “X Club” was chosen in May 1865, Spencer said, because “it committed us to nothing”—but if “X” committed them to nothing it was not because they were uncommitted. Perhaps names like Blastodermic Club and Thorough Club gave too much away. Even twenty years later Huxley hesitated to admit how much the alliance was deliberate, for they were still meeting and were still suspected of undue influence.84

In this account of the club’s formation, Hooker, Lubbock, and Spottiswoode join Huxley in the limelight. Hooker initiated many of the projects to reform natural history education and institutions in the 1850s, and he was also involved in more polemical, extrascientific schemes, from getting Buckle into the Athenaeum and Stanley into the Philosophical Club to supporting Colenso. The lesser scientific reputations of Lubbock and Spottiswoode may have led twentieth-century historians of science unconsciously to underestimate their importance in the Victorian scientific community. Birth and wealth gave Spottiswoode and Lubbock, who became Sir John in 1865, both status and the relative freedom to follow their own interests.Both were important in making alliances between science and “the great liberal party” in the early 1860s. They came to occupy many official positions because, with their social standing and their commitment to naturalistic science and freedom of thought, they were acceptable to almost all parties. Spottiswoode had been treasurer of the British Association since 1861, and he was also the first X Club member to become an officer of the Royal Society.85

The alliances the X Club members formed indicate commitments beyond professional science. Outside science, when seeking cultural recognition and leadership in the early 1860s, these self-proclaimed representatives of science formed alliances with gentlemen and liberals. They rejected both the politics and the manners of the Anthropological Society. They sought social and cultural recognition through the gentlemanly Athenaeum Club. Their alliances with germanizing theologians, Christian socialists, humanitarian ethnologists, and the liberals associated with John Stuart Mill aligned “Science” with liberal reforms in theology and in social policy. Commitments to naturalistic explanation and to melioristic social reform linked them to these groups. Hirst described the X Club members as committed to science “pure and free,” but in the controversies of the early 1860s the focus was on defending freedom rather than purity. The relationship of “pure” science to

83 For the proposed names see “Hirst Journal,” 6 Nov. 1864; and Spencer, Autobiography, Vol. 2, p. 115. For the draft constitution of the 1862 organization see “Thorough Club,” Huxley Papers, 31.120. Huxley’s ticket to the first meeting (Huxley Papers, 31.121) identifies him as the chairman and Charles Kingsley as the vice-chairman. Other members were Robert Chambers, G. H. Lewes, and Spencer. George Eliot described the club and its members in letters to Sara Hennell, in The George Eliot Letters, ed. Gordon Haight, Vol. 4 (London: Oxford Univ. Press, 1956), pp. 66, 78. The first meeting was held in October 1862 and it had collapsed by March 1863.


85 On Spottiswoode’s election as treasurer of the Royal Society see Barton, “‘Influential Set of Chaps’” (cit. n. 4), pp. 64–66.
industry and manufacturing and questions about government support for science were in the background.

Although professional concerns were also in the background in the early 1860s, this was a temporary consequence of many pressing conflicts. Hooker’s network of naturalists had been building an infrastructure to support serious research in the late 1850s, and similar concerns later occupied the larger network. But “professional” did not imply antagonism either to individual amateurs or to gentlemanly culture. Hooker sought the support of “really scientific” amateurs in achieving professional goals and sought entry to elite gentlemanly circles for his fellow professionals. The new professions were achieving the gentlemanly standing of the old professions, as the steady movement of the ambitious young professionals of the X network into the Athenaeum Club in the late 1850s and early 1860s illustrates. Hooker, Lubbock, and their friends were also changing the basis for gentlemanly standing by insisting—for example, in the cases of Buckle and Colenso—that religious orthodoxy not be a criterion. The outsiders of 1851 were at the centers of social and cultural debate by 1864.\(^\text{86}\)

The coincidental timing suggests that both the “Declaration of the Students of the Natural Sciences” and the controversies in the anthropological societies provoked the formation of the X Club. With the declaration the theological controversy that had embroiled the country for four years boiled over into the scientific community. Like the controversies among anthropologists, this was dangerously divisive, undermining the impartial image of calm, objective science. Who spoke for science? The “Students of the Natural Sciences”? The Anthropological Society of London, which claimed to study man scientifically and accused others of “religious mania” or “rights-of-man mania”? “Some of the leaders of Science in London,” as the projectors of the Reader described themselves? If science was to have cultural authority, it had to speak with one voice. Not only in anthropological science, but more broadly, the X Club “leaders of Science in London” were trying to assert hegemony by presenting themselves as representatives of impartial science. They succeeded because, through the interaction of specialist expertise and gentlemanly standing, they became acknowledged spokespersons for science and because, through collaboration, they also achieved institutional power, most importantly in the two societies that stood for science as a whole, the British Association for the Advancement of Science and the Royal Society.\(^\text{87}\) They became, in Hooker’s words, men of weight, of craft, and of party.

\(^\text{86}\) Collini describes the general process in *Public Moralists* (cit. n. 13), pp. 30–50. Both Collini (*ibid.*, pp. 203–205) and Roy MacLeod (“Whigs and Savants: Reflections on the Reform Movement in the Royal Society, 1830–48,” in *Metropolis and Province*, ed. Inkster and Morrell [cit. n. 28], pp. 55–90, on pp. 78–79) suggest that professional science became specialist and exclusive only in the early twentieth century.

\(^\text{87}\) On the Royal Society see Barton, “ ‘Influential Set of Chaps’ ” (cit. n. 4). Hirst became general secretary of the British Association in 1866, and other X names became conspicuous on the council list from that year; see Barton, “X Club” (cit. n. 14), pp. 163–171.