7.

The “Cambridge Stamp”

The Benefits of Becoming a High Wrangler

What did a high wrangler gain from his Cambridge education? The pressurised coaching necessary for success certainly gave the top candidates a sound drilling in elementary mathematics, a good knowledge of some more advanced topics, and a familiarity with applications to the physical sciences. The best students were brought to the point at which they could contemplate conducting original research, and several went on to do so. However, some probably felt that the emphasis of their training on amassing examination marks was unworthy of higher intellectual aspirations. Though William Hopkins did what he could to stress the more philosophical aspects of the subject, he knew that speed and proficiency in examination technique were essential to ensure success, and he trained his students accordingly, with regular written tests.

The physical and intellectual demands on these students were great. Habits of intense and protracted study were inculcated, and the best students learned to work both accurately and very fast. Those who succeeded demonstrated stamina and resilience, the ability to work at a high level under severe stress, the capacity to assimilate rapidly a mass of technical information, and to express themselves on paper clearly and succinctly. These assets were to serve them well in later life, often in fields far from mathematics.

The competitive nature of the examinations encouraged another character trait: the will to win. Some wranglers carried through life a strong combative streak and a confidence in their own judgment. Sometimes, this took a fairly benign form, as with William Thomson. Though in some respects a diffident man, Thomson’s scientific self-confidence led him to formulate speculative hypotheses, many (though not all) of which turned out to be true. Throughout his long career, he relished the competitive aspect of applying mathematics. This was exemplified during a visit by the German physicist and physiologist, Hermann von Helmholtz. On Thomson’s yacht, they tackled together the question of formulating a mathematical theory of short capillary
waves, as seen by dangling a fishing line in the moving sea. When Thomson had to go ashore for a few hours, he surprised Helmholtz by instructing him not to work on the problem in his absence, as this would give an unfair advantage in what Thomson clearly regarded as a race.\footnote{Smith & Wise (1989), p.738.}

The combativeness of some others created trouble and controversy. The most remarkable case is that of the theologian J.W. Colenso, to be described later.\footnote{In Chapter 10 (under heading “The African Bishops”).} A naturally stubborn and abrasive personality was probably reinforced by his training: he carried into theology a mathematician’s confidence in the rigour of his analysis, and a conviction of the rightness of his unorthodox views.

The narrowness of Cambridge’s education, confined mainly to classical languages and to mathematics, was criticised by many. Solomon Atkinson’s complaint (described in Chapter 2) that he received no useful preparation for life in the real world had some substance. Yet many top wranglers found time to acquire extra-curricular skills. Some gained extensive knowledge of English literature and of foreign languages; many were proficient players of musical instruments; and some excelled at sports and outdoor pursuits. The fact that so many went on to illustrious careers in fields other than mathematics and natural philosophy goes some way to counterbalance the criticisms of the narrowness of formal education offered at Cambridge. A few examples will suffice.

Duncan Gregory (5th, 1837), already well versed in mathematics from his time at Edinburgh University, studied chemistry when at Cambridge, assisting the professor, James Cumming, and as a result probably gaining a lower Tripos place than he merited.\footnote{Ellis (1865). James Cumming had been 10th wrangler in 1801 and served as Professor of Chemistry from 1815 to 1861.} According to Charles Bristed, the senior wrangler of his year, Arthur Cayley (1st, 1842) had generally the reputation of being a mere mathematician, which did him a great injustice, for he was really a man of most varied information, and that on some subjects the very opposite of scientific—for instance he was well up in all the current novels, an uncommon thing at Cambridge, where novel reading is not one of the popular weaknesses.\footnote{Bristed (1852), v.1, pp.130, 131.}

One of the most intellectually wide-ranging was Robert Leslie Ellis, the senior wrangler of 1840 and a good classical scholar. Though never in robust
health, and an invalid long before his early death at the age of forty-one, he was rightly regarded by his peers as a polymath. As well as mathematics, Ellis wrote on subjects as diverse as *Roman Aqueducts*, *Boole’s Laws of Thought*, *On the Formation of a Chinese Dictionary*, *Vegetable Spirals*, and *Comparative Metrology* (Ellis 1863). Together with another senior wrangler, D.D. Heath (1st, 1832), and with James Spedding, he also edited a multi-volume scholarly edition of the works of Francis Bacon.303 Though primarily a lawyer, the versatile Heath numbered the poets Tennyson and Wordsworth among his friends, and he found time to write papers on the tides, on the “doctrine of energy” (praised by Clerk Maxwell), and on Greek prose authors. Isaac Todhunter was a particularly impressive linguist who, as well as the classical languages, reputedly knew French, German, Spanish, Italian, Russian, Hebrew, Arabic, Persian and Sanskrit.304

Another Ellis, no relation, was Alexander John Ellis (6th, 1837), whose main claim to fame was as a philologist who collaborated with Isaac Pitman on phonetic writing. He wrote a five-volume work *On Early English Pronunciation* (1869–89) and made English translations of German works on mathematics and acoustics.305 In addition, Ellis wrote many other disparate books and papers: works on musical pitch, pronunciation for singers, analysis of meteorological observations, and several mathematical texts, most notably *Algebra Identified with Geometry* (1874). More surprisingly, he also wrote a book on *Horse Taming* (1842), based on the methods “practised by the Red Indians of North America.”306

George Budd (3rd, 1831), who transferred from St John’s to the medical college, Caius, in his first year, studied medicine as well as mathematics. Further training in Paris and London led to a distinguished career as Professor of Medicine at King’s College, London. And the blind Henry Fawcett (7th, 1856) became Cambridge’s Professor of Political Economy and a reforming member of Parliament. Charles Baron Clarke (3rd, 1856) was a keen botanist;
and a period spent in India enabled him to build a fine collection of specimens that he presented to Kew Gardens. 307

Many went on from mathematics to the Anglican priesthood and to high Church positions. Thomas Rawson Birks (2nd, 1834) was just one such, a leading figure of the Evangelical wing of the Anglican Church and Cambridge’s Professor of Moral Philosophy. Several other leading churchmen are considered later. Samuel Greathed (4th, 1835), a founder of the Cambridge Mathematical Journal, became a parish priest and a composer of music for the Church. 308 Many others were proficient musicians, among them P.G. Tait, who played in orchestras and supplied a flute obligato at a concert by a “distinguished local soprano” in Belfast. 309 John A.L. Airey (2nd, 1846) and William Thomson were among the founders of the Cambridge University Music Society.

Perhaps the most important advantage of a high Tripos place was its wide recognition as a stamp of excellence, not only in Cambridge but throughout the English-speaking world. The mere fact of a high place was usually enough to ensure election to a college fellowship and a comfortable interlude in which to contemplate the future. The standard path was to study for holy orders, with ordination following after a few years, or to enter one of the London Inns of Court to practise law. The dominant role of Cambridge and Oxford as training grounds for the Anglican Church, and the many parishes in the gift of their colleges, ensured the preferment of their graduates. More than three hundred such posts, in thirty-five counties, were in the gift of the colleges of Cambridge University. 310 After a few years in a parish, those priests who had been high wranglers and fellows became likely candidates for advancement to high office, as chaplains to royalty, canons and deans of cathedrals, and ultimately as bishops, either at home or in the Colonies.

Lawyers, Politicians and Educators 311

A high wrangler had bright prospects in the law, readily accepted for training at the Inns of Court, and [with the exception of C.O. Budd (3rd, 1844) who, for reasons unknown, received “no call”] quickly becoming a barrister in an

307 See also Chapter 10, pp.258, 259.
308 Grove (1906).
310 Around 350 such parishes are listed in the Cambridge University Calendar, 1909–10, pp.810–813.
311 Except where otherwise indicated, biographical information in this section is mostly taken from Venn & Venn (1940).
established practice. There were four Inns at the time: Lincoln’s Inn, Gray’s Inn, the Inner Temple and Middle Temple, each with a collegiate atmosphere resembling that at Oxford and Cambridge. Many of the lawyers served as equity draftsmen and conveyancers, and several were involved in legal publications such as the *Chancery Reports*. Some became judges or legal counsels to major enterprises: for instance, Anthony Cleasby (3rd, 1827) was a barrister and served as Baron of the Exchequer during 1868–78; Douglas Denon Heath (1st, 1832) was a county court judge; Colin Blackburn (8th, 1835) became a noted High Court judge and then a Lord of Appeal; George W. Hemming (1st, 1844) was a chancery court reporter for thirty-five years and served as counsel to Cambridge University; and Charles T. Simpson (2nd, 1842) was counsel to the Post Office. Arthur Cayley (1st, 1842) practised as a conveyancer for fourteen years, writing mathematical papers in his spare time, before his election as the first Sadlerian Professor of Pure Mathematics at Cambridge.

Relatively few high wranglers pursued careers in politics, and those who did so usually first undertook a legal training. Though Henry Fawcett’s blindness, caused by an accident, brought his legal studies to an abrupt halt, he went on to a notable Parliamentary career as a radical and reforming Liberal. Believed to be the first blind member of Parliament, he represented the constituencies of Brighton and then Hackney, and became a well-known public figure. Concerns over his disability denied him a seat in the Cabinet; but he was a formidable campaigner for a range of Liberal causes, and for a time served successfully as Postmaster General, when he introduced the first parcel post. Among the causes that he championed were votes for women, the abolition of religious tests in universities, the preservation of common land from private ownership, and fairer administration of British India.

His popular *Manual of Political Economy* (1863) was published just in time to secure his appointment as Cambridge’s Professor of Political Economy, ahead of his friend Leonard Courtney (2nd, 1855). He held the chair from 1863 until his death in 1884; but he had few official duties and few able students, there being no examination in the subject. A populariser rather than an original theoretical economist, Fawcett held opinions much influenced by those of John Stuart Mill. His later articles were devoted to socio-economic matters such as pauperism and its causes, free trade, and state Socialism.312

One of the first successful lawyer-politicians among our wranglers was Edinburgh-born Samuel Laing (2nd, 1832), who in 1842 became secretary to the Board of Trade responsible for railways. In 1848, he then became chairman and managing director of the London, Brighton, and South Coast Railway, and served terms as Liberal member of Parliament for Wick in northern

312 Stephen (1885); Goldman (2004).
Scotland. Returning to government administration, he was briefly financial secretary to the Treasury and, during 1860–65, financial minister to the crown in India. On return from India, he was re-elected MP for Wick during 1865–68, and then for Orkney & Shetland in 1873–85. Laing returned in 1867 to head the London, Brighton, and South Coast Railway Company, helping to rescue it from imminent bankruptcy, and remaining its chairman until his retirement in 1894. On leaving Parliament at the age of seventy, he turned to writing: his popular *Modern Science and Modern Thought* (1885) espoused the evolutionary ideas of Darwin and Huxley, exposing the contradictions between recent scientific data and traditional religious views. His later works on similar themes, though unoriginal, were clear and interesting expositions of important subjects, that showed his wide command of scientific matters.

While at Cambridge, James Wilberforce Stephen (4th, 1844) had been tutored by William Hopkins and was a rowing companion of William Thomson. After study at Lincoln’s Inn, he was called to the Bar in 1849, but left for Australia in 1855. In Melbourne, he rapidly built up a successful legal practice. In 1871 he was elected to the Victoria Legislative Assembly and served as its Attorney-General during 1872–74. At this time, he successfully promoted a Bill for “free, compulsory and secular education in Victoria”, and he served as the First Minister for Public Instruction. In 1874 he resigned from political life on being appointed a Judge of the Supreme Court of Victoria.

Another who entered politics was John Eldon Gorst (3rd, 1857). After a few years as a fellow of St John’s, he went to New Zealand, at first working for Bishop Selwyn’s mission to assist the Maori people, then entering government service. He rose to become civil commissioner for Waikato, but a quarrel with the Maoris over his imposition of English ideals led to his return to England in 1864. There, he was soon called to the Bar of the Inner Temple, and elected Conservative MP for the borough of Cambridge. In 1870, he was appointed by Disraeli as the Conservative Party’s central agent, when he did much to modernise the Party administration and to support Disraeli’s position as leader. Subsequently, he built up an extensive legal practice as Queen’s Counsel, received a knighthood in 1886, and held successive government appointments

---

313 Appropriately so, for his father had been a prominent Orcadian, a popular writer and, for a time, provost of Kirkwall.
315 Thompson (1910), pp.40, 59, 76; Chisholm (c.1958). Some of Chisholm’s dates, given above, differ from Venn & Venn (1940).
as solicitor-general, parliamentary under-secretary at the India Office, and financial secretary to the Treasury. Disappointed not to be put in charge of the Education Act of 1902, he resigned to campaign for social reform and improvement of the health of schoolchildren. As MP for Cambridge University during 1891–1906, he frequently attacked the government, and sat as an independent for his last three years.\(^{316}\)

Penzance-born Leonard Henry Courtney (2nd, 1855) became a Lincoln’s Inn barrister but rarely practised law, instead preferring journalism. During 1856–81, he was a leader-writer to The Times newspaper, penning around three thousand articles with a Liberal political slant. During 1872–75, he was also professor of political economy at University College, London. As Liberal member of Parliament for Liskeard (1876–85) and Bodmin (1886–1900), both in Cornwall, he was often at odds with the Government over his support for proportional representation and women’s suffrage, and his opposition to imperialist expansion in Africa. He “often irritated the Commons by his portentous and long-winded speeches, which reflected the worst features of his experience as a leader writer and professor.” But he was an able administrator, who held posts under W.E. Gladstone during 1880–84 as under-secretary for the Home Office and for the Colonies, and financial secretary to the Treasury. He then served as deputy Speaker from 1886 until 1892. He was appointed to the peerage in 1906, becoming Baron Courtney of Penwith.\(^{317}\)

John Rigby (2nd, 1856) became a Queen’s Counsel in 1881, and was a member of Parliament during 1885–86 and 1892–94: during the latter period, he held the legal posts of Solicitor General, Attorney General and Lord Justice of Appeal. He received a knighthood in 1892.

Charles Abercrombie Smith (2nd, 1858) was one of the Peterhouse Scots, born in Glasgow and an M.A. of Glasgow University before attending Cambridge. After a brief period as a fellow of Peterhouse, he went to Cape Province in southern Africa, where he held a series of important administrative posts.\(^{318}\)

Rather later, John Fletcher Moulton (1st, 1868) had a distinguished legal career. After some years as a mathematics lecturer and assistant Tutor of

\(^{316}\) Feuchtwanger (2004).

\(^{317}\) Matthew (2004).

\(^{318}\) Member of the Cape Legislative Assembly (1866–75), Commissioner of Crown Lands and Public Works (1872–75), Controller and Auditor General (1875–1903), Vice-Chancellor of the Cape University (1877–79, 1905–09), and Chairman of the Civil Service Commission (1887–1910). He married late, in 1897, at the age of sixty-three, and died aged eighty-five at Wynberg, near Cape Town.
Christ’s College, he was called to the Bar in 1874 and was intermittently a member of Parliament for various constituencies. He was knighted in 1906 and served as a Judge to the Court of Appeal for the next six years. He was then made a life peer and, during 1912–21, was a Lord of Appeal in Ordinary and a member of the Judicial Committee to the Privy Council.

It is surely no coincidence that several of the above lawyers and politicians held finance-related posts, for which a high level of numeracy was required. Others who did so were the mathematician J.J. Sylvester (2nd, 1837), who during 1844–55 was actuary and later de facto chief officer of the Equity and Law Life Assurance Society; and the barrister and actuary Thomas Bond Sprague (1st, 1853), a fellow of St John’s until 1860, who became manager of the Scottish Equitable Life Assurance Company and who wrote several works on life insurance.

As the reputation of the mathematical Tripos grew, so too did the demand for Cambridge-trained scholars to fill teaching and academic posts throughout the country and in the Colonies. Once Cambridge graduates were installed in schools, universities and colleges elsewhere, it was natural that they should encourage their own best students to follow the same path. This in turn benefited Cambridge, providing a regular source of talent, sometimes from parts of the United Kingdom that had previously been under-represented. Furthermore, those students who arrived with a prior university education (mainly from Scotland or from University or King’s Colleges in London) had an intellectual maturity greater than that of most undergraduates. With this advantage, it is not surprising that many did well. Some Cambridge colleges were more influenced than others, as new students tended to follow in the footsteps of their teachers.

Chapter 9 surveys the colleges and universities in England, Scotland, Ireland and overseas. In addition, Cambridge wranglers held key appointments at leading schools, fostering mathematics and recommending Cambridge to their best pupils. For instance, J.H. Evans (3rd, 1828), C. Pritchard (4th, 1830), A. Barry (4th equal, 1848) and J.M. Wilson (1st, 1859) were headmasters at Sedbergh, Clapham Grammar School, Leeds Grammar School and Clifton College respectively; J.A.L. Airey (2nd, 1846) taught at Durham School and the Merchant Taylor’s School in London; and R.B. Mayor (3rd, 1842) and C. Elsee (3rd, 1855) were long-time mathematics masters at Rugby school. Other wranglers, such as H. Moseley (7th, 1826), B.M. Cowie (1st, 1839) and W. Baily (2nd, 1860), served as Government inspectors of schools.

As well as the direct educational benefit of studying at Cambridge, one must not forget the parts played in academic and other appointments by personal acquaintance, close intellectual contacts, political affiliation and, occasionally, downright nepotism. In these regards, the dominance of
Cambridge wranglers became virtually unassailable in mathematics and natural philosophy. Sometimes, the academic network was reinforced by marriage to relatives of friends, colleagues or teachers—a natural enough consequence of the difficulty of meeting female company in male-dominated Cambridge. To mention just a few, Harvey Goodwin married a niece of Joshua King the Lucasian professor of Mathematics; E.J. Routh married a daughter of the Astronomer Royal G.B. Airy; P.G. Tait married a sister of his friends J. and W.A. Porter; the astronomer Robert Main married a sister of his Queens’ College contemporary, Philip Kelland; the Irishman G.G. Stokes married the daughter of T.R. Robinson, astronomer at Armagh Observatory; John Couch Adams married a close friend of Stokes’ wife; and William Whewell’s second wife was the widowed sister of R.L. Ellis. One notable exception was Archibald Smith’s objection to his sister Sabina’s accepting a proposal of marriage from William Thomson. She turned him down, Thomson soon afterwards married his cousin Margaret Crum, and Sabina Smith rued her decision.319

The Anglican Church at Home and Abroad

The near-monopoly of Oxford and Cambridge Universities (or rather their constituent colleges) on appointments to the Anglican Church has already been mentioned. Because of the idiosyncratic nature of the Cambridge system, many leading Anglican churchmen at home and abroad had considerable mathematical accomplishments, at this time as at no other. In addition to the six Wren Library album subjects who became bishops—Barry, Colenso, Cotterill, Goodwin, Mackenzie and Philpott—two others among the top three wranglers were C. Perry (1st, 1828), Bishop of Melbourne, Australia, and R. Rawle (3rd, 1835), Bishop of Trinidad.

No fewer than twenty-seven Cambridge graduates from the twenty-three years 1828–50 went on to become bishops. Of these, eleven were wranglers, eleven were Senior Optimes and four were Junior Optimes.320 Several but by no means all the bishops who got undistinguished mathematical degrees did well in the Classical Tripos. Between them, they held fourteen bishoprics in

320 Cambridge University Calendar 1909–10, pp.229–251. Only one did not gain mathematical honours: as the son of a peer, Lord A. Hervey was exempt from the Tripos examinations. In 1830 he gained sixth place among those awarded a First Class in the Classical Tripos, and later became Bishop of Bath and Wells.
Britain and fifteen overseas. The overseas bishops covered much of the world: Melbourne, Sydney, Newcastle and Tasmania in Australia; Auckland in New Zealand; Grahamstown, Natal, “Central Africa” and Sierra Leone in Africa; Madras and Calcutta in India; Rangoon in Burma (now Myanmar); Trinidad in the Caribbean; “Mid-China” in the Far East; and Honolulu in the Pacific.

This was a time of rapid expansion of the Anglican Church overseas. Towards the end of the eighteenth century, the Evangelical wing of the established Church took a belated interest in missionary activity in the Colonies, particularly India, Africa and the Caribbean, which had previously been pioneered by Methodists and Baptists. The bishopric of Calcutta was established in 1814; those of Jamaica and Barbados in 1834; and the first Australian bishop was appointed in 1836. A Colonial Bishoprics Fund was founded in 1841, and a large donation of 1847 led to new sees in Australia and the first in southern Africa, at Cape Town. Appointed to Cape Town was Robert Gray, an Oxford graduate, who features below.

In 1853, two further African bishoprics were created at Grahamstown and at Natal. Three of our wranglers were involved in these two appointments: John William Colenso (2nd, 1836) was appointed at Natal; Harvey Goodwin (2nd, 1840) turned down that at Grahamstown; and, three years later, Henry Cotterill (1st, 1835) was appointed there, having already served for ten years as a chaplain at Madras in India. Then, in 1861, Charles Frederick Mackenzie (2nd, 1848) was appointed the first Missionary Bishop of Central Africa. Also in India was John Henry Pratt (3rd, 1833), for many years the Archdeacon of Calcutta.321

The Anglican Church, never cohesive, was riven with factions having differing agendas. Relations with dissenters and with the Roman Catholic Church were never easy. High and low church factions squabbled about the conduct of the liturgy. Whereas Cambridge mostly tended towards the Evangelical wing of the Church, then more liberal and tolerant, Oxford went in the opposite direction, where the high-church Tractarian (or Oxford) Movement advocated rigid church discipline and strict adherence to the liturgy. One of the Oxford Movement’s leading lights, John Henry Newman, caused a furore by converting to Catholicism and later becoming a Roman Catholic bishop and cardinal. At the opposite extreme, Charles Simeon was a celebrated Evangelical, who ministered at Cambridge’s University Church of the Holy Trinity for fifty-three years, until 1836.

321 Goodwin is discussed in Chapter 8 and the others in Chapter 10.
Of particular relevance to the present work is the protracted debate on “science and religion”. How did theologians react to new scientific discoveries that raised large questions over traditional interpretations of the Bible? And how did the scientists, themselves mostly devout Christians, engage in the debate? Many of our wranglers were prominent participants: they include Hopkins, Pratt, Birks, Colenso, Goodwin, Cotterill, Stokes, Thomson and Tait, and their involvement is discussed later. First, it is necessary to sketch the origins of the controversy.

All students at Cambridge then studied Paley’s *Evidences of Christianity*, first published in 1794, which laid emphasis on miracles as evidence of Divine intervention. And most of the general population believed, and were encouraged to believe, in the literal truth of the Bible. Many accepted the whole work as divinely inspired—even in translation—and so free from all error. But astronomy had long since discredited the Biblical description of the Earth as the fixed centre of the Universe (though then still the official view of the Roman Catholic Church); and geological evidence for the extreme age of the Earth made the Biblical estimate of a mere six thousand years untenable. Though estimates of the age of the Earth still varied greatly, all were in millions, not thousands, of years. Another great challenge came around 1860, with the work of Darwin and Wallace on evolutionary biology, which impinged on the nature of life and the development of mankind itself.

The theological arguments were explored in a collection of seven long *Essays and Reviews* (Temple et al. 1860) by Frederick Temple, Rowland Williams, Baden Powell, Henry Bristow Wilson, Charles W. Goodwin, Mark Pattison and Benjamin Jowett. In the words of one modern commentator:

> Controversy, especially religious controversy, was the great spectator sport of Victorian England. . . . *Essays and Reviews* . . . brought to England its first serious exposure to German biblical criticism. It evoked a controversy which included articles in newspapers, magazines and reviews, clerical and episcopal censures, a torrent of tracts, pamphlets and sermons, followed by weightier tomes . . ., prosecution in the ecclesiastical courts, appeal to the highest court, condemnation by the Convocation of the clergy, a debate in Parliament. . . . The controversy lasted four years, drawing on the resources of church and state, representing a crisis of faith contemporary with that provoked by Darwin’s *Origin of Species* but more central to the religious mind, indeed ‘the greatest religious crisis of the Victorian age.’

---

In his essay *On the Interpretation of Scripture*, Benjamin Jowett, the Regius Professor of Greek at Oxford, chided theologians for failing to apply the same philological rigour to Biblical texts as was routinely employed to classical works. He warned against the dangers of preachers who wish “to awaken not so much the intellect as the heart and conscience”, and overstep the limits of their knowledge in interpreting Scripture. Regarding those contested “scientific facts with which popular opinions on theology often conflict”, it is “a false policy to set up inspiration and revelation in opposition to them. . . . Shall we peril religion on the possibility of their untruth?” The meaning of Scripture, often obscure, had been interpreted, often anachronistically, by each Christian faith in accordance with its own beliefs. But “Scripture has one meaning—the meaning which it had to the mind of the prophet or evangelist who first uttered or wrote, to the hearers or readers who first received it.” Accordingly, it should not be expected that the Bible accurately represents physical facts unknown at that time. Controversies would come and go: while some still raged, “A silence is observable on some other points of doctrine around which controversies swarmed a generation ago.”\(^{323}\)

In his essay entitled *On the Study of the Evidences of Christianity*, Oxford’s Savilian Professor of Geometry, Baden Powell, contested the place of miracles as signs of Divine Revelation. The evidence for many supposed miracles was slight and attributable to credulous witnesses or even fraud: though many had been attested to in the past, few had been reported in modern times. Though some recorded events could not be explained by known laws, this was not necessarily evidence for the temporary suspension of these laws by a supernatural agent. For many, belief in miracles followed as a result of belief in an Omnipotent God; but others who supported the idea of Divine perfection rejected this idea of occasional intervention, the world being supposed perfect at the outset. Still others supposed that all of nature was a continuing miracle, maintained by Divine action “like a mill, which cannot go on without continual application of a moving power!” With such uncertainty, the “evidence of miracles” should be assigned a much lower place than “the conviction of real faith.”\(^{324}\)

Astronomy, geology, and most recently, evidence for “the antiquity of the human race, and the development of species” had forced a dissociation of the spiritual from the physical: they were in clear contradiction to literal interpretation of Scripture. Baden Powell is unequivocal in his enthusiasm for “Mr. Darwin’s masterly volume on *The Origin of Species* by the law of ‘natural

\(^{323}\) Temple *et al.* (1860), quotations from pp.333, 349, 378, 422.

\(^{324}\) Temple *et al.* (1860), pp.106–114, 126, 135.
The "Cambridge Stamp"

selection’ . . . : a work which must soon bring about an entire revolution of opinion in favour of the grand principle of the self-evolving powers of nature.” And he goes on to criticise a theory of civilization by Archbishop Whately, who had proposed that “the use of fire, the cultivation of the soil and the like, were Divine revelations” to primitive peoples. Baden Powell countered that, if this was the case, so also must be printing and steam in recent times; and, if the boomerang was divinely communicated, so too must have been the gyroscope.325

Charles Wycliffe Goodwin’s essay On the Mosaic Cosmogony addressed the creation story of the book of Genesis in the light of modern science. Genesis plainly said that the Universe was created in six days with a fixed Earth at its centre, a view that was no longer tenable. Goodwin suggests that: “It would have been well if theologians had made up their minds to accept frankly the principle that those things for the discovery of which man has faculties specially provided are not fit objects of a divine revelation.” But theologians had instead attempted to rescue the Biblical version of creation by interpretations and equivocations such that: “The plain meaning of the Hebrew record is unscrupulously tampered with, and in general the pith of the whole process lies in divesting the text of all meaning whatever.” It was evident on philological grounds that Genesis gave two distinct accounts of creation: that of the first chapter and the first three verses of the second was clearly by a different hand than the version given in the second chapter from verse four onwards. The former was clear and precise in its statements, allowing no mystical or symbolical meaning; whereas the second gave “at least some ground for the supposition that a mystical interpretation was intended to be given to it.”326

Recent defences of the Genesis accounts had been given by the Scottish theologian Thomas Chalmers, and by William Buckland, Oxford fellow, geologist and dean of Westminster. Their cases were built on taking the six biblical “days” of creation to be preceded and separated by vast periods of time, and on implausible reinterpretations of perfectly clear Biblical statements. As for Buckland’s view that the object of the Biblical account was “not to state in what manner, but by whom the world was made”, Goodwin objects that it was incredible that the writer had no intention that his words should be taken

325 Temple et al. (1860), pp.129, 139–141.
326 Temple et al. (1860), pp.209–211, 223. C.W. Goodwin was the Egyptologist brother of Harvey Goodwin (2nd, 1840), who features in Chapter 8. He had attended St Catharine’s College, Cambridge, graduating in 1838 as ninth senior optime in the Mathematical Tripos and with a first class in the Classical Tripos.
literally. Other geologists had proposed an “entirely mythical and enigmatical sense to the Mosaic narrative”; and some theologians and geologists supported the view that the “days” of creation might themselves be periods of indefinite length.327

John Henry Pratt, the Archdeacon of Calcutta, had already weighed in with criticisms of even this last interpretation, which did not accord with what he believed to be the appearance of several distinct periods of animal and vegetable existence. And similar objections had been raised by the Scottish geologist Hugh Millar. In Goodwin’s view, the theories of Buckland, Pratt and Miller “divest the Mosaic narrative of real accordance with fact.” The upholders of each theory had evaded “the plain meaning of language, to introduce obscurity into one of the simplest stories ever told, for the sake of making it accord with the complex system of the Universe which modern science has unfolded.” Goodwin concludes that the “consistency and grandeur” of the Mosaic account “may be preserved if we recognise in it, not an authentic utterance of Divine knowledge, but a human utterance, which it has pleased Providence to use in a special way for the education of mankind.”328

The resulting controversy gripped the nation. Among the first attempts to refute Essays and Reviews was T.R. Birks’ (2nd, 1834) The Bible and Modern Thought; and J.H. Pratt prepared several new editions of his book to disagree with Essays and Reviews and with later unorthodox writings.329 One of the essayists, Rowland Williams, was prosecuted for heresy; and so too would have been Baden Powell, but for his death soon after his essay appeared. Another furore soon followed over the writings of J.W. Colenso: this is discussed in Chapter 10. But, gradually, theologians were forced to change and refine their positions, first to regard not all the Bible, but only those parts directly concerned with doctrine, as a Revelation from God that should be beyond question; and then to accept that the Bible is a mixture of theology, poetry and history in which the Genesis stories should be interpreted figuratively rather than literally. Through such reinterpretations, “the heresies of the Essayists later became acceptable, then commonplace, then passé.”330

327 Temple et al. (1860), p.236.
328 Temple et al. (1860), pp.237, 250, 253; Pratt (1856). On Pratt, see also Chapter 10, pp.255–258.
329 Birks (1861), Pratt (1856) and later editions to 1872.
330 Altholz (1994), p.2. The collision of geology and theology is examined by Gillispie (1951), and there is a huge modern literature on the impact of Darwinism. For a recent account of the ongoing science–faith debate, see e.g. Alexander (2001).
Mr Hopkins' Men
Cambridge Reform and British Mathematics in the 19th Century
Craik, A.D.D.
2007, XIV, 410 p. 78 illus., 48 illus. in color., Hardcover
ISBN: 978-1-84628-790-9