CHAPTER 9

Scientific biography in the periodical press

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Following the fresh impetus imparted to biography by the writings of Johnson and Boswell, the 'lives' of eminent individuals streamed from the presses throughout the nineteenth century. This thirst for biography created the expectation that a famous person's 'life' would appear in the bookshops soon after the mourners had returned from the funeral. Not satisfied with a single volume commemorating a favourite statesman, poet, or scientist, biographers often indulged their readers with two - and sometimes more - bulky volumes filled with copious information about their subject's life. As Edmund Gosse noted, in England we 'bury our dead under the monstrous catafalque of two volumes (crown octavo). Recognizing the popularity of the genre but the high cost of such octavo volumes, some publishers launched cheap editions in the hope of tapping a less affluent readership and increasing sales. For example, the Society for the Diffusion of Useful Knowledge published a number of low-priced biographies and in the 1840s commenced an over-ambitious project for an extensive biographical dictionary. Publishers, authors, and editors also collaborated in producing collected biographies, often spanning a number of volumes. Thus Lardner's 'Cabinet Cyclopaedia', which retailed at 6 shillings per volume, included the lives of 'the most eminent literary and scientific men of Great Britain' (three volumes), eminent lawyers (1 volume), British admirals (three volumes), military commanders (three volumes) and eminent British statesmen (seven volumes).

At the apogee of the Victorian cult of biography stands the Dictionary of National Biography, which provided an magnificent overview of Britain through the lives of its many eminent public figures. The initial series of sixty-three volumes was published between 1885 and 1900. Biographies also frequently prefaced other types of book; for example, an edition of a poet's writings or a scientist's collected papers. Encyclopaedias likewise often carried large numbers of biographical entries; although biography was omitted from the first (1771) edition of the Encyclopaedia Britannica, potted biographies accounted for a substantial proportion of articles in the Victorian editions. Numerous diaries, journals, and collected letters, containing undigested biographical material, were also published, thus adding to the market in other people's 'lives'.

The size of the market for biography can be gauged by analysing the Nineteenth Century Short Title Catalogue (NSTC), which indicates that some 50,000 books of biography were published between 1801 and 1870. While the absolute number of biographies is impressive, it is not very informative. Of greater significance is the market share achieved by biographies, which was approximately 6.7 per cent. The NSTC data also indicate that the annual production of biographies rose fivefold over these seven decades, from about 250 at the century's beginning to 1,200 by the late 1860s. Thus by the latter date some twenty-five 'lives' (or collected 'lives') were published every week, and the rate of publication rose even higher by the century's end.

The NSTC data also suggest that the popularity of biography relative to all other subject areas was fairly constant, but increased slightly over the period 1801 to 1870. Most interestingly, literary biography, which is often taken as the thoroughbred in the stable of biographies, increased less dramatically over this period than did other types of biography. Among the larger categories, religious biography increased significantly, as did the rather unmanageable category comprising 'Biography - History, Travel, Other; Heraldry; Genealogy; Wills'. Yet the most impressive increase was in the lives of engineers, doctors, printers, and agriculturists (again a rather amorphous grouping), while scientific biography and collective biography (which also includes biographies of bibliographers, librarians, and journalists) also grew relative to the overall book trade and expanded significantly faster than literary biography. Of particular interest are scientific biographies, which increased from seven titles a year at the beginning of the century to about forty in the late 1860s. Although these conclusions are tentative and the data require closer analysis, they indicate some interesting historical changes in the patterns of the production and reading of biography. To concentrate on books, however, is to overlook another major source for biographies.

PERIODICALS: 'CAPSULE LIVES'

While readers avidly consumed books of biography, the periodical press provided a further rich and diverse source of biographical information. As Richard Altick has commented, from the 1830s the condensed biographical narrative was a journalistic staple. The Penny Magazine and Chambers's
that reviewed Brewster's *Memoirs of Newton* indicates that the circulation of reviews vastly outstripped the distribution of the book itself. Moreover the reviews published 1855 considerably outstripped the sales over the previous quarter century of his earlier *Life of Newton*. In these cases, and many others, the life of a scientist was more likely to be known from reviews in the general periodical press than from book-length biographies.

**Modes of Biographical Writing in the Nineteenth Century**

Not only did biography become a highly popular genre but several contending forms of biographical writing were widely deployed in nineteenth-century Britain. Saints' lives provided a traditional model for biography (and one that continued in various forms throughout the nineteenth century, including the 'testimonies' published in religious magazines). In recounting such lives, little attention would be paid to the saint's personality or the facts of his life; instead the aim was to raise the reader's level of spiritual awareness through contemplating the saint's trials, tribulations, and extraordinary deeds. However, although one might aspire to live a spiritual life by imitating the saint, the saint's life is, by definition, unlike that of an ordinary mortal. By contrast, during the sixteenth century and increasingly during the seventeenth, writers recorded the lives of living or deceased individuals. Although authors often combined fact with anecdote and fantasy, veracity was increasingly acknowledged as both necessary and desirable. The emphasis on truth was further nurtured by the publication of diaries recording everyday events, Samuel Pepys's being the most famous.

During the eighteenth century Enlightenment values impinged on biography; biographical writing became less concerned with denoting the peculiarities of a particular individual than with using the individual's life to provide insights into the human mind and behaviour. In reaction to this view of human nature, biographers influenced by Romanticism provided a crucially important change in outlook and helped biography emerge as a distinct literary genre. The focus was now on the subject's creative impulse; moreover, since a person's literary or artistic creation was a product of his or her personality, biography had to combine both creator and creation into a single narrative. Thus a poem was a highly personalized creation and an intimate part of the poet's unique qualities. Under the aegis of Romanticism, and particularly of Thomas Carlyle's *On Heroes, Hero-Worship and the Heroic in History* (1840), many British biographers portrayed their subjects as heroes whose extraordinary qualities were intended to inspire the reader.
However, both Romantic and heroic biographies were open to the criticism that they created the cult of the extraordinary. In reaction, much nineteenth-century biography was factual and rather prosaic. One particularly interesting variety of anti-heroic biography that flourished from mid-century came to be associated with Samuel Smiles. In such works as *Self-Help, with Illustrations of Character and Conduct* (1859) and *Duty: With Illustrations of Courage, Patience, and Endurance* (1880) he urged his readers to pursue self-improvement, and social and economic advancement, by dint of their own efforts. Smiles's writings contained copious examples of biographies illustrating this utilitarian theme. His paradigmatic examples of success were not blessed with genius or social advantage, but they possessed 'Courage, Patience, and Endurance' in large measure.

The critical reviewing function performed by the periodical press may have encouraged biographers to pay increasing attention to truth, in terms of both correct facts and valid judgements. In the nineteenth century, biographers were increasingly expected to recount with factual accuracy what their subjects actually said, did, or wrote. Yet, despite this emphasis on veracity, social convention decreed that, in contrast to its eighteenth-century predecessor, nineteenth-century biography should delicately skirt round such awkward issues as their subjects' sexual predilections, drunkenness, or debauchery. Although writers of 'advanced opinion' increasingly reflected on the topic of sexuality, they were reacting against a deadening sense of propriety and respectability that ensured that sexuality had no place in most biographies. With a few interesting exceptions, the proprietors of the book trade and the periodical press conspired in creating biographies that not only valued truth but also massaged it when it challenged conventional religious, social, and family values.

The main themes governing nineteenth-century biography were frequently employed in the sub-genre of scientific biography. The Romantic, the heroic, the utilitarian, and 'Smilesean' modes were all readily adapted in narrating the lives of scientists. The scientist could be portrayed as the Romantic genius, the heroic discoverer, or the exemplar of self-improvement. Likewise, the scientist's work could be depicted in any of a number of ways; for example, as a creative act or as a response to utilitarian market forces. In line with convention, any seamy aspects of a scientist's life could usually be overlooked.

Yet scientific biography also addresses three issues that are generally less relevant to the lives of novelists, statesmen, and admirals. First, with few exceptions, scientists were not readily recognized as celebrities by the general public. As the author of a biographical sketch of Lord Kelvin in the *Review of Reviews* lamented in 1893, scientists are rarely known outside their professional circle and the public much prefers to read about the latest successful novelist or 'a boxing kangaroo'. Even among scientists Kelvin was relatively invisible since, unlike Darwin, he had not expounded a revolutionary theory nor challenged religious orthodoxy. That he was a Scot added further to his invisibility to Londoners. In demonstrating Kelvin's invisibility this particular biographer described a photographer's window in London in which photographs of well-known public figures were displayed. Although Kelvin's photo could be found in photographers' windows in Glasgow and Edinburgh, nevertheless it was absent from the London display. As Richard Noakes points out in chapter 4, the number of scientific celebrities was small but it increased significantly during the closing decades of the century. Among this select band were Darwin and Faraday, whose portraits were widely distributed and who were depicted in *Punch* and in other magazines. A surprisingly early portrait of Faraday was published in the *Tory Fraser's Magazine* for 1836, which was probably published to acknowledge Faraday's (unintended) support of the Tories (fig. 9.1).

Scientific research was also becoming increasingly esoteric and, despite the impetus of scientists and some journalists, scientific innovations were generally less well known to the public than were the creations of artists, novelists, and engineers. Although some scientists were successful in disseminating their achievements to a wider audience, the public was excluded from the primary locus of scientific activity – the laboratory. Finally, while biographies of poets, for example, written in the Romantic mode sought to portray the poet arising from the poet's unique personal qualities, the connection between personality and product is far more difficult to sustain in the case of scientists. Although some biographers sought to make this connection, many scientific biographies – and not only nineteenth-century ones – demarcated the subject's life and work within separate chapters, thereby accentuating this disjuncture.

Scientific biography entered the periodical frame in a number of different contexts, which I shall group under four headings and discuss respectively in the ensuing sections of this chapter. The first is the obituary notice which by convention contained a biography of the deceased. Second, following the publication of a substantial biography of a scientist the periodical press generally published a flurry of reviews that raised public awareness of the subject's life and work. A third form of biography was the 'biographical sketch'. General periodicals often carried such sketches, which were frequently – but not always – published to coincide with a
centenary or other notable occasion. Finally, we encounter passing references to specific events in the lives of scientists. These references were either within articles on other subjects or acted as ‘fillers’ – an anecdote about Newton or Davy might be used to fill the small space remaining at the bottom of a column of print.

OBITUARIES

The death of a successful scientist usually generated a spate of obituary notices in both the general and the scientific press, the number of obituaries being a rough gauge of his or her perceived eminence. Although the proceedings of scientific societies rarely published other forms of biography, the death of a member was often noted, and in some cases an obituary published. For example, while the Philosophical Transactions of the Royal Society of London did not include obituaries, the Proceedings of the Royal Society of London (first published in 1830) contained obituary notices of deceased Fellows. A similar role was fulfilled by the Monthly Notices of the Royal Astronomical Society. Scientific periodicals that were not tied to societies, such as Nature and many of the specialist journals, also carried selected obituaries. These notices, usually written by a scientific colleague, briefly summarized the life of the deceased but generally paid far greater attention to his – rarely her – scientific achievements. However, in the general periodical press obituaries of scientists tended to concentrate on the subject’s life and merely summarized the scientific achievements by employing terms that would be accessible to the non-specialist reader.

Special-interest and denominational periodicals also carried obituaries of scientists whose life or work fell within the journal’s ambit. For example, the Academy, which sought to encourage British readers to become more aware of significant events on the Continent, included brief obituaries of Guglielmo Libri, the Italian mathematician, and the German physicist Heinrich Gustav Magnus. Denominational periodicals celebrated those who shared their religious commitments; thus the Youth’s Magazine; or, Evangelical Miscellany published in 1837 the funeral oration for the chemist Edward Turner, and the Quaker press carried obituaries of the eminent chemist John Dalton following his death in 1844.

The obituaries that flowed from the presses following the death of Michael Faraday on 25 August 1867 illustrate both the wide and rapid dissemination of his ‘life’ and the construction of several parallel ‘Faradays’. Over the next two or three days the dailies published anonymous notices, often with short biographies. While most were rather prosaic and factual,
the obituary in the *Daily News* was considered particularly insightful and was reprinted in a number of other periodical publications. The scientific and medical weeklies, such as the *Mechanics Magazine*, *Chemical News*, and the *Lancet*, soon carried obituaries, as did such general weeklies as the *Illustrated London News* (including a portrait), the *Athenaeum*, *Punch* (in poetic form), and the *London Review*. Obituaries also appeared in several religious weeklies, especially periodicals associated with dissent (as Faraday was a Dissenter), such as the *English Independent*, the *Inquirer* (which drew on the notices in the *English Independent* and the *Daily News*), and the *Nonconformist* (which borrowed heavily from the *Examiner*). Most of these articles had clearly been composed at short notice by staff writers who were pleased to recycle material already in print, especially the well-written and informed obituary in the *Daily News*. While most of the dailies and weeklies, which were expected to respond rapidly to contemporary events, carried obituaries of Faraday, a far smaller proportion of monthlies and quarterlies published articles marking Faraday’s passing. Among such publications were the *Pharmaceutical Journal*, the *Gentleman’s Magazine*, the dissenting *British Quarterly Review*, *St. James Magazine*, and *Belgravia* – the last two being directed principally to affluent London women, some of whom would have heard Faraday lecture at the Royal Institution. Thus the obituary notice was most newsworthy soon after the subject’s death but was no longer appropriate after a few weeks, except among specific interest groups.

Despite some examples of scissors-and-paste journalism, the obituary notices carried by the monthlies and quarterlies were mainly well-constructed, original articles that offered interestingly divergent accounts of Faraday, his science and its significance. While some obituaries concentrated on the basic facts of his life and on his acknowledged ability as a lecturer, others dilated on his personality. In many cases the Faraday they presented was based on personal experience and on widely circulating gossip. These articles – some of which were signed – praised his honesty, his simplicity, and his dedication to truth. The anonymous obituarist in the *London Review* was particularly fulsome, informing his readers that Faraday considered that ‘the servants of science should be distinguished by a loftier aim and a purer life than the generality of men’. Since Faraday’s life in science had exemplified these principles, the writer managed to draw a connection between his personality and the specific way he pursued science. His life also showed that ‘[t]he root of all true success lies in sincerity and love’. These noble qualities were expressions of Faraday’s sincere Christian beliefs.

Although a few obituaries avoided the subject of religion altogether – especially the over-formal notice in the *Gentleman’s Magazine* – most emphasized his deep religious feeling. Some writers even acknowledged his membership of a peculiar, dissenting sect – the Sandemanians – to which he had belonged for nearly half a century. In particular, the *Nonconformist* stressed that he had been a member of ‘this despised and dwindling community to the last’. While ignoring his strong non-conformist principles, most periodicals recruited Faraday in support of general Christian values and virtues. Thus he was widely portrayed as a pious Christian who had combined an exemplary religious life with important, innovative scientific research. A few obituarists also explicitly drew connections between his Christianity and his scientific pursuits. For *Leisure Hour* – published by the evangelical Religious Tract Society – he was ‘The Christian Philosopher par excellence’, while according to the *London Review*, he pursued his [scientific] investigations with the modesty, the candour, and the reverence of a Christian. Although subsequent writers expanded on this theme, these obituary notices formed part of the emerging hagiographical literature that created St Michael Faraday and raised his science to a pious vocation. In keeping with the genre’s contemporary norms, his obituarists could find no serious flaw in his character.

In contrast to some writers later in the century who portrayed Faraday’s achievements in starkly utilitarian terms, several obituaries depicted him as a disinterested philosopher seeking the truths of nature. ‘In his own person’, wrote one obituarist, ‘he represented rather the philosophical than the utilitarian aspects of science, its love of knowledge rather than its search for practical utility.’ This writer recognized that although posterity would judge Faraday by his discoveries, the man he was honouring exemplified the highest virtues of science. As one of the main aims of an obituary is to sing the praise of the departed in the presence of family and friends, it provides a particularly appropriate locus for exhibiting religious and transcendental themes.

Contemporaries generally cited electromagnetic induction and the laws of electro-chemistry as Faraday’s major scientific achievements, thus ignoring his more speculative ideas, such as field theory. Yet there was considerable divergence among obituarists over how to represent Faraday as a discoverer. For some he was the son of a poor ironsmith who had reached the pinnacle of British science by dint of hard labour. His accomplishments resulted from long hours spent in the laboratory and the rigorous application of the inductive method. His industry and perseverance allowed these writers to cite Faraday as a paradigmatic example of Smilesian self-help. Thus, according to the *Gentleman’s Magazine* he was ‘entirely a self-made man’, while the *Engineer* branded him ‘an example of what self-help can make
a man. Others deployed a far less prosaic approach and instead adopted a Romantic perspective stressing his genius and transcendental qualities. One obituarist, who had known Faraday well, likened him to Goethe, while another described him as a ‘chosen priest of nature’ who at birth had received from a ‘beneficent fairy . . . the mysterious baptism of genius’. In these contrasting examples we see how conventional biographical tropes were deployed in narrating Faraday’s life.

Many of the obituaries also contained personal information connecting the writer to Faraday. Thus the chemist John Scoffern, who contributed the obituary in *Belgravia*, gained some kudos and justified his ‘life’ of Faraday by claiming that he had been well acquainted with his eminent subject. Benjamin Abbott, writing in the *Friends’ Quarterly Examiner*, reflected on their friendship stretching back over half a century to their youth – probably the longest association of any of Faraday’s obituarists. Such obituaries were often sprinkled with anecdotes, personal assessments of his character, and evidence of his success as a lecturer. The appearance of obituaries in the periodical press also sometimes prompted letters from readers containing reminiscences of their meetings with Faraday. While Faraday had taken great care in fashioning his public persona, its main features were posthumously confirmed in the periodical press and disseminated to a far larger audience than he could address in the theatre of the Royal Institution.

Moreover, in the days and weeks after his death the periodical press played a crucial role in fixing images of Faraday in the public mind.

**REVIEWS OF BIOGRAPHIES**

Writing in *Fraser’s Magazine* for 1870, the lawyer William Frederick Pollock noted that with the passing of years ‘[p]ersonal recollections gradually fade away; the characteristic anecdote ceases to circulate . . . It is therefore a duty, no less of justice to the memory of the individual, than to the community for whose benefit the example of a great and good life is preserved, that provision should be made to keep the knowledge of it alive.’ In his opinion the circulation of biographies was a duty and it was therefore incumbent on the periodical press to carry extensive accounts of recently published biographies. According to this view, anecdotes and personal reminiscences fade with the passage of time and the published ‘life’ – together with the reviews it inspires – increasingly gain authoritative status. Biography becomes the principal source of collected memory.

The appearance of a new substantial biography would set the periodical press in motion with a flurry of reviews. Since reviews assisted sales of the original work, publishers were keen to distribute review copies to as many periodicals as possible. If the book’s publisher also owned periodicals, then pressure could be exerted on editors not only to review the book but to review it extensively and glowingly. Public awareness of a new biography was also increased by advertisements, that were usually printed on the endpapers of periodicals. Through reviewing and advertising the periodical press became an arm of book publishing. As the earlier examples of Newton’s biography showed, the periodical press enabled knowledge of the life of an eminent person to reach an audience far beyond the readership of the full biography.

Although reviews of scientific biographies often appeared in the scientific press – in such commercial journals as *Nature* and *Knowledge*, but rarely in the publications of scientific societies – the general periodical press frequently reviewed such biographies, sometimes at considerable length. By the closing decades of the century a biography of a reasonably well-known scientist would receive twenty or thirty reviews within a year or two of its publication. The quality and length of reviews varied considerably. In some cases the reviewer merely transcribed passages clipped from the biography with a minimum amount of linking material. This gave a wide readership access to the main contents of the biography (as mediated by the reviewer). However, as the century progressed, the scissors-and-paste review became less acceptable, especially in the more costly magazines, and reviewers were increasingly expected to produce original articles that engaged the subject under review. Thus the reviewer could elaborate on issues that particularly interested him or her, or were considered relevant to the target audience. Reviews did not simply reiterate the image of the subject contained in the biography under review, but instead introduced diversity that often reflected the ethos of the periodicals in which they were published.

We can appreciate some of the factors affecting reviewing if we look at the reviews of the two Faraday biographies that appeared within two and a half years of his death, on 25 August 1867. His younger colleague John Tyndall expanded the éloge, which he had delivered before members of the Royal Institution in January 1868, into a small compact volume entitled *Faraday as a Discoverer*, which was published in March 1868. Tyndall’s was a very personal portrait of his friend and mentor. Moreover, under the influence of German Romanticism, Tyndall painted a transcendental Faraday whose soaring achievements were compared to the highest mountains in the Alps. Branding Faraday ‘the greatest experimental philosopher the world has ever seen’, Tyndall portrayed him as a genius, a prophet, and a seer. This picture gained the approval of Faraday’s widow, Sarah, and his unmarried niece,
Jane Barnard, who became the gatekeepers of Faraday's reputation after his death.44

Most reviewers were clearly attracted to Tyndall's story, which, according to one writer, 'has all the charms of a romance'.39 However, a reviewer in the dissenting Eclectic Review was disappointed by the book, which was more of an oration, or eulogy than a proper biography and he looked forward to the publication of a memoir that would do justice to its subject's life and work. Tyndall's slim volume, he complained, also added little to what was already widely known about Faraday's personality. This reviewer, who was clearly appalled by Tyndall's growing reputation as an atheist, also considered that his biography displayed a lack of humility, in marked contrast to the modesty that Faraday himself had evinced. More specifically, Tyndall was criticized for projecting himself in the role of Schiller, in relation to Faraday, who was cast as Goethe.36

In the autumn of the following year Henry Bence Jones, Faraday's physician and the Secretary of the Royal Institution (where Faraday had lived and worked), published his more substantial two-volume Life and Letters of Faraday.37 Unlike Tyndall's personal portrait, Bence Jones's rather prosaic account was intended as the semi-official biography of the great man, sanctioned by his institution, family, and friends. Three parallel themes were maintained throughout: Faraday's personal life, his science, and his correspondence. In contrast to Tyndall's impressionistic sketch, Bence Jones's biography was firmly grounded in the primary sources, including letters, diaries, and lecture notes. Extensive quotations from these sources provided the reader with an entrée into the various facets of Faraday's life, many of which would not have been known outside his small circle of intimates. As one reviewer commented, Bence Jones's 'work reads like an autobiography'.38 Another noted that Bence Jones had not so much provided a life of Faraday as 'an edition of diaries, letters, etc., of the great philosopher, from which we obtain interesting glimpses of his character, and of his peculiar methods of self-culture and study'.39 Bence Jones had succeeded in enabling this reader to gain close access to Faraday.

Since both biographies were first published within thirty months of Faraday's death, notices in the periodical press often continued to be mixed with their authors' personal memories of, and tributes to, the deceased. Yet, the far fuller account of Faraday's personal life in Bence Jones's biography enabled some reviewers to focus on specific biographical themes that they considered important. A striking example appeared in Emily Faithfull's Victoria Magazine, a major voice of the women's movement which promoted the extension of women's education and prospects for employment. Under the title 'Plain Living and High Thinking. Michael Faraday', the reviewer noted that although Bence Jones's biography contained much scientific material that was unlikely to appeal to women, they would nevertheless find the book attractive because it demonstrated Faraday's qualities of nobility, morality, and generosity. Quoting passages from several of the letters published by Bence Jones, this anonymous reviewer engaged the intimate side of Faraday, stressing his moral strength and his determination in following his own noble path in science. But as the article drew to a close the writer directed attention to the issues of overriding concern to readers of the Victoria Magazine. Any woman who tried to follow Faraday in seeking a life in science, complained the writer, would be roundly condemned by society. Some of the familiar objections against women pursuing chemistry were mentioned but quickly dismissed as inessential by the reviewer.40 Thus, perhaps to his surprise, Bence Jones's biography was used and championed by the women's movement. Yet this example shows how reviews of biographies could be deployed for purposes dictated by the editorial objectives of a particular periodical.

While there is no evidence that the writer in the Victoria Magazine had known Faraday, Juliet Pollock, who was married to William Frederick Pollock (cited above, p. 226), clearly did. Her review in the monthly St. Paul's wore together extracts supplied by Bence Jones with her own recollections. Although she had little to say about his science and the basic biographical sketch occupied less than a page, she portrayed Faraday as a genius, a perfect human being, and a Christian. His personality was faultless; he was 'a complete master' at lecturing; he was humorous, simple, sincere, and his 'presence was always stimulating'; he was pious; he was devoted to Sarah. Juliet Pollock's warm and intimate prose helped to paint this luminous portrait, as did the many personal details she added. For example, she informed her reader that when Sarah was suffering from lameness, 'There are some [of us] who will remember how tenderly he used to lead her to her seat at the Royal Institution.'41 Pollock clearly identified herself as a member of the Institution and as an intimate of both Faradays. Some of his light was thereby reflected onto her. Moreover, in her review Pollock transcended Bence Jones's dry prose in order to create an even more angelic Faraday and one that was particularly congenial to her female readership. Together with several similar contributions to the periodical press, her review helped to create and maintain the saintly public images of Faraday that both Tyndall and Bence Jones had also sought to fashion.
Scattered throughout the general periodical literature were numerous sketches of the life and work of individual scientists. Although these sketches were often produced for specific occasions, such as centenaries, some periodicals had a more constant commitment to biography, publishing one or more biographical articles in each number, and even devoting a regular 'slot' to the topic. For example, separate biography sections were included in the *Mirror of Literature*, the *Wesleyan-Methodist Magazine*, and the *Boys' Own Paper*—in the last case under the heading 'Some Boys who Became Famous'. Each issue of the *Review of Reviews* likewise included a 'character sketch'. Most famously, beginning in 1868, the widely selling weekly *Vanity Fair* carried cartoons of eminent people, each cartoon being accompanied by a one-page biographical sketch. Scientists—both amateur and professional—were among those whose lives were recounted in the periodical press. For example, although scientists were far outnumbered by statesmen, lawyers, and novelists, the cartoons carried by *Vanity Fair* included many of the more prominent members of the late nineteenth-century scientific community, such as Thomas Henry Huxley, John Tyndall, George Biddell Airy (the Astronomer Royal), Lord Kelvin, and the physician and physiologist John Burdon-Sanderson and Richard Owen the naturalist.

The early volumes of the *Review of Reviews* contained biographical sketches of several scientists including Lord Kelvin, Thomas Alva Edison—who was unrivalled as a self-publicist—and John Tyndall. The article on Kelvin ran to ten quarto pages printed in double columns and was illustrated by several photographs (figs. 9.2 and 9.3). The author, a mechanical engineer named John Munro who had studied under Kelvin, opened with an apologia—mentioned above, p. 221—for profiling a scientist. He then engaged several themes that deserve our attention. Although Kelvin's innovative scientific ideas and technological advances were discussed, Munro stressed his genius, personal strength, and heroic status. The scientist was thus portrayed as a Romantic figure before a largely non-scientific audience; for example, we are told that his students were treated to 'the rapid medley of bright ideas, invaluable precepts, and sublime speculations, often expressed in eloquent phrases that stuck in the memory as the true romance, the grander poetry of Science'. In sum, Kelvin was a 'really great man... the Napoleon of Natural Philosophy'. While such transcendental qualities were emphasized, the author also stressed certain facets of Kelvin's work and character: he was a powerful thinker and an eminently practical man who had contributed immensely to the development of the telegraph.

Figure 9.2. An intimate portrait of Kelvin at work, J. Munro, 'Character Sketch: August, Lord Kelvin, P. R. S.', *Review of Reviews* 8 (1893), 118. Reproduced by kind permission of Leeds University Library.
and many editors catering for a wide variety of adult readerships stressed the importance of periodicals in the dissemination of knowledge, including biographical knowledge.

Despite the emphasis on celebrities, the periodical press also sometimes focused on the place of science in the lives of people who would not be ranked as scientists. For example, the Wesleyan-Methodist Magazine for 1826 included a moralizing memoir of a fellow Methodist, George Newton of Thorncliffe near Sheffield, who as an apprentice had spent his leisure ‘in the study of Mechanics, Geography, and Astronomy. With much ingenuity he constructed a terrestrial globe, and a sun-dial, which were both very correct.’ Yet these apparently trivial biographical facts were turned to moral purpose. The author proceeded to contrast George Newton’s serious and economical habits with the tendency of many children to waste their pocket money on ‘depraved connexions’ and ‘expensive habits’. As an adult George likewise ‘gratified his love of reading by procuring a choice collection of books on science and divinity’. Thus even an amateur interest in science could be given significance within a specific biographical context. More generally, as Jonathan Topham notes in chapter 3, Methodists placed great emphasis on biography, which formed ‘part of a wider confessional culture’. In charting the ‘spiritual progress of their subjects’ biographers often introduced scientific and medical issues.

PASSING REFERENCES

One of the most fascinating aspects of the general periodical press is the extensive deployment of passing references to scientific issues in non-scientific articles. Such intertextual material sometimes included biographical references, usually relating to well-known or startling aspects of a famous scientist’s life. Writers and readers could thus draw on a common cultural resource. One of the best-known anecdotes about Newton was his observation of the fall of an apple, which (allegedly) resulted in his discovery of gravitation. In 1842 Punch capitalized on this hackneyed anecdote in an article ‘Punch’s Letters to His Son’, in which biography and fantasy were explosively mixed. According to Mr Punch, Newton was drunk when he made his great discovery. On watching the apple fall he was struck by a ‘nascent idea’. However, only after imbibing a few more bottles was he convinced, ‘that not only had the apple spun as it fell, but that the whole world turned round’. Scientific creativity merged with inebriation. In stark contrast to conventional biographical narratives, Newton was no soaring genius but an old soak.
The celebrated events in Galileo's life likewise provided writers with a rich repertoire that could be used constructively in a variety of contexts. For example, a postscript was added to the *Mirror of Literature*‘s astronomy column for January 1827 in which readers were reminded that Galileo had been forced to abjure the Copernican system before the Inquisition. After going through the humiliating ceremony, he stamped with his foot on the earth, saying, *e pur si muove*, “it moves notwithstanding”. With the Catholic question frequently in the news and anti-Catholic feeling running high, writers could cite Galileo's trial as a widely known example of that Church's repressive attitude. *Punch*, which as Richard Noakes notes above (chapter 4) was stridently anti-Catholic, made frequent use of Galileo to mock any pronouncement by the Church of Rome. For example, when Cardinal Wiseman claimed that Catholicism and science were in harmony, *Punch* maliciously suggested that history should now be rewritten so as to show that the Church did not thwart Galileo's work. The example of Galileo was likewise employed in the context of a discussion of the law of libel in the radical *Black Dwarf* in 1817. In arguing that the censorship of speculative ideas has been the characteristic of a barbarous age, or the resort of jealous tyrants, the author cited the example of Galileo's inquisitors who had imprisoned him for publicly espousing the Copernican system. Galileo was an easily recognized symbol of persecution by the enemies of enlightenment. The Catholic Church -- here taken to represent the political establishment in England -- had sought to repress truth. Scientists' lives could therefore be recruited for many purposes including diatribes against political and religious authority.

**ILLUSTRATIONS**

Ludmilla Jordanova has observed that during the latter half of the eighteenth century the obituary notices of scientists and medical men carried by general periodicals began to be accompanied by engraved portraits. Often these engravings contained funerary emblems and motifs illustrating the area of science or medicine pursued by the deceased. Likewise, throughout the nineteenth century many periodicals regularly carried 'likenesses' to accompany obituary notes and other types of biographical article. Such illustrations helped to sell periodicals like the mass-circulation *Mirror of Literature*, which is examined in chapter 2. The *Illustrated London News*, established in 1842, specialized in high-quality engravings and regularly contained portraits of the individuals discussed in its pages. With advances in photographic technology during the latter decades of the century, photographs began to replace engravings. This widespread diffusion of portraits by the periodical press enabled readers who would not otherwise have encountered the biographical subject or had the opportunity of seeing a painted portrait to 'see' eminent scientists.

Forms of illustration varied widely. For example, classical themes were frequently employed; thus a laurel crown would symbolize the scientist's victory over nature. The portraits of scientists also often included books and scientific instruments which related to the biographical subject’s major area of research, such as the 1836 portrait of Faraday in *Fraser's Magazine* (fig. 9.1). Sometimes the subject was drawn or photographed in a laboratory or on a field trip, thus providing the reader with a visual context in which to appreciate the scientist's activities. As Gowan Dawson has noted in chapter 7, with particular reference to the *Review of Reviews*, scientific journalism towards the end of the century was becoming increasingly intrusive. Biographical articles, based on an interview, often contained a wealth of personal details about a scientific celebrity. Photographs or engravings were published showing readers the house in which the scientist lived and the library and study in which he worked (figs. 9.2 and 9.3). Thereby they could see the scientist 'at home' and relate to him via familiar domestic imagery. Visual material played an increasingly important role in conveying 'scientific lives' within the periodical frame.

**READING BRIEF SCIENTIFIC LIVES**

So widespread was biography within the periodical literature that a reader who never consulted a work of collected biography or bought or borrowed a single memoir could glean a vast amount of biographical information from the proliferating periodical press. In contrast to the financial and temporal investment involved in purchasing and reading a full book-length biography, the reader of the general periodical press encountered numerous abbreviated 'scientific lives' as part of his or her general reading. Likewise, the historian of scientific biography will find the periodical press to be a wonderfully rich resource. One of its attractions is that biographical material was not presented in a uniform manner but that 'scientific lives' were subject to many different interpretations and were used to support a wide variety of social, political, and religious positions ranging from jingoism to internationalism and from atheism to evangelical Christianity. Moreover, I have suggested four contexts in which scientific biography entered the
periodical frame—as obituary notices, reviews of biographies, biographical sketches, and passing references—each of which treated scientific 'lives' in a different way.

As emphasized in chapter 1, the nineteenth-century periodical press was highly differentiated. While some periodicals aimed at a wide audience, others concentrated on a specific readership, perhaps defined by religious commitment or geographical locality. Also, as far as the individual was concerned, price was a limiting factor on the availability of titles, unless accessed through a library or reading room. As Alvar Ellegård showed in his seminal monograph, the differentiation among periodicals enables the historian to ascertain how evolutionary ideas were disseminated to different audiences. A similar exercise could be conducted to ascertain how scientific lives were presented to readerships possessing, say, different religious or political commitments. Thus, as indicated above, the presentation of Faraday's religion and its relationship to his science depended on the religious orientation of the periodical. Likewise, the *Victoria Magazine* presented Faraday from a woman's perspective, as did Juliet Pollock writing in *St. Paul's*. Different audiences received different 'Faradays'. While no necessary connection exists between a periodical's stance and its portrayal of individual scientists, the latter is likely to be influenced by the author, the editor, the proprietor, the readers, and other factors involved in periodical production.

Finally, biographies of scientists not only narrate the subject's life and work but also contain the author's views about the nature of science and the value of a life in science. As in the case of Faraday, brief scientific biographies can identify the personal qualities necessary for a successful scientist. Likewise the portrayal of the scientist through biography was often intended to make science appear attractive and thus encourage readers to participate in science. As a contributor to the popular science journal *Knowledge* commented, 'the life of a man like Faraday is an inspiration' to the reader. His life 'should [therefore] be widely known and emulated'. Repeatedly his biographers also emphasized the importance of experiment and his unwillingness to speculate beyond the legitimate inferences from his data. Here was an example of good scientific practice that the reader was urged to emulate. More generally, biographies frequently carried value judgments about certain scientific theories and scientific methods that their authors sought to propagate.

One of the outstanding questions for the historian is to determine the extent to which the general periodical press shaped public understandings of science. The short 'scientific lives' published within general periodicals clearly played a crucial role in this respect. Not only do such 'lives' encapsulate notions of 'the scientist', but they also address many of the scientific ideas and activities pursued by the biographical subject. Through these short biographies, readers would therefore have encountered information about scientific theories, experiments, and scientific method, and also discussions of the controversies in which the scientist participated. The biographical account became the locus for contemporary debate, whether, for example, on political issues, female emancipation, or the relationship between science and religion. Far from simply offering the details of an individual life, articles on scientific biography helped shape the nineteenth-century cultural engagement with science.