Every two years *Notes and Records* has the privilege of publishing the winning entry in its Essay Award competition. The award for 2014 went to Emily Winterburn, and we begin this issue with her essay, a nuanced account of the educational resources available to the eighteenth-century astronomer and musician William Herschel. Despite Herschel’s presentation of himself as self-taught, the opportunities for instruction in his native Hanover and later in England were plentiful and varied. Opportunities had to be seized, of course. And Herschel showed himself adept in reaching out, whether to the reading matter he encountered at home and in libraries or to the networks of personal mentors, instrument makers, and others to whom he had access. Winterburn’s account of Herschel’s rise to prominence (despite the lack of formal education) throws important new light on the biography of a man whose reminiscences of his own early life have clearly to be read with caution. The essay is a welcome reminder of the insights that await historians willing to explore the debt of even elite scientists to technicians and a range of other, often little-known, practitioners working outside or on the margins of academic science.

Largely overshadowed by the spectacularly successful William Herschel was Caroline, his sister and collaborator. Caroline’s was a discreet presence, and her role as an astronomer in her own right has still to be fully explored. A woman whose scientific attainments have been even more veiled was Margaret Cavendish, who created a sensation when she attended a meeting of the Royal Society, the first woman to do so, in 1667. Accounts of her science from her contemporary John Evelyn to C. H. Firth and Samuel Mintz in the nineteenth and twentieth centuries have been largely dismissive. But Emma Wilkins seeks to re-evaluate Cavendish’s tart disparagement of the experimental pursuits of Fellows, encapsulated in their use of microscopes (‘deluding glasses’, as Cavendish called them, rather than ‘true informers’ about nature). Wilkins’s article is at once more sympathetic and less ‘gendered’ than most existing accounts. If Cavendish broadly preferred ‘Reason’ over ‘Sense’, that did not imply a wholesale rejection of experiment, still less an ignorant contempt for the practices of the Royal Society. In certain respects Cavendish was as good a Baconian as any Fellow. And, as Wilkins insists, her reservations were ones that many male contemporaries shared; they were not a peculiarly female response.

The cases of Caroline Herschel and Margaret Cavendish demonstrate the need for us to dig behind appearances that have made the past of science a story of predominantly male achievement. In a different register, Markman Ellis leads us behind the ‘appearances’ of science in its finished, carefully worked form of published papers and books. His account of the ‘Weekly Letter’ that the Royal Society’s secretary, Thomas Birch, and Philip Yorke, second Earl of Hardwicke, wrote between 1741 and 1766 points to the insights to be found in a source of a distinctly confidential character that reported, for a fee, on the literary, political and scientific worlds of London to selected recipients, mainly in Yorke’s...
‘Hardwicke circle’ within the Royal Society. As Ellis shows, the manuscript form of the letters (680 of them in all) and the controlled nature of their distribution meant that the information they contained was diffused selectively. Although they were not clandestine, they were written for certain eyes only.

The documents and experiences on which George Guise draws in his recollections of his time in Margaret Thatcher’s Policy Unit between 1986 and 1990 were subject to norms of confidentiality of a more encompassing kind. This makes his ‘behind the scenes’ account of those years all the more valuable. Guise shows Thatcher to have been sensitive to the interests of science to a degree rare in British prime ministers; crucially, too, she was more supportive of basic, curiosity-driven research than some accounts of her policies have suggested. Her decision to assume the chairmanship of a key cabinet committee, the Committee for Science and Technology, was a declaration of intent. And important consequences followed, notably in her resolve that the UK should not leave CERN but seek rather to improve its administrative procedures. With a confidence bred of her early training as a chemist, she enjoyed the company of scientists, as a lunch with Nobel prize winners that she hosted in April 1989, and an hour-long conversation with Abdus Salam in the following month, demonstrated. She also understood the dangers of global warming better than many politicians in our own day, and was readier to engage with them, at least to the point of encouraging more data collection and computer modelling.

Personal accounts of the kind that Guise offers are fascinating in their own right and an invaluable resource for future research. It is only to be regretted that we do not have more of them. Yet it remains one of the privileges of working in the relatively new field of the history of science that our staple quarries of printed documents and manuscripts show no sign of becoming exhausted and that on occasions they yield returns that go beyond any normal expectation of new knowledge. The results of work by Ana Maria Alfonso-Goldfarb, Márcia Helena Mendes Ferraz and Piyo M. Rattansi in the archives of the Royal Society are a case in point. In a letter of 1675 from an Antwerp apothecary, Augustin Boutens, to Henry Oldenburg, was a powder that Alfonso-Goldfarb, Ferraz and Rattansi identify as a preparation containing Ludus helmontii, a much-vaunted remedy for alleviating the agonizing effects of kidney or bladder stones that had captured imaginations since J. B. van Helmont had published a treatise on it, De lithiasi, in the 1640s. The authors’ identification of the powder rests not only on a reading of the correspondence between Boutens and Oldenburg but also on an understanding of the wider context of contemporary enthusiasm for the Ludus, manifested not least among Fellows of the Royal Society anxious to obtain supplies for their own use. Sadly, the intriguing question of what happened to considerable quantities of forms of the Ludus that Boutens despatched to London in 1668 and that van Helmont’s son seems to have distributed rather arbitrarily in England in the 1670s remains unresolved. Samples seem to have been in the hands of the mineralogist John Woodward in the 1720s, but from the mid eighteenth century, with belief in the efficacy of the Ludus in sharp decline, no further record of these survives. This leaves the powder in the Royal Society as probably the last surviving specimen of a pyrites-based concoction that had once understandably raised so many hopes of a cure for the ‘stone disease’, in the end only to disappoint them.

Neil Todd’s examination of the fate of Ernest Rutherford’s radium sources focuses on another substance with an elusive history. As Todd shows, the way in which Rutherford acquired and used the sources reflects not only changes in the scientific purposes to which radium was put but also broader developments in the history of nuclear physics. As part
of this broader history, even the fate of the one gram of radium that Rutherford painstakingly accumulated, first in Manchester and then in Cambridge, is instructive. After his death in 1937, both the University of Cambridge and the Department of Scientific and Industrial Research expressed proprietary interests, and some of Rutherford’s radium appears to have been made available during World War II to the Tube Alloys project. From that point, a mixture of secrecy and a series of complex administrative decisions about the allocation of the radium make for an intricate story, ending with Todd’s conclusion that Rutherford’s radium is probably now awaiting ‘geological disposal’ as part of the UK Radioactive Waste Inventory.

The richness of the printed and manuscript materials on which the articles in this issue draw underlines, as scholarly journals repeatedly do, the centrality of libraries and archives in our work as historians. This is not the first occasion on which, with that scholarly debt in mind, I have acknowledged the gratitude of this journal, like others, to the keepers of the collections on which contributors draw. As editor of *Notes and Records*, I have been especially privileged to work with the staff of the Library of the Royal Society, and it is a pleasure to publish in this issue Joanna McManus’s account of an item in the Society’s picture collection: a portrait of Einstein, by Ivan Opffer, dating from his last few weeks in Europe before he left for Princeton in October 1933. The portrait, recently donated by Deborah and Brian Charlesworth, bears witness to a continuing acquisitions policy and a tradition of exemplary curatorship for which we have reason to be profoundly grateful.

**Robert Fox**
robert.fox@history.ox.ac.uk