ESSAY REVIEW

AN ATTENUATED PHILOSOPHICAL GENTLEMAN

by

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Dr. Joseph Black had at one time, a house near us to the west. He was a striking and beautiful person; tall, very thin, and cadaverously pale; his hair carefully powdered, though there was little of it except what was collected in a long thin queue; his eyes dark, clear and large, like deep pools of pure water. He wore black speckless clothes, silk stockings, silver buckles, and either a slim green umbrella, or a genteel brown cane. The general frame and air were feeble and slender. The wildest boy respected Black. No lad could be irreverent toward a man so pale, so gentle, so elegant and so illustrious. So he glided, like a spirit, through our rather mischievous sportiveness, unharmed. He died seated, with a bowl of milk upon his knee, of which his ceasing to be did not spill a drop; a departure which it seemed, after the event, might have been foretold of this attenuated philosophical gentleman.

So wrote the Scottish law lord Henry Cockburn in the 1820s, recalling the more memorable acquaintances of his Edinburgh boyhood, and capturing the elderly and valetudinarian Joseph Black’s frail glamour, already subliming to spirit in this reminiscence, as Cockburn, together with other members of his distinguished generation of Reform Whigs and Edinburgh Reviewers such as Henry Brougham, cast back a nostalgic glow on the influential figures of their youth, the scientists and philosophers of Scotland’s Enlightenment.

In the twentieth century, historical consideration of Black understandably focused on the innovative scientific work that lies at the basis of his considerable reputation. This was his research on the chemistry of mild and caustic alkalis and its associated chemical identification of fixed air (carbon dioxide), which in its turn helped focus further attention on the chemistry of gases, and on related, gravimetric methods of quantitative experimental analysis and synthesis. This was followed by his successful pursuit of the more general relations holding between heat and matter, a kind of thermochemistry that had preoccupied his teacher William Cullen and which resulted in the discovery, conceptual formulation and experimental quantification of latent heat and heat capacity (specific heats). This fundamental work, undertaken in Glasgow and Edinburgh while first

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Published online 19 February 2014
a student of medicine and chemistry, and then a teacher of chemistry at Glasgow, was the
creative high point of Black’s career. It occurred in the dozen or so years after 1752, and
became known as much through being spread by his students, at least 4000 taught over
four decades in Glasgow and Edinburgh, as by publication; for although he lectured on
his research, he never published his work on heat. His chemical thinking did not remain
static after the mid 1760s: his lectures, many student copies of which still survive, exhibit
significant development of phlogistic doctrine, particularly the introduction of the
negative-weight hypothesis, which Black would then gradually abandon in the 1780s in
the face of the increasing successes of Lavoisier’s oxygen chemistry. 2

Study of Black has never had the benefit of a full ‘Life and letters’, and until now has
lacked any general and thorough edition of his correspondence. This latter we now have,
thanks to the very considerable labours of Robert Anderson and the late Jean Jones. They
have worked from the basis of the major MS collection in Edinburgh University Library,
and from other substantial collections in the Public Record Office of Northern Ireland and
the Watt and Boulton archives now held by Birmingham Library. They have garnered
further materials from both the UK and abroad, 27 institutions in all, in locations ranging
from California to Estonia. Although the editors estimate that perhaps less than a quarter
of Black’s correspondence survives, one may surmise that little has escaped their
attention, still awaiting discovery. A total of 835 letters (inclusive of drafts), mostly from
or to Black, but sensibly including other immediately relevant letters and reports, make
up the core substance of this edition, and these alone, in their bare content, constitute an
invaluable contribution towards renewing the scholarly basis for historical understanding
of Black and the scientific, philosophical, academic, commercial, familial and personal
circles he inhabited.

One of the first things to emphasize about these two volumes is that they are of course
very much more than the bare content of the correspondence. The letters themselves are
expertly and thoroughly annotated, identifying named individuals, explaining obscure
chemical, medical, technical and other terms, and clarifying underlying subjects, issues
and details in the correspondence when their meanings are not readily apparent. In
addition, volume 1 provides four introductory chapters, covering in turn general historical
background, Black’s life and work, the history of the main collections from which the
correspondence is drawn, and lastly an evaluation of the correspondence’s leading
characteristics and historical significance. When the correspondence finishes in volume 2,
there are still 171 pages to go, and these further supply 14 appendices, a bibliography and
an index. The appendices use further manuscript materials, including household accounts,
property valuation, Black’s long, complex and minutely quantified will, autobiographical
fragments, a list of books borrowed from Edinburgh University library, and his father’s
correspondence with the French philosopher Montesquieu, a family acquaintance in
Bordeaux, where Black’s family, mercantile Ulstermen prospering in the wine trade,
resided. Particularly helpful is the long first appendix, which gives short biographies of
many of the individuals, some very well known, others virtually unknown, who recur in
the correspondence. In receipt of all this material additional to the letters, the reader can
only express further gratitude, for it all adds considerably to the work’s interest and utility.
Production and printing standards are good, and the inclusion of 40 highly varied and
well-chosen illustrations (portraits, buildings, title-pages, linen samples, manufacturing
processes, apparatus), are a welcome aid to visualization of the many locations, persons,
material objects and manufacturing practices that occur throughout the correspondence.
Only two small changes might be recommended to Ashgate for any further edition or reprint. Printing the ‘Contents’ page of volume 1 also at the start of volume 2, and including the index in volume 2 also at the end of volume 1, would make for handier overall use.

Some few of Black’s letters are already very well known to historians. These would include particularly the correspondence with Lavoisier in which Black acknowledged his positive reception of the new French chemistry (an unphilosophical capitulation, according to his critically sensitive colleague and friend Professor John Robison). They would also include Black the attending physician’s letters concerning the philosopher David Hume’s last illness and death. Even with such familiar examples there is nonetheless further and suggestive editorial information and opinion supplied: Black’s honest, coolly correct, professional delivery of notice to Hume, of the philosopher’s rapidly approaching and unavoidable death—this to a reasonably close acquaintance, if not intimate friend—is still a touch unnerving to read, in the editorial notes.3 Letters to and from James Watt, the correspondent who bulks largest throughout the two volumes, have also been previously published and drawn on by historians of technology and science, and by economic historians.4 Yet all such letters benefit from inclusion, and not simply because of the mechanical utility of having everything between the covers of one collected edition. Inclusive collection enables a reader at times to grasp the extent of synchronically surrounding topics and preoccupations of the writers, facilitating in turn the perception of unnoticed linkages, and fostering an appreciation of the variegated content of a chemico-medical life in a given month or year. Diachronically, as the editors demonstrate in a revealing histogram, the overall record is patchy. The 1780s are well represented, whereas relatively few letters survive for the later 1750s and mid 1760s, which were particularly interesting periods for Black’s work on heat, his interaction with Watt and his career move from Glasgow to Edinburgh. That said, the letters do tend to confirm a diachronic trend, away from the intense, innovative early research and towards an increasing interaction with agricultural improvers, agencies concerned with the promotion of manufactures, manufacturers themselves, and municipal and other authorities. At Edinburgh, Black’s time was also devoted to his ever-increasing numbers of chemistry students, as the medical school’s reputation and international drawing power soared in the period of his professorship. Also impressive is the geographical expansion of the correspondence, as Black’s scientific reputation was spread, and as former students, at home and abroad, maintained communication.

Other letters deserve more attention than they have received from historians, among them the correspondence between Black and the London-based Scot Dr William Hunter, concerning Black’s role in validating Alexander Monro secundus’s priority and reputational claim concerning the discovery of the functions of the lymphatic system, a subject of bitter and prolonged dispute between Monro and Hunter. This was very awkward for Black, who was connected to both parties and had headed the student petition arguing for Monro’s appointment as Professor of Anatomy at Edinburgh in succession to his father. The correspondence is revealing, particularly with regard to the acute moral sensitivity, and moral self-censure, evinced by Black about his role in the controversy.5 Black’s correspondence with the Russian Princess Dashkova, whom he knew when she lived in Holyrood Palace while her son attended the university, also invites further attention. Dashkova herself was a fascinating figure, reputedly aiding the Empress Catherine in the deposing of Catherine’s husband, becoming the sole female to direct a scientific academy in the eighteenth century (the St Petersburg), a well-travelled and intellectually well-connected member of European Enlightenment circles.
One of Black’s longest scientifically and philosophically detailed letters, written to Dashkova, contains his account of his friend James Hutton’s new theory of the Earth, and is remarkable among the whole correspondence for its lengthy and sustained attention to clarification of both the detail and the scope of a contemporary and controversial theoretical innovation.6

As the editors remark at the close of the introductory essays, Black nevertheless remains a partly obscure figure, reserved in expression of personal opinion and sentiment.7 The letters reveal little in the way of spontaneous feeling, of political inclination, of religious—or, for that matter, irreligious—views. Here one might resort to the company he kept, noting the unchristian companions of his later years, Adam Smith and James Hutton, but noting equally the Presbyterianism of Watt, and the more rationally intellectualized religion of other acquaintances, colleagues, and kin such as his cousin, the philosopher and historian Adam Ferguson. Whether such issues for Black were items of reserved expression, or perhaps of indifference, seems likely to remain a matter of probabilistic conjecture. The impression one gains overall, from the correspondence and elsewhere, is less of a psychologically accessible character, than of a carefully constructed and maintained persona, polished and elegant, civil and formal, uncontroversial, unmarried, relatively humourless, and possessing artistic and musical as well as scientific talents. John Robison, who had known Black for nearly half a century, still did not think that he was a closely intimate friend of Black’s.8 That title Robison reserved only for James Watt, and the Leith glassmaker Archibald Geddes, so it may be that, other than family, Black felt most relaxed with practical commercial and manufacturing men rather than the aristocratic, professional and intellectual elites of Edinburgh society, one of whose chief ornaments he was.

If the correspondence might therefore present as much challenge as opportunity for an intending biographer, what other general features might recommend it as a site of future historical research, and will add historical substance to the spirit of this attenuated philosopher? There are many, but three aspects are especially worth mentioning in the light of current historiographical enthusiasms. The geographical extent of his correspondence and the diaspora of his students well suits those interested not simply in scientific networks but also in the creation and sustaining of long-range networks, and the dynamics of knowledge within them, its movement, alteration, commodification and stabilization within the globalizing forces of exploration, trade and empire. A related interest is now focused on the applied and utilitarian features of eighteenth-century science, in both national and comparative terms, and the correspondence of Black reveals many and multifarious activities and connections, from—to take only the alphabetical boundaries—alkali manufacture to water supplies. Interesting comparisons are waiting to be made between, say, the Cameralist scientists of Germany and Scandinavia, and the civic-minded utilitarians of Scotland. Finally, there is the popularity of substance-based history of chemistry. This takes several forms, from ‘biographies’ of substances through to the replication of historical experiments, but all these forms exhibit a necessary concentration on chemistry’s materiality and its fabricative nature, investigating the development of the science’s basic focus on material transformations, how to make them, how to understand them, how to manipulate them into new substance. Black’s correspondence offers a considerable lexicon of the material chemical world of the eighteenth century in all its mundane presence, and this now awaits historical investigation. It is for the opening out of such practical and immediate possibilities, as well as for their undoubtedly long researches and meticulous scholarship, that the editors deserve our thanks.

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NOTES

5 Anderson and Jones (eds), *op. cit.* (note 3), pp. 142–145.