The Correspondence of Robert Boyle

1627-1691

Edited by
Michael Hunter,
Antonio Clericuzio and
Lawrence M. Principe

ROUTLEDGE

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Permission to reproduce letters in the edition has been granted by the various repositories in which they survive. We are particularly grateful to the President and Council of the Royal Society, to the Duke of Devonshire and the Chatsworth Settlement Trustees, and to the Massachusetts Historical Society, details of whose holdings are given in section 3 of the Introduction along with other large holdings of letters. Here, it is appropriate to note collections where letters survive piecemeal, including Cambridge University Library; the Cushing/Whitney Medical Library, Yale University; the Charles Robert Autograph Collection, Haverford College, Pennsylvania; the Pierpont Morgan Library, New York; the Dibner Collection, Smithsonian Institution, Washington D.C.; the Waller Collection, University of Uppsala. Material from the Portland Papers is included by permission of the Marquess of Bath, Longleat House, Warminster, Wiltshire.

MH
AC
March 2001 LMP

List of Abbreviations

Add. MS	British Library Additional Manuscript
Aspiring Adept	Lawrence M. Principe, *The Aspiring Adept: Robert Boyle and his Alchemical Quest* (Princeton, 1998)
Birch, *Royal Society*	Thomas Birch, *The History of the Royal Society of London*, 4 vols (London, 1756–7)
Birch (ed.), *Works*	Thomas Birch (ed.), *The Works of Robert Boyle*, 5 vols (London, 1744)
BL	Royal Society Boyle Letters
BP	Royal Society Boyle Papers
Commons Journal	*Journals of the House of Commons, 1547–* (London, 1803–present)
CSPD	*Calendar of State Papers, Domestic Series*
CSPI	*Calendar of State Papers relating to Ireland, 1603–70*, ed. C. W. Russell *et al.*, 13 vols (London, 1870–1910)
DNB	*Dictionary of National Biography*
F.R.S.	Fellow of the Royal Society
Firth and Rait, *Acts*	C. H. Firth and R. S. Rait (eds), *Acts and Ordnances and Ordinances of the Interregnum*, 3 vols (London, 1911)
Frank, *Harvey*	R. G. Frank, *Harvey and the Oxford Physiologists: a Study of Scientific Ideas and Social Interaction* (Berkeley and Los Angeles, 1980)
GEC	G. A. Cockayne, *Complete Peerage*, new edition, 14 vols (London, 1910–59)
HP	Hartlib Papers, University of Sheffield
Harwood, *Essays*	John T. Harwood (ed.), *The Early Essays and Ethics of Robert Boyle* (Carbondale and Edwardville, 1980)
Hunter, *Letters and Papers*	Michael Hunter, *Letters and Papers of Robert Boyle: a Guide to the Manuscripts and Microfilm* (Bethesda, Md. 1992)
I Lismore	A. B. Grosart (ed.), *The Lismore Papers (First Series), viz. Autobiographical Notes, Remembrances and Diaries of Sir Richard Boyle, First and 'Great' Earl of Cork*, 5 vols (London, 1886)

II Lismore	A. B. Grosart (ed.), *The Lismore Papers (Second Series), viz. Selections from the Private and Public (or State) Correspondence of Sir Richard Boyle*, 5 vols (London, 1887–8)
Lords Journal	*Journals of the House of Lords, 1509–* (London, 1846–present)
Maddison, *Life*	R. E. W. Maddison, *The Life of the Hon. Robert Boyle* (London, 1969)
Maddison, 'Tentative Index'	R. E. W. Maddison, 'A Tentative Index to the Correspondence of the Honourable Robert Boyle', *Notes and Records of the Royal Society*, 13 (1958), 128–201
NRRS	*Notes and Records of the Royal Society*
OED	*Oxford English Dictionary*
Oeuvres complètes	Christiaan Huygens, *Oeuvres complètes*, 22 vols (Amsterdam and The Hague, 1888–1950)
Oldenburg	A. R. and M. B. Hall (eds), *The Correspondence of Henry Oldenburg*, 13 vols (Madison, Milwaukee and London, 1965–86)
Ortus medicinae	J. B. van Helmont, *Ortus medicinae. Id est initia physicae inaudita*, ed. F. M. van Helmont (Amsterdam, 1648; reprinted Brussells, 1966)
Phil. Trans.	*Philosophical Transactions*
RBHF	Michael Hunter (ed.), *Robert Boyle by Himself and his Friends* (London, 1994)
RCHM	*Royal Commission on Historical Manuscripts*
RS	Royal Society
Stubbs, i	Mayling Stubbs, 'John Beale, Philosophical Gardener of Herefordshire. Part I. Prelude to the Royal Society (1608–63)', *Annals of Science*, 39 (1982), 463–89
Stubbs, ii	Mayling Stubbs, 'John Beale, Philosophical Gardener of Herefordshire. Part II. The Improvement of Agriculture and Trade in the Royal Society (1663–83)', *Annals of Science*, 46 (1989), 323–63
Turnbull, *HDC*	G. H. Turnbull, *Hartlib, Dury and Comenius: Gleanings from Hartlib's Papers* (London, 1947)
Webster, *Great Instauration*	Charles Webster, *The Great Instauration: Science, Medicine and Reform 1626–60* (London, 1975)
Works	Michael Hunter and Edward B. Davis (eds), *The Works of Robert Boyle*, 14 vols (London, 1999–2000)

Introduction

1. The Correspondence of Robert Boyle

Robert Boyle (1627–91) was one of the leading figures in English and European intellectual life for much of the late seventeenth century. Celebrated in his own time as a natural philosopher and as a prolific author on scientific and religious issues, he also played a significant role in various other fields. This is the first complete edition of his correspondence, presenting in chronological order the text of all surviving letters to and from him, together with any enclosures that these contained. We have also included details of letters known once to have existed which are now lost.

The correspondence ranges over a number of themes. There are family letters to and from Boyle's father, the Great Earl of Cork, and various of his illustrious siblings – the second Earl of Cork and first Earl of Burlington; the first Earl of Orrery; Katherine, Lady Ranelagh; and Mary, Countess of Warwick. Other letters are from Boyle's associates in the pursuit of improved knowledge of nature and its technological spin-offs, perhaps particularly the 'intelligencers', Samuel Hartlib and Henry Oldenburg, but also including such savants as Robert Hooke, Daniel Coxe, John Locke and John Beale. Equally revealing are Boyle's letters with alchemists, most notably the shadowy Georges Pierre in Normandy, but also including obscure English figures whose traces bring to light a lost world of ideas in Boyle's period in which he participated to a perhaps surprising extent.

Also well represented are Boyle's contacts among clergymen, particularly Thomas Barlow, Bishop of Lincoln, and Narcissus Marsh, Provost of Trinity College, Dublin. The correspondence illustrates Boyle's active role in the promotion of Protestant Christianity in the mission field. For nearly thirty years Governor of the Corporation for the Propagation of the Gospel in New England (the New England Company), his profound interest in the affairs of that body is illustrated by many letters, some of them previously unpublished. Other letters give details of Boyle's involvement in projects to promulgate a Gaelic translation of the Bible in Ireland and in the Scottish Highlands, while his charity towards those in need is reflected by various letters seeking his assistance, not least from victims of the persecution of Protestants in France under Louis XIV.

Within the correspondence as a whole there are various chronological patterns which may be briefly indicated here. Volume 1 opens with letters from Boyle's schooldays and from his continental travels, mainly to his father, the Great Earl of Cork. Thereafter, this volume is dominated by a series of lengthy letters from Samuel Hartlib to Boyle (Boyle's letters to Hartlib are, unfortunately, mainly lost). These are interspersed by a miscellaneous spread of letters between Boyle and such family members as his sister, Lady Ranelagh, and such friends as John Mallet, William Petty (both later knighted), Benjamin Worsley, Frederick Clodius and, later in the 1650s, John Evelyn. A particularly significant episode is represented by the letters to Boyle from George Starkey in 1651–2.

Volumes 2 and 3, dealing with the five years 1662–7, are dominated by Boyle's correspondence with Henry Oldenburg, which had in fact begun in volume 1, overlapping with that with Oldenburg's mentor, Hartlib. In fact, the correspondence is more Oldenburg's than Boyle's since many of Boyle's letters are unfortunately lost, except for a group dating mainly from 1665. Nevertheless, the Oldenburg–Boyle correspondence is a remarkable one, displaying a degree of intimacy over several years that is unparalleled either in this edition or in Oldenburg's voluminous correspondence as a whole. The principal other epistolary relationship evidenced in these volumes is that with John Beale, whose profuse attentions from rural Somerset Boyle shared both with Oldenburg and with Evelyn, and to whom he evidently replied regularly, though not one of his responses is extant.[a] This relationship was terminated only by Beale's death in 1683. In addition, these volumes contain significant groups of letters from Robert Hooke and Daniel Coxe, while others reflect Boyle's role as Governor of the New England Company from 1662 onwards.

Volume 4 starts with the tail-end of the correspondences represented in the previous volumes, reflecting the relationships arising from Boyle's continuing residence outside London until 1668. However, Boyle's move to the metropolis in that year means that the character of the correspondence changes markedly. Letters from Oldenburg and other London informants cease almost overnight, and instead other and more miscellaneous themes come to the fore. Thus family letters recur at intervals, not least when Boyle and his siblings were engaged in litigation. A significant group of letters from Robert Southwell and his son, Sir Robert, reflects Boyle's concern in the early 1670s to deal justly with the ministers of the Irish benefices whose impropriations he held. Both at this time and later, Boyle was involved with scholars like Thomas Hyde in evangelical publishing initiatives, aimed particularly at the Middle East, such concerns running in parallel with

[a] For Beale's letters to Oldenburg, see *Oldenburg*, passim; his extensive letters to Evelyn form a major component of the John Evelyn correspondence in the Evelyn Papers, now at the British Library.

Boyle's continued activity in connection with the New England Company (he was only finally to resign the post of Governor in 1689).

Then, the latter part of volume 4 and the start of volume 5 are characterised by the profuse and extraordinary series of letters that Boyle received from the alchemist, Georges Pierre, and various French associates. Letters later in the volume and continuing into volume 5 reflect Boyle's enthusiasm for the edition of the Bible in Irish for which he largely paid, while in volume 6 we have details of the Scottish sequel to this. The last volume also presents an extensive series of letters between Boyle and his principal advisor in the casuistical concerns which we now know were so important to him, Thomas Barlow, while other clerical associates in these years include Gilbert Burnet, Bishop of Salisbury. These later years also see a proliferation of letters from continental savants to whom Boyle had been made known through the profuse writings that he had by now published in Latin and English, while there are also a number of begging letters, not least from impoverished Huguenot refugees in London.

2. History of the Publication of Boyle's Correspondence

In publishing Boyle's correspondence, we have various precursors. The most important was the eighteenth-century antiquary and divine, Thomas Birch, who included a significant body of letters to and from Boyle in the fifth volume of his edition of Boyle's *Works* published in 1744; he also drew on others for the 'Life' of Boyle that was included in the first volume of that edition.[a] Though Birch's is the name with which the edition is exclusively associated, Birch was greatly assisted in preparing these parts of the work by the dissenting minister, Henry Miles, about whom more will be said later in this introduction.[b] It is also worth noting that Birch's account of Boyle's life and letters brought to fruition an earlier project by the scholar, William Wotton; this proved abortive, but Wotton's extensive work on Boyle's papers in preparation for it is also much in evidence in the archive, including a careful list of selected letters, many of them no longer extant, which is printed as appendix 4 to this edition.[c]

[a] In contrast to the 2nd edition of 1772, in which the 'Life' has a separate pagination in Roman numerals, in that of 1744 this has an Arabic pagination duplicating that of the textual component of the volume. Here it may be presumed that references in vol. 1 are to the 'Life'.

[b] See Hunter, *Letters and Papers*, pp. xiii–v, xvii–xx; *RBHF*, pp. lviii–ix; R. E. W. Maddison, 'A Summary of Former Accounts of the Life and Work of Robert Boyle', *Annals of Science*, 13 (1957), 90–108; M. B. Hall, 'Henry Miles, F.R.S. (1698–1763) and Thomas Birch, F.R.S. (1705–66)', *NRRS*, 18 (1963), 39–44.

[c] See vol. 6, pp. 397–414. On Wotton's 'Life', its rationale and such fragments of it as survive, see *RBHF*, esp. pp. xxxviff. See also Hunter, *Letters and Papers*, pp. xii–iii.

Birch's selection of letters for publication was extensive but slightly arbitrary. His coverage is most comprehensive in the case of clerics, scholars and others in whom he and Miles were interested, such as Thomas Barlow, Gilbert Burnet and Joseph Glanvill, though even here his selection was slightly erratic, while his coverage of more minor figures was haphazard. In his edition, the letters in the 'Life' appear at the appropriate chronological point in his narrative, while those in the final volume are grouped by author: all the letters from Boyle come first, largely in chronological order, with undated ones first, followed by letters to him grouped by correspondent in a sequence based on the date of the earliest letter from the correspondent in question.[a] In fact, there are two such sequences, due at least partly to the fact that the Boyle material that Wotton had held onto in connection with his abortive 'Life' only reached Henry Miles when the preparations for Birch's edition were far advanced.[b] In addition, various appendices to the 'Life' collected together documents surviving among the Boyle Letters relating to Boyle's involvement with New England, including various letters to him from John Eliot, and to the projects for making the Bible available in Irish and Gaelic with which Boyle was associated. It is interesting that, in separating out this material relating to Boyle's evangelical concerns, Birch was following the mandate of William Wotton, as reflected in his list of letters.[c]

Birch's edition represents by far the most substantial published collection of Boyle letters prior to the present one, and since then publication has mainly been of piecemeal materials. The later eighteenth century saw the publication of items relating to Boyle's activity as Governor of the New England Company, which continued into the nineteenth.[d] In the 1880s further important documents saw the

[a] Extracts from certain of these letters also appear in the 'Life'; it has not seemed appropriate to note such extracts in the headers to the letters in question.

[b] The second sequence begins, following various undated letters, with Wilkins's letter to Boyle of 6 Sept. 1653 in Birch (ed.), *Works*, v, 629. For the complicated negotiations over the Wotton letters, see Maddison, 'A Summary' (above, p. xiii), p. 101ff. However, although many of the letters in the second sequence appear in Wotton's list, at least one-third do not, probably because Miles came across them while doing further work on the archive. In addition, quite a number of letters listed by Wotton appear in the first sequence, implying that not all the items in his list were still in his possession at his death.

[c] See below, pp. xvii–viii. Non-epistolary documents presented in these appendices include Boyle's will (cf. Maddison, *Life*, pp. 257–82), the charter of the New England Company, and the preface to the Irish New Testament.

[d] See esp. T. Hutchinson (ed.), *A Collection of Papers Relative to the History of the Colony of Massachusets-Bay* (Boston, 1769), pp. 374–7, 388–9, 450–1; E. Hazard (ed.), *Historical Collections: consisting of State Papers and other authentic documents; intended as materials for an History of the United States of America*, 2 vols (Philadelphia, 1792), ii, 453–5, 455–60, 470–6, 491–6, 528–31; Daniel Gookin, 'Historical Collections of the Indians in New England', in *Collections of the Massachusetts Historical Society*, 1 (1792), 141–227 (on pp. 214–18); David Pulsifer, *Records of the Colony of New Plymouth in New England*, 12 vols (Boston, 1855–61), esp. vol. 10; J. W. Ford (ed.), *Some Correspondence between the Governors and Treasurers of the New England Company in London and the Commissioners of the United Colonies in America* (London, 1897, following original private publication in 1896).

light of day through the editorial work on the epistolary remains of the Boyle family of the Rev. A. B. Grosart in his *Lismore Papers*, while the 1890s saw the publication of various Boyle letters in the early volumes of the edition of the *Oeuvres complètes* of Christiaan Huygens published by the Societé Hollandaise des Sciences, commenced in 1888.

Otherwise, little was done till the late twentieth century, when sections of Boyle's correspondence received attention as part of complete editions of the letters of various figures with whom he exchanged letters, notably Antoni van Leeuwenhoek, Isaac Newton, Henry Oldenburg, and John Locke.[a] Here, it is appropriate to single out A. R. and M. B. Hall's edition of *The Correspondence of Henry Oldenburg*, 13 vols (1965–86), since the editors have generously allowed us to use their text and annotations as the basis of our edition of the letters between Boyle and Oldenburg – the most substantial single section of the correspondence – though we have freshly collated the texts with the originals to bring them in line with our preferred house-style, and have also made a number of additions and alterations to the apparatus.

Even more important in the present connection was the work of Dr R. E. W. Maddison. In 1958, Maddison published what he described as 'A Tentative Index of the Correspondence of the Honourable Robert Boyle, F.R.S.' – a complete listing of letters to and from Boyle and ancillary items in chronological order; this appeared in *Notes and Records of the Royal Society* in 1958, and it bears a recognisable similarity to the corpus presented here, though a number of additions have since been made.[b] Then, with the help of a grant from the Leverhulme Trust in 1962–4, Dr Maddison transcribed a large number of letters that had not hitherto been published with a view to producing an edition like the present one, though this never materialised. In 1990, he very kindly made this body of material available so that it could be optically scanned for inclusion in the present edition. These materials were returned to him prior to his death in 1993, and they now form part of the collection of his papers at the University of Kent at Canterbury, along with such items as his chronological series of notes on Boyle, which comprises materials both for his *Life of the Hon. Robert Boyle* (1965) and for annotations to the correspondence.

The current project originated in 1989 in parallel with the new edition of Boyle's *Works* in the 'Pickering Masters' series, edited by Michael Hunter and Edward B. Davis and published in fourteen volumes in 1999–2000. The edition

[a] For bibliographical details, see vol. 5, pp. 109, 141; vol. 6, p. vii.

[b] It may be helpful to record here the handful of 'ghost' letters in Maddison's 'Tentative Index', deleted as a result either of Dr Maddison's or our own further researches: Oldenburg to Boyle, early Oct/ 2 Oct. 1657 [these are the same letter]; Oldenburg to Boyle, 21 Apr. 1658; Boyle to Mallet, 27 Apr. 1658 [same letter as 17 Apr.]; Sydenham to Boyle, 2 Apr. 1666; Hooke to Boyle, 9 Sept. 1667 [same letter as 5 Sept.]; Beale to Boyle, 8 Oct. 1670 [same letter as 12 Oct.]; Barlow to Boyle, letters of Jan. 1685 [should be June 1684]; Boyle to Burnet, after 14 June 1686.

was originally conceived and planned by Michael Hunter and Antonio Clericuzio, and while Michael Hunter has throughout been chiefly responsible for locating and checking the texts used and for preparing the introductory material and appendices, Antonio Clericuzio initially took responsibility for the annotations. However, from the outset an important contribution was made by Lawrence M. Principe, who agreed to deal with the letters between Boyle and Georges Pierre and other shadowy French alchemists which form a significant component of the corpus, having dealt with this episode at length in his *The Aspiring Adept: Robert Boyle and his Alchemical Quest* (1998). He also provided texts and translations of the letters between Boyle and George Starkey which he and William R. Newman are about to publish in a separate study, crucially supplementing the text surviving in the Boyle Letters with other, hitherto unknown, versions.[a] In the latter stages of preparing the edition, Lawrence Principe has played a major role in bringing it to fruition, dealing particularly with the emendation of translations of non-English material and with many of the technical issues arising in letters on alchemical and other topics; he has therefore agreed to become a full member of the editorial team.

As recorded in the Acknowledgments, a major role in getting the project off the ground in the first place was played by the Foundation for Intellectual History, which, through the generosity of Constance Blackwell, paid for the initial translation of all letters written in Latin and French into English. The latter task was executed by Teresa Bridgeman, and the former by David Money, who has also assisted in preparing an accurate text of the Latin letters and in elucidating classical allusions throughout the edition as a whole. A further important landmark was the adoption of the project as a British Academy Research Project in 1996; latterly, it has been supported by the Arts and Humanities Research Board. With the support of these bodies and assisted by the various individuals who are recorded in full in the Acknowledgments, it has now been possible to bring the project to a successful conclusion.

3. Sources

A correspondence is an artificial construct, reproducing an exchange of letters between an individual and various of his or her peers which by definition will bear no direct relationship to any particular archive. On the other hand, since the letters that it comprises are extant in distinct archives, it is necessary to do justice to the various deposits in which these elements survive, which need to be understood in

[a] See W. R. Newman and L. M. Principe's study, *Tried in the Fire: Starkey, Boyle and the Fate of Helmontian Chymistry* and their edition of *The Laboratory Notebooks and Correspondence of George Starkey*, both forthcoming from the University of Chicago Press. These letters date from 1651–2, and to be found on pp. 90–103 and 107–31, below.

order to understand the correspondence as a whole.[a] Hence a little will be said here about each of the major collections of manuscript letters to or from Boyle.

a. The Boyle Letters and other holdings of the Royal Society.

By far the largest deposit of material that is drawn on in the present edition is the collection known as the Boyle Letters at the Royal Society, comprising seven guardbooks of letters to and from Boyle. An ancillary item is the volume in the Society's collection of Early Letters devoted to the correspondence of Boyle, Oldenburg and John Beale (Early Letters OB), which has an overlapping history.[b] These letters all appear to derive from Boyle's own papers, in contrast to the more limited range of relevant items which have formed part of the Society's own archive since Boyle's own time, namely the letters from him to Oldenburg now preserved in Early Letters B 1, and a few other items evidently deposited with the Society at a similar date.[c] Another important source on which we have drawn for various letters is Oldenburg's letterbook, Royal Society MS 1.

As far as the Boyle collection of letters is concerned, its history is as follows. It comprises a mixture of letters addressed to Boyle from others and his own retained drafts and copies, together with a handful of letters from him that were evidently dispatched but later returned to him.[d] During Boyle's lifetime, it seems likely that his correspondence was stored as an integral part of his collection of papers, from which it was only partially differentiated: inventories of his manuscripts during his lifetime refer to letters, but in a way that suggests that bundles of letters were interspersed with other types of material in the house in Pall Mall that he shared with his sister, Lady Ranelagh.[e]

It seems that the process of separating the letters into a separate category was begun by William Wotton in the course of preparing materials for his abortive 'Life of Boyle'. It is apparent from his list of Boyle letters which survives among the Boyle Papers and is published in volume 6, that Wotton divided the letters up into

[a] For further remarks on this subject, see Michael Hunter, 'Introduction', in id. (ed.), *Archives of the Scientific Revolution* (Woodbridge, 1998), esp. pp. 16–17.

[b] A microfilm of this volume is available as part of *Collections from the Royal Society*, project editor Paul Kesaris (Bethesda, Md., 1992): it comprises reel 10, frames 0689–1142, of *The Early Letters and Classified Papers 1660–1740. Collections from the Royal Society* also includes a parallel microfilm of *Letters and Papers of Robert Boyle*, issued in the same year: a complete catalogue of this appears in Hunter, *Letters and Papers*.

[c] E.g., the letter from David Thomas of 30 Jan. 1665 in EL T 7, that of 25 Apr. 1666 from John Wallis in EL W 1 18, or that from Israel Conradt of 28 Apr. 1672 in EL C 1 105 (see vol. 2, pp. 451–2; vol. 3, pp. 141–56; vol. 4, pp. 247–62). Many of these items were copied into the Society's letterbooks and copy letterbooks in the 18th century: though endorsements to this effect have generally been noted, we have not attempted to tabulate all such copies systematically here.

[d] E.g., the letters from Boyle to Mallet in BL 1, fols 116–17, 143–4, below, pp. 139–42, 145–7.

[e] See Hunter, *Letters and Papers*, p. xvii, and p. xiff., passim. See also *Works*, vol. 14, esp. p. 354.

chronological bundles, with separate categories for undated letters, letters concerning Biblical translations, and family letters.[a] In addition, Wotton's scrutiny of many of the extant items in the Boyle Letters is indicated in his endorsements to them, which are itemised piecemeal in the apparatus to each letter. Wotton was followed by Henry Miles, who assisted Birch in preparing the selection of letters that appeared in Birch's edition.[b] Again, Miles's annotations on the letters, and especially his red crayon numbers, are much in evidence on the extant manuscripts, as are comparable markings by Thomas Birch.[c] Moreover, both Boyle Letters vol. 7 and Early Letters OB are actual guardbooks prepared by Miles, which retain his numeration/pagination and his introductory notes.

Early Letters OB was the first section of the correspondence to reach the Royal Society, as is illustrated both by Miles's dated note to it, and by his letter to the President of the Society, Martin Folkes, dated 24 October 1745.[d] This volume falls into two parts. First, there is a general title-page to the volume as a whole – 'Original Letters of Henry Oldenburg Esquire S.R.S. Dr John Beale F.R.S. &c. to the honourable Robert Boyle &c.' – followed by a note and an inventory (described as an 'Index') of the Oldenburg letters in Miles's hand; this tallies with the final numeration to the letters that follow, though the letters themselves often also bear different numbers bearing witness to earlier stages in the process of sorting. The note, signed by Miles and dated 'Tooting August 20th 1745', reads as follows:

> The following Original Letters of Mr Oldenburg containing various particulars, which relate to the state and affairs of the *Royal Society*, both for some time before, and many years after its incorporation by Charter, are here collected together; with a view, more especially, to their affording some assistance in compiling a more extensive history of that Illustrious Body, than that we have; if such a design should hereafter be undertaken.
>
> And in order to facilitate the consulting these letters, on that, or any other occasion, they are plac'd in this Chart Book, according to the order of the time of their dates, with an Index of their contents: in which some things, which may, perhaps, appear too minute to take notice of, consider'd in themselves, are inserted, because, as they serve to ascertain circumstances of time and place &c. they may be found useful; and for the same reason, some few letters are put into this collection, which do not contain matters, in other respects, very material.

[a] BP 36, fols 180–9; see vol. 6, pp. 397–414. Certain of Wotton's endorsements on individual letters tally with the groupings in his list; see Lady Ranelagh to Boyle, 12 Oct. [1655]; Povey to Boyle, 8 May 1661; and Hyde to Boyle, 20 May 1671 (see below, pp. 193, 420; vol. 4, p. 208).

[b] See above, p. xiv. For Miles's work on the archive, see Hunter, *Letters and Papers*, pp. xiii–v, xvii–xx, xxv–vi.

[c] Miles hardly ever endorsed letters in French or Latin; Wotton, too, has left more traces of attention to English letters than to those in other languages, though his list of letters contains many evidently from continental savants which have not survived. A more surprising group lacking any marking by either man are the letters from Daniel Coxe; see vols 2–3 passim.

[d] Royal Society L & P, I. 415; this also refers to Miles's work on what is now BL 7, but no comparable presentation letter survives, so it is unclear exactly when it reached the Society.

The Beale letters which commence with OB 97 are introduced by a separate inventory and title-page – 'ORIGINAL LETTERS of Dr John Beale to Mr Boyle &c with An Index of Contents'. In contrast to the Oldenburg letters, each of which is denoted by a number regardless of how many leaves it comprised, these are paginated, and this contrasting form of reference has been followed here.

BL 7 similarly has an inventory of its contents by Miles, together with a further introductory note signed and dated 'Tooting April 23d 1747', as follows:[a]

> Original Letters and some Extracts from letters on Philosophical Subjects, written by Mr Hartlib, Dr Beale, Sir Robert Southwell, Dr Wallis, Dr Cole &c. found among the papers of the Honourable Mr Boyle; which not being sent to him (a very few excepted) were not inserted in the late collection of his works: and none of them, so far as it appears to me, have been printed in the Philosophical Transactions, or in any other tracts. These Letters &c. I humbly apprehend are not altogether unworthy of being preserved, either on account of the matters contained in them, or as they may afford a knowledge of some circumstances, which may be useful in compiling a History of the Royal Society, shoud such a design be undertaken.
>
> As they have little or no dependance upon one another; They are placed according to the order of the time of their dates, from the year 1649. to 1689. and the small number without date, are placed after them. with a paper or two, that may subserve the same design.
>
> General heads of Contents are prefixed.

This item may have been presented to the Royal Society shortly after the date of this note, or it may have reached the Society in 1769, when the Boyle Papers and Letters as a whole were presented to the Society by Miles's widow.[b] As Miles's note shows, it forms a supplement to the main series of Boyle Letters, now BL 1–6, mainly comprising letters not to Boyle, whereas they predominantly contain his actual correspondence. Exactly how the current content of BL 1–6 was arranged by Miles is unclear and this matter is not clarified by the extensive notes on Boyle letters by Miles which survive and are discussed in section 4 below. He probably grouped letters by correspondent, as in Birch's edition of the *Works*, though whether in the same sequence as that is unclear.

However, whatever ordering he adopted, this has been obliterated by a further reorganisation, evidently in conjunction with the sorting and binding of the Boyle Papers in their current form in the 1850s. This formed part of a sustained campaign of archival reorganisation by the Royal Society, which presumably resulted in the discovery of extra letters.[c] At this point, if not earlier, Boyle Letters 1–6 were reordered in a single alphabetical sequence, and this exercise was accompanied by the compilation of two sets of manuscript lists, one on blue paper and the other on lined sheets of white, the latter in the hand of the assistant librarian at that time,

[a] The volume lacks a title, but in pencil on the first leaf of the volume is the following inscription: 'Miles Collection. 57 Letters from R. Boyle's Papers as per Table following'.

[b] See Hunter, *Letters and Papers*, p. xv.

[c] Ibid., pp. xv–vi.

Walter White. Whereas White's list records an order that is identical with the present one, the lists on blue paper evidently record an intermediate stage in the arrangement of the letters, in that the items by Boyle himself come first, before A, rather than under B as at present, while there is a 'Supplement' at the end of items now redistributed in the main sequence; in addition, some items there listed as being in volume 6 are now to be found in earlier volumes in the series. A further, typed inventory of the contents of each volume was provided when they were bound in their current form in the mid-twentieth century.

A complete inventory of the Boyle Letters will be found in Hunter, *Letters and Papers*, pp. 2–16; in addition to letters to and from Boyle that are included in this edition, there are also (especially in BL 7) more miscellaneous epistolary items which he owned for one reason or another, and which do not form part of his correspondence. These are discussed in section 5 of this introduction, and are itemised in appendix 5, while some are printed in appendix 6.[a]

b. The Boyle archives at Chatsworth, Dublin and Petworth

After the Royal Society, perhaps the largest body of material is to be found in the archives of the Boyle family and their descendants. Of these, the most substantial is at Chatsworth, Derbyshire, where a significant archive survives associated with Boyle's father, the first Earl of Cork, and his heir, the second Earl of Cork and first Earl of Burlington. This deposit is at Chatsworth because the direct Boyle family line died out in the mid-eighteenth century: at that point, Lady Charlotte Boyle (1731–54), only surviving daughter and heiress of Richard Boyle (1695–1753), fourth Earl of Cork and third Earl of Burlington, married William Cavendish (1720–64), Marquis of Hartington, later fourth Duke of Devonshire, and the Boyle family heirlooms therefore passed by descent to the Cavendish family. According to the Victorian publisher of a substantial amount of this material, A. B. Grosart, the current, approximately chronological, arrangement into thirty unbound bundles and three bound volumes date from the point at which the papers came into the hands of the Devonshire family.[b] When Grosart wrote, the manuscripts were still housed at Lismore Castle, County Cork, but thereafter this material was moved to Hardwick, Derbyshire, where the Devonshire family archive as a whole was kept. When Hardwick was taken over by the National Trust in 1956, the archives were all removed to Chatsworth. As will be seen, many of Boyle's early letters survive there. After this, occasional letters survive in Lismore MSS 31–3, the chronological series of papers of the first Earl of Burlington, while Lismore 33 contains a number of documents relating to Boyle's Irish estates,

[a] See vol. 6, pp. 415–25 and pp. 426–56.

[b] *I Lismore*, i, xi. Grosart there also refers to the extensive catalogue made in the late 19th century, which is now at Chatsworth. The letters are still preserved as loose items in bundles/boxes, numbered in red crayon.

including letters from the Earl of Burlington to his agent at Lismore, Garrett Roche. One of these even enclosed a set of instructions concerning the management of Boyle's lands in a scribal hand, to which he has affixed his signature, which also appears in two documents granting powers of attorney.[a] Though such items are obviously of strong biographical interest, it has not seemed appropriate to include them here.

The principal other family holding is of the papers of the Earls of Orrery. The largest group of these is at the National Library of Ireland in Dublin; these were calendared by Edward McLysacht in 1941.[b] Puzzlingly, a handful of relevant items do not survive there but among the Orrery Papers at Petworth House, Sussex, including all the undated letters; hence it is there that the two undated letters from Boyle survive. The letters from Boyle in such deposits occur somewhat sporadically, usually relating to the assertion of legal rights on the part of Boyle and other family members.

What must once have been a further significant group of letters from Boyle to his brother, the Earl of Burlington, in 1665–7, appears to have been scattered sometime earlier this century. Items from this collection survive in the British Library; in the Cushing/Whitney Medical Library, Yale University; in the Charles Roberts Autograph Letters Collection of the Haverford College Library, Haverford, Pennsylvania; in the Burndy Library, now at the Smithsonian Institution, Washington, D.C.; and in the collection of Erik Waller, bequeathed to the University of Uppsala, Sweden, in 1950.[c] Another was exported to the United States by the autograph dealers, Rendell Associates, in 1979 and its current whereabouts is unknown, while the same is the case with one sold at Bloomsbury Book Auctions in 1991.[d] It is likely that others will turn up in due course.

c. The Hartlib Papers, Sheffield University Library

The profuse letters from Samuel Hartlib to Boyle survive only in Birch's printed edition, as do most of the much rarer letters from Boyle to Hartlib; hence by far the bulk of the material relating to Hartlib that is included here comes from that source. However, we have carefully examined the Hartlib Papers now in the University Library at Sheffield and available in transcribed form in the CDRom publication of *The Hartlib Papers* (Ann Arbor, 1992), and have included such letters or extracts from letters to or from Boyle as we have been able to identify. On the other hand, it should be pointed out that we have been strict in limiting ourselves

[a] Lismore MS 33, fols 107–8, 110, 133; see also below, p. xlviii.

[b] Edward MacLysaght (ed.), *Calendar of the Orrery Papers* (Dublin, 1941).

[c] For a summary account see Marco Beretta, *A History of Non-Printed Science. A Select Catalogue of the Waller Collection* (Acta Universitatis Upsaliensis, vol. 31, Stockholm, 1993).

[d] For these letters, see below, s.v. various dates in 1665–7, vol. 2, pp. 590–2, and vol. 3, passim.

to items that were clearly letters, in contrast to information orally transmitted from Boyle to Hartlib, to which Hartlib makes repeated reference in his *Ephemerides*; this diary-like compilation is a further section of the Hartlib Papers which it is hoped will soon be issued in edited, annotated form.[a] It should be added that, although the number of texts that we have included from the Hartlib Papers is relatively small, we have drawn extensively on that deposit in our annotations.

d. The Winthrop Papers and other MSS at the Massachusetts Historical Society

If anything, more letters actually survive in a less well-known but hardly less remarkable deposit, the Winthrop Papers now at the Massachusetts Historical Society at Boston, Massachusetts. This has a number of original letters from Boyle to Winthrop, together with various drafts kept by Winthrop of his letters to Boyle. These are now preserved in card folders in boxes in a single chronological sequence; all items formerly preserved as numbered items in bound volumes have been merged into this series.[b] In addition, a further retained draft of a letter of Winthrop's survives as part of the Trumbull Papers, now in the Connecticut State Archive at Hartford, Connecticut.[c] Also at the Massachusetts Historical Society is a further relevant deposit which forms part of the Jeremy Belknap Papers, accumulated by Belknap, one of the founders of the Massachusetts Historical Society, namely an interesting group of letters between Boyle and the Boston physician, William Avery, dating from 1679 to 1685.

e. Bibliotheek der Rijksuniversiteit, Leiden

Another seventeenth-century archive on which we have drawn is that of Christiaan Huygens at the University of Leiden. This includes various Boyle letters and ancillary items as part of the sequence of correspondence arranged in chronological order which comprises HUG 45; these are now preserved in boxes in a series of folders.[d] It should perhaps be pointed out here that, whereas the editors of the authoritative edition of Huygens's *Oeuvres complètes* were inclined to publish everything in HUG 45 as a 'letter', in our view certain such items are to be seen as copies and extracts which Huygens obtained to which this status is inappropriate, and

[a] See Mark Greengrass, 'Archive Refractions: Hartlib's Papers and the Workings of an Intelligencer', in Hunter, *Archives of the Scientific Revolution* (above, p. xvii), pp. 35–47.

[b] In the case both of the Winthrop and Jeremy Belknap Papers at the Massachusetts Historical Society, a microfilm version is available.

[c] See vol. 2, pp. 57–8.

[d] For a helpful account, see Joella G. Yoder, 'The Archives of Christiaan Huygens and his Editors', in Hunter, *Archives of the Scientific Revolution*, pp. 91–107, on p. 102.

two items that are included there as 'letters' to or from Boyle have not been included here.[a]

f. The New England Company

Boyle's role as Governor of the New England Company is evidenced by various archival deposits. Most significant are the manuscripts at the Guildhall Library, London, MSS 7936 and 7955, which form part of the Company's archive, including file copies of letters sent out as well as letters received. MS 7936, the one mainly relevant to Boyle, is an elaborately prepared volume of late nineteenth-century date, in which the manuscripts are mounted in juxtaposition with printed texts from the edition of New England Company correspondence published in 1896–7. MS 7955 comprises two further files. These are supplemented by a further letterbook now in the Alderman Library at the University of Virginia, Charlottesville, which contains one Boyle letter.[b]

The originals of the Company's outgoing letters to the Commissioners for the United Colonies in New England are now mostly lost, with one exception which for some reason survives in a volume of miscellaneous original documents from the colonial period in the Connecticut State Archive at Hartford, Connecticut; the others are presumed to have been burned in a fire at Boston, Mass., in 1747.[c] Fortunately, however, two copies of the letters for the years 1662–4 and the Commissioners' responses survive in records of the Acts of the Commissioners, one kept at Hartford, the other at Plymouth, Mass. The latter were published in full by David Pulsifer in the 1850s, having been drawn on by various antiquarians over the previous hundred years.[d] However, we have preferred to use the Hartford copy,

[a] These are (1) 'A short Information of the VII Sun's, which were observed at Dantzigk by Alderman Hevelius', *Oeuvres complètes*, iii, 288–9 (no. 871): this was indeed sent via Boyle (see pp. 287, 305) but is not a letter addressed to or from him; and (2) the untitled text printed as '[R.Boyle] à Christiaan Huygens [1661]' in ibid., iii, 328–31 (no. 890), an interesting text on hydrostatics in a scribal hand, but certainly not a letter from Boyle. In addition, one other item published in *Oeuvres complètes* (iv, 495–8) is not included here, Boyle's letter to Moray concerning Mr Clayton's diamond, which was published in 1664 as an appendage to Boyle's *Colours*, and is therefore printed in *Works*, vol. 4, p. 185ff. (see also ibid., p. xiii). It is perhaps worth noting here that two items appear in the computer catalogue and its hard-copy print-out denoted 'niet aangetroffen 30–11–84', Boyle to Hevelius, 1661, and Boyle to Hooke, [1662]; these are apparently ghosts which originated by the accidental replication of extant letters by reciprocal letters from the recipient to the sender when the computer catalogue was generated. More trivially, there is some confusion between Boyle and his father in the catalogue.

[b] For details of these items and of the remainder of the Company's MSS at the Guildhall Library and elsewhere, see William Kellaway, *The New England Company 1649–1776* (London, 1961), pp. 284–6.

[c] See G. P. Winship (ed.), *The New England Company of 1649 and John Eliot* (Boston, 1920), p. xx. The extant letter is that of 7 Mar. 1664; see vol. 2, pp. 251–3.

[d] See above, p. xivn.

which is similar but not identical, noting significant differences between the two, though ignoring the much more archaic orthography of the scribe responsible for the Plymouth copy. After 1664, communication seems to have been more haphazard and is evidenced only by the Guildhall volumes.

g. Marsh Letters

Boyle's interest in the project for printing the Bible in Irish is documented especially by a series of letters that he wrote to the divine, Narcissus Marsh. Marsh evidently preserved these as a group, and they came to light in the early nineteenth century in the lumber-room of an old house at Drumcrondra which he formerly inhabited, then tenanted by Sir Robert Langrishe. At that point the letters passed to Langrishe's son-in-law, Henry Monck Mason, who gives details of the 'extraordinary casualty' by which these letters had come into his hands about fifteen years previously in a lengthy footnote to his *Life of William Bedell* (London, 1843), pp. 299–300n. He evidently had them bound up into a quarto volume, and deposited them with the Bible Society of Ireland, of which he was Librarian. Thereafter, however, the whereabouts of the originals of the letters was forgotten, and they were long known only through a transcript of them made under the auspices of Dr C. E. H. Orpen in 1831, which survives in Archbishop Marsh's Library at Dublin (Z4.4.8); a further transcript, made by D. H. Kelly in 1864, survives in the John Rylands Library, Manchester, English MS 502 (Crawford Irish MS 96). In 1987, however, the originals came to light in the possession of the Hibernian Bible Society; they were auctioned at Christies on 21 June 1989 and then again on 26 June 1991. The text in the present edition is based on a transcript made by Dr R. E. W. Maddison after the rediscovery of the volume, which was collated with the originals while they were at Christies. The letters were at that point still in Monck Mason's binding, with each letter denoted by a number; their current whereabouts is unknown. The letters bear various pencil endorsements and notes, evidently connected with the preparation of the mid-nineteenth century transcripts, of which it has not seemed appropriate to include details. It is also worth noting that Boyle's signature to the letter to Marsh dated 7 October 1682 has been cut away, and was preserved separately when the MS was auctioned.

h. British Library

The Birch collection, now forming part of the Additional MSS in the British Library, contains a number of original letters to Boyle which evidently passed into Birch's hands in connection with his work on his edition, especially various letters from John Evelyn to Boyle; it also has an incomplete draft of Boyle's response to Henry Stubbe's commentary on the affair of the Irish stroker, Valentine Great-

rakes, in his notorious pamphlet, *The Miraculous Conformist* (1666), which was dedicated to Boyle.[a] A significant group of letters from Boyle to Robert Southwell survive among the papers of the Perceval family (created Earls of Egmont in the eighteenth century), which were acquired by the British Library in 1950.[b] Another collection is that of the Mallet family: volume 3 of this contains the principal letters from Boyle to his friend, John Mallet (Add. MS 32093). Other letters survive piecemeal, while other letters to Boyle survive in the commonplace books or letterbooks of their authors, including Nathaniel Highmore, Henry Power and John Evelyn. In the latter case, these form part of the important collection of Evelyn Papers acquired by the British Library in 1994.

i. Bodleian Library, Oxford

A similar range of holdings is to be found at the Bodleian Library, Oxford. Some letters are to be found in the extant archives of Boyle's correspondents: thus one letter to John Locke survives in the Locke MSS, while others form part of the collection of Thomas Smith. Further letters occur in larger collections, such as the Rawlinson MSS, while yet more survive in letterbooks, in these cases of John Wallis and Robert Huntington, and are referred to piecemeal below.

j. Other repositories

Beyond this, letters are widely scattered, and we have attempted to locate them wherever appropriate. Though we have done our best to seek out letters to or from Boyle wherever possible, we are under no illusions that we have located all that survive, and intend to publish a supplement to this edition in due course. We therefore hope that users of this edition will draw the editors' attention to any new finds that they make.

4. Lost Letters

Although the survival of original letters to and from Boyle is profuse, as the previous section shows, we are aware that many other letters that once existed are now lost. These fall into two categories. First, there are letters of which the original manuscript is lost, but of which we have an eighteenth-century printed text. Second, there are letters that are not now extant at all, but of the former existence of which we know either because they are referred to in other letters or because they are listed in early eighteenth-century inventories. These inventories will be

[a] See below, passim; vol. 3, pp. 93–107. For references on the Greatrakes affair, see ibid., pp. 82n., 94n. For the Birch collection, see British Library, *Catalogue of Additions to the Manuscripts 1756–82 (Add. MS 4101–5017)* (London, 1977), pp. 1–181.

[b] See especially Add. MSS 46949–50. See below, vol. 4, passim.

described at length in this section, since they represent an unusual and little-known source for an edition of this kind.

First, let us deal with the less serious, if regrettable, loss of the original manuscripts of letters which were clearly extant in the eighteenth century, when they passed through the hands of printers, but are now known only through their printed exemplars. The bulk of the letters that fall into this category comprise those printed in Birch's edition of Boyle's *Works*. Our text of them is therefore taken from Birch's 1744 edition as the earliest extant witness to the text.[a] This includes all letters to Boyle from Hartlib, Locke and other figures, and all but one of those from Hooke,[b] though it applies to by no means all of the items which Birch printed, since in other cases the manuscript *is* extant. The eminence of some of those whose letters are missing in this way might suggest that their absence could be due to the activity of autograph collectors; but the randomness of other losses suggests that they may have been accidental. It is possible that the printers were responsible, presuming that, once printed, the original letters were dispensable. On the other hand, in a letter of 17 November 1742 Miles had said to Birch; 'you will be pleasd to give the printer a strict charge to preserve the Letters because they are most of them to be sent to the Royal Society', and it is equally possible that they disappeared at a later date.[c]

Where an eighteenth-century or earlier copy exists of these texts, we have preferred this to the printed version. Thus certain letters were transcribed by John Ward in his collections for a history of Gresham College from 1726 onwards; since these appear to predate the Birch printed text, and to be nearer to their manuscript source in orthography and the like, we have used these as the basis of our text where available.[d] In at least two cases, contemporary retained copies of letters otherwise known only from Birch's printed text survive among the papers of their originators, John Winthrop and Sir Paul Rycaut, which seem to have been identical to the version sent.[e] In these cases, we have therefore preferred the manuscript version, but in cases where the retained version differs significantly from that sent, we have used the printed text (see further below, section 6).

Much more serious is the case of letters that are not extant at all. Some of these are known only from references to them in other letters: we have provided piecemeal annotations to the effect that these letters are no longer extant, and have also drawn attention to all letters falling into this category at the start of the section dealing with each year.[f] A somewhat similar subsidiary group of lost letters, which

[a] The other example of a letter known only from an 18th-century edition is that from Bathurst to Boyle of 14 Apr. 1656; see below, pp. 203–4.

[b] For the sole surviving Hooke letter, see vol. 3, pp. 119–24.

[c] Add. MS 4314, fol. 74, quoted in Hunter, *Letters and Papers*, p. xviii.

[d] See 'Miscellaneous Collections relating to Gresham College', Add. MSS 6193–4.

[e] See vol. 4, pp. 183–5 and vol. 6, pp. 335–6..

[f] However, lost letters to or from people other than Boyle have been ignored.

we have also recorded, comprises letters to Boyle noted by the second Earl of Cork in his diary, now at Chatsworth, Lismore MS 29 continuing to 1672 in three unnumbered vellum-bound volumes preserved among the Chatsworth MSS.

Other letters are known because they survived and were described within fifty years or so of Boyle's death but are no longer extant. One such minor group are the letters, mainly between Boyle and Edward Pococke, described by Leonard Twells in the 'Life of Pocock' prefixed to his edition of Pococke's *Works* (1740).[a] Much more extensive evidence comes from inventories of letters left by Boyle's principal early students, William Wotton and Henry Miles, whose records survive largely within the Boyle archive, and Thomas Birch, mostly preserved among his papers at the British Library. All of these lists include letters which are no longer extant; in addition, Birch included notes of a number of such letters in his published 'Life' of Boyle, particularly in the section dealing with the late 1640s.

Wotton's list has already been referred to. This list, now in BP 36, fols 180–9, comprises 385 letters, each entry giving name of correspondent, year and number; it is accompanied by an alphabetical index, overall comprising a characteristically painstaking piece of work on Wotton's part. It is divided up into the following categories: 'Letters from 1647 to 1660 inclusive', followed by comparable sections devoted to each subsequent decade of Boyle's life; 'Letters, ‹&c› concerning Translations of the Bible in several Languages'; 'Letters from Relations from 1652 to 1682 many without Date'; and 'Without Dates'. In most cases, this list merely gives the name of the correspondent and the year of his or her letter to Boyle, though a few entries are slightly more explicit; yet even the name and year is usually enough to make it clear whether or not the letter in question is extant, and it turns out that over half of the letters that were in Wotton's hands are now missing. What is less clear is how Wotton selected the letters for his list, since he included only a minority of those that still survive. In view of its self-contained and systematic nature, the text of this list is printed as appendix 4 of this edition, as a tribute to Wotton's editorial work and so that those interested in it can study it more fully for themselves.[b]

By contrast, although overall they include more letters, Miles's and Birch's lists are scrappier and more miscellaneous, and with one exception it has not seemed appropriate to try to reproduce them in full, as against describing them and quoting piecemeal references to the significant percentage of the letters listed in them which are now missing.[c] Both Miles and Birch frequently give brief details of content as well as the day and month as well as the year of the letter involved. Miles's lists also provide clues as to why the letters which are no longer extant have

[a] 2 vols, London, 1740, i, 57, 64–5.

[b] See vol. 6, pp. 397–414.

[c] For the one exception see pp. xxviii–ixn. For annotated texts of two more systematic lists by Miles of non-epistolary material in the Boyle archive, see Michael Hunter and Lawrence M. Principe, 'The Lost Papers of Robert Boyle' (forthcoming).

disappeared, since certain items that are no longer extant are marked 'N. W.' or 'No Worth', or endorsed with deprecating remarks such as 'unintelligible', 'useless' or 'nothing very material': there is thus reason to believe that at least some of the losses may have been associated with Miles himself. Miles's comments on certain of the missing letters clearly reflect the fact that the letters seemed to him trivial – items concerned with the management of Boyle's estates, for instance, or begging letters. On the other hand, in other cases a slightly more sinister motivation is in evidence. We know that these early eighteenth-century admirers of Boyle were concerned about his reputation, and particularly the extent to which his alchemical concerns made him look credulous to an Enlightenment audience, and it seems likely that at least some of these losses were due to conscious censorship on their part.[a]

In yet other instances, the losses may have been accidental, since certain items have disappeared which would have been of great interest for understanding Boyle's career, as Miles and Birch would surely have agreed. Of these, the most significant group is of letters from the years 1645–8, in this case apparently not letters to Boyle, as is the case with all the other items in this category, but letters from him. These appear in a list which is now BP 36, fol. 129. Indeed, there is reason to think that the items in it were preserved in a letterbook of Boyle's, from which Miles jotted down the place given on each letter, presumably with a view to assisting Birch's researches for his 'Life' by illustrating Boyle's whereabouts at various points.[b] That this is the case is suggested by the following comment of Miles's,

[a] See Michael Hunter, 'Robert Boyle and the Dilemma of Biography in the Age of the Scientific Revolution', in Michael Shortland and Richard Yeo (eds), *Telling Lives in Science* (Cambridge, 1996), pp. 115–37, on p. 131ff., reprinted in Michael Hunter, *Robert Boyle (1627–91): Scrupulosity and Science* (Woodbridge, 2000), p. 263ff.

[b] The full text of the list is as follows. Letters in it that survive are identified. In addition, the letter here given as of 1 Dec. 1645, or one of the other letters in the list, could conceivably be the undated letter to Lady Barrymore partly printed by Boyle in his 'Life': see below, p. 27. Birch states that it was written 'when he was very young'.

Mr Boyle — London 5th August 1647

At Cambridge 1 December 1645*for a little while perhaps* a month
London Feb.20 1646– was then about going to Stalbridge
London Feb ult 1646

Stalbridge	March	25 1646	
		30 1646	[to Lady Ranelagh: below, pp. 31–4]
	Apr.	14 1646	
London	June	9 1646	
	July	22 1646	
	August	25 1646	
	October	19	[altered from '29'] 1646
Stalbridge	December	18 1646	In London at short time *at* Christmas see Letter March 8th following to Mr Strowd

evidently relating to the document in question, which may also give an ambiguous clue as to the reason for its failure to survive. In a letter to Birch of 17 November 1742, Miles speaks of his work on Boyle's letters and continues:

> Since I finishd them, I have ben transcribing some things from a bound book, which I was oblig'd to do, because otherwise the book must have been destroyd, by which means other things worthy preserving ‹in› it woud have perishd [?].[a]

London	Jan	22 1646	
Stalbridge	Feb.	5 1646	
		27 1646	[to Lady Ranelagh: below, pp. 49–50]
	March	6 1646/7	then his earthen furnace was broke in coming therefore he begun Chemistry at Stalbridge [to Lady Ranelagh: below, p. 50]
		8 1646/7	
		15	
		19 1646	to Mr Hartlib [below, pp. 52–3]
		22	
	April	2	
		7	
		20	
		22	
		24	to Mr Worsley

[in left hand margin opposite the entries for 22 and 24 Apr. is the note: 'Q. *concerning* Col. Stroude']

	ult		
	May	3	*says he had spent* 2 or 3 & 40 months at Geneva [to Dury: below, pp. 57–8]
	May	8	[to Hartlib: below, pp. 58–61]
	May	17	[altered in composition]
		15	
		18, 19 1647	
London	June	1 1647	
		8	
		22	
	July	6 1647	about this time had a fit of the Stone see a drolling Letter to his Brother — without any Superscription ['drolling' was subsequently heavily deleted]
		14	
		15	
		21	

[in right hand column, opposite the entries for 15 and 21 July, is the note: 'NB Mr Hartlib wrote to him at Stalbridge May 9. 1648'; see below, pp. 65–7]

		24	
		25	

Material transliterated from shorthand has been denoted by italic. At the top of the sheet is a sum multiplying 43 by 12 to give 516; at the bottom left-hand corner is a squiggle.

[a] Add. MS 4314, fol. 73. See also the transcript of Miles's list of 'bound volumes' in Lawrence M. Principe, 'Newly Discovered Boyle Documents in the Royal Society Archive', *NRRS*, 49 (1995), 57–70, on pp. 64–5, which has as item XXIII 'Copies of Severall Letters of Mr B. to friends 1645 & 46 in Leather Covers'. Principe speculates that this could have been a letterbook of the kind postulated here, or it might have comprised literary compositions linked to those published in *Works*, vol. 13, p. 43ff.: see further below, pp. xxxiii–iv.

In his 'Life', Birch made use of certain dates provided by Miles's extant list, while he refers to similarly precise dates before and after the period covered by it, presumably because other, comparable documents formerly existed which no longer survive.[a]

The other lists by Miles that survive are as follows, falling into the following categories (it seems worth itemising all his inventories of Boyle letters rather than simply those which include lost ones).[b] We thus have various documents closely linked to the Birch edition, in which Miles totalled the letters from different correspondents, tried to estimate their length and to calculate numbers of letters by year, and listed letters sent to press.[c] Then, there are lists of some of the larger groups of letters. BP 36, fols 133–4, is a list of Hooke letters, in which Miles's dating of undated examples is seen in progress, while BP 36, fol. 150, is a list of Beale letters, with a list of Oldenburg ones in BP 36, fols 151–2 and 172 (this leaf is misplaced, and belongs between fols 151 and 152); a further, evidently earlier, listing of Oldenburg letters is in BP 36, fol. 197. The lists in BP 36, fols 150–2 clearly relate to the compilation of Early Letters OB, and the letters listed are given Roman numerals as in the extant MS.[d] Then, BP 35, fols 134–5, and BP 36, fols 153–4, are lists relating to the compilation of BL 7 (see above). BP 19, fol. 137 may also relate to this (it is endorsed 'many taken away from them for Chart book August 29 1745').[e] BP 36, fols 144–5 and 161–2, on the other hand, are more miscellaneous lists with no clear relationship to the edition; these evidently bear witness to Miles's sorting of the mass of letters from a wide range of correspondents, and they contain the highest percentage of letters now lost.

One list in the hand of Birch survives in BP 35, fol. 158, a scrap of paper listing Eliot letters linked to the edition, but the other lists associated with him are in British Library Add. MS 4229. Of these, the most significant is fols 71–3, a miscellaneous listing in alphabetical order but only up to the letter 'M'; the contents show a substantial overlap with items in Wotton's list, including many that survive and a number that were printed, as well as items now missing (in these cases, Birch gives more information about the letter in question than Wotton, which we have included below). Add. MS 4229, fols 77–8, is a further list, in an unknown hand, of 'Principal Correspondents of Mr Boyle', together with biographical notes on

[a] See below, pp. 26, 65, 75, 83. See also Birch (ed.), *Works*, i, 27, which notes that Boyle went to Bristol and Salisbury in Sept. 1647, probably on the basis of similar evidence, though this has not seemed definite enough to postulate 'letters' in this case.

[b] For further related material in BP 36 see above, p. xviiin.; see also *Works*, vol. 12, pp. l, lxi; vol. 14, pp. xlvii–viii, 356–8.

[c] BP 35, fol. 133; BP 36, fols 131–2, 135, 156, 191–2, 198; Add. MS 4229, fols 74–5.

[d] BP 36, fol. 150, suggests that Miles intended to give the Beale letters numbers comparable to those on the Oldenburg ones, but in fact this was not implemented; see above, p. xix.

[e] The briefer lists in BP 36, fols 178 (item 1) and 189, also partially overlap with the content of BL 7. BP 37, fol. 128, gives a series of sentences/phrases from letters, as if for purposes of identification.

some of the most significant of them; fols 88–9 comprise a copy of this by Henry Miles.[a] This list includes a handful of names not otherwise known in connection with the correspondence which we have not included in our itemisation of lost letters below, since in at least some cases these could be explained in terms of error.[b]

In this edition, all letters known only from the record of them in these lists have been included. In cases where the exact date of such lost letters is given, details of them have been noted at the point in the chronological sequence where they belong, annotated with such information as we have been able to acquire about their authors and likely content. In the case of letters of which we only know the year – particularly from Wotton's list – they have been grouped together at the beginning of the year, adjacent to the collected references to letters that are mentioned in existing letters from the year in question but are not extant. It may be presumed that letters listed at the start of the year are specified as belonging to that year unless otherwise stated. Letters without date have been placed at an appropriate place in the *Correspondence* in the rare cases where there are sufficient clues to make this possible, but where the information given is insufficient for any such guess to be made, they are listed in appendix 3 in volume 6.

This section therefore documents a rather tantalising aspect of the correspondence, all the more so since the letters that fall into this category illustrate Boyle's links with such significant figures as the Quaker, Benjamin Furly, no letters between whom and Boyle now survive at all. In other cases, they provide further evidence of the extent of Boyle's alchemical concerns, for instance the extensive series of letters that Boyle exchanged with John Matson of Dover, since the one such letter that *does* survive, evidently because it was among the Boyle Papers in Miles's time and only brought into the Boyle Letters at a later date, is fully alchemical in content.[c] A comparable series is that of the intriguing Christopher Kirkby, whose letters to Boyle, virtually all now lost, span two decades. By including such information as is available at the appropriate point about these letters which have succumbed to the depredations of time and censorship, we hope that we have provided a more balanced view of Boyle's correspondence than would otherwise be the case.

5. The Boundaries of this Edition

In principle, it may seem obvious what the edition of an individual's 'correspondence' should comprise, namely the complete text of all letters sent or received by

[a] It was perhaps a copy of this list that was sent by Miles to John Ward on 10 Feb. 1742: Add. MS 6210, fol. 248.

[b] The names in question are: Dr Croone; Increase Mather of New England [for a letter from him surviving only in a retained copy see vol. 5, p. 163]; Dr Needham; and Dr Thomas Willis.

[c] See Matson to Boyle, 18 May 1676, vol. 4, pp. 409–10. See also *Aspiring Adept*, pp. 151–2.

him. In fact, however, the concept of 'correspondence' and of its component parts in the form of 'letters' are both somewhat flexible; this has implications for the conception of an edition like this one which need to be explored here by way of elucidation of exactly what we have decided to include and what to exclude, and why. The core of this edition is represented by the sequence in chronological order of letters either from Boyle to a specific individual or from such an individual to him, usually signed, sealed and showing evidence of delivery through seals, postmarks and the like (all of which we have recorded). On the other hand, there are a whole series of complications concerning the exact boundaries of the material included, due partly to issues of survival and archival classification, and partly to the use of an epistolary format for purposes other than such communication. These issues will therefore be dealt with here.

First, there is a problem with letters that survive, not among the papers of their recipient, but among those of their sender. In Boyle's case, there are various letters of which he retained drafts, particularly in volume 1 of the Boyle Letters – in fact, almost all the early letters from him to members of his family of which manuscripts are extant survive in this form – while in the case of letters to him, the only texts sometimes survive in the letterbooks of their sender. A puzzling instance of this is provided by one of John Evelyn's letters to Boyle, that of 1 December 1659, which survives only in Evelyn's letterbook,[a] whereas most of his letters to Boyle are also extant either in manuscript texts received by Boyle or in the version printed by Birch from similar exemplars now lost. In such a case, it is impossible to know whether the letter was ever sent. Hence, in describing letters below, we have always indicated the source of our text, and readers must bear this in mind when interpreting them.

A more serious complication arises from the use of the letter form for purposes other than the kind of communication between individuals indicated at the start of this section. Many of Boyle's books and essays are presented in epistolary form; in addition, many such compositions by others were so addressed to him. A further complication is the fact that certain items that originated as letters to or from him were subsequently published as articles in *Philosophical Transactions*, a novel method of publication in Boyle's period which was clearly closely linked to with the correspondence network of its first editor, Henry Oldenburg. In deciding what material of this kind properly *does* belong to this edition, our approach reflects a mixture of theoretical and more pragmatic considerations.

Taking compositions by Boyle himself first, it should be noted that various of his published books take an epistolary form. This includes perhaps his most famous work, *New Experiments Physico-Mechanical, touching the Spring of the Air and its Effects* (1660), along with his earlier *Seraphic Love* (1659) and a whole series of

[a] See below, pp. 394–6. For issues arising where both a sent and a retained text survive, see below, pp. xxxviii–ix.

his later books, all of which are included in R. E. W. Maddison's 'Tentative Index' to Boyle's correspondence. In addition, certain components of other works, such as his 'Observations about Mr Clayton's Diamond' in *Experiments and Considerations touching Colours* (1664), are presented as letters, while other books have dedicatory epistles, such as *Some Considerations touching the Style of the Scriptures* (1661), which are again included by Maddison in his 'Tentative Index'. It seems to us to stretch the concept of 'correspondence' to breaking point to include such materials within it. In any case, since all these works or parts of works have already been published in *The Works of Robert Boyle*, it would be superfluous to include them here. For the same reason, we have excluded all Boyle's published contributions to *Philosophical Transactions* from this edition, regardless of whether they may have originated as letters to Oldenburg, and it has also seemed superfluous to reprint here entire letters from others which survive through being reprinted in one of Boyle's books: instead, readers are simply directed at the appropriate point to the relevant passage in *Works*.[a]

A similar state of affairs occurs with a series of writings in epistolary form that Boyle composed in his 'literary' phase in the 1640s.[b] These are really moral essays, with titles such as 'Against Confidence', or 'The Duty of a Mother's Being a Nurse, asserted'. Some are addressed to 'Madam', while others are more specifically to individuals, often fictional ones such as 'Fidelia' or 'My Mistris (when I have one, for I now meane nobody in particular and writ this but to please a Person of my owne sexe that desir'd it)'. On the other hand, certain of these items are directed to real people, in one case Mrs John Dury and in another one of Boyle's brothers – probably Lord Broghill – in the guise of 'Prince of the Round Table'. Again Maddison included these in his 'Tentative Index' of Boyle's correspondence. On the other hand, it is instructive to contrast the tone of these rather formal, literary compositions with extant 'real' letters sent at the same time, in one case, that of Broghill, probably to the same individual.[c] Their artificial character is also underlined by Boyle's use in them of words duplicated so that a choice could be made between these for literary effect, which is paralleled in his literary compositions of his early years, such as his autobiographical 'Account of Philaretus', but not in

[a] See e.g., vol. 2, p. 235; vol. 3, p. 2; vol. 6, pp. 96, 323–4. The problem of treating some of Boyle's longer contributions to *Phil. Trans.* as 'letters' is well-illustrated by some instances in *The Correspondence of Henry Oldenburg*, where merely the first and last paragraphs are abstracted for inclusion in the edition; see e.g., *Oldenburg*, iii, 547–8, 629–30.

[b] See *Works*, vol. 13, pp. xxivff., 43ff.

[c] See below, pp. 84–5; *Works*, vol. 13, pp. 61–4. See also Lawrence Principe, 'Style and Thought of the Early Boyle: Discovery of the 1648 Manuscript of *Seraphic Love*', *Isis*, 85 (1994), 247–60, on p. 251n.; id., 'Virtuous Romance and Romantic Virtuoso: the Shaping of Robert Boyle's Literary Style', *Journal of the History of Ideas*, 56 (1995), 377–97, on p. 385. For use of them as if they were actual letters, see Malcolm Oster, 'Biography, Culture and Science: the Formative Years of Robert Boyle', *History of Science*, 31 (1993), 177–226.

letters that appear actually to have been sent to real correspondents. Hence it has seemed inappropriate to treat these items as 'correspondence', and they have been omitted from this edition; on the other hand, they *have* all been included along with other juvenilia in the parallel edition of Boyle's *Works*, so the reader can seek them out there.[a]

Turning from material composed by Boyle to material addressed to him, one category of this comprises dedications of books to Boyle. These were included by Maddison in his 'Tentative Index' of the correspondence. They are also listed by J. F. Fulton in his *Bibliography of Boyle*, where a number of them are quoted in full.[b] They do not seem to us to constitute letters in a conventional sense, and we have not considered it appropriate to include them here. In any case, as with Boyle's own dedicatory epistles, it is not clear in what sense they have a status independent from their role as introductions to the treatise of which they form part, and it seems to us that it would be wholly artificial to present them as separate 'letters'.

For similar reasons, it has seemed inappropriate for both practical and theoretical reasons to treat as part of Boyle's correspondence whole treatises in published form which are presented as 'letters' to him. Perhaps the most notable example of this is a work published at Rotterdam early in 1687, entitled *Some Letters; containing an account of what seemed most remarkable in Switzerland, Italy &c written by G. Burnet to T. H. R. B.* This comprises Gilbert Burnet's memoirs of his travels while in exile during the reign of James II, and it is indeed presented as a series of letters which, as the title states, were addressed to the Honourable Robert Boyle. However, they were not sent to Boyle as individual letters at the time when Burnet wrote them, but were clearly written for circulation and publication as a group. The first that Boyle learned of them was in a letter from Burnet dated 14 June 1686, in which he explained that 'a bundle of papers' was en route which he hoped would entertain Boyle and Lady Ranelagh, in which case 'I will attain one of my main ends in writing them'. Even then, however, they did not come straight to Boyle but instead went first to Edward Stillingfleet, Dean of St Paul's, 'who I know will very soon dispatch them'. Hence, although Burnet assured Boyle that 'I had you alwaies in my thoughts' in writing these essays, it does not seem that they should be seen as part of Boyle's correspondence, and they have not been included here.[c]

The same is true of treatises that take an epistolary form and are addressed to Boyle. For instance, Henry Stubbe's pamphlet on the Greatakes affair, *The Miraculous Conformist* (1666) is so addressed, as is Greatrakes's own *Brief Account* of

[a] See *Works*, vol. 13, p. 43ff; for a commentary on them, see ibid., pp. xxiv–ix.

[b] Fulton, *A Bibliography of the Hon. Robert Boyle* (2nd edn, Oxford, 1961), p. 155ff. A new edition of this work is currently being prepared by Roger Gaskell, which will update this component of it along with the others.

[c] See vol. 6, p. 181.

himself, published later in the same year.[a] Another example of this is Thomas Barlow's 'The Case of Conscience', published in his posthumous *Several Miscellaneous and Weighty Cases of Conscience* (1692). The same applies to complete treatises presented in epistolary form that have never been published, such as the essays on casuistical topics that Barlow prepared for Boyle, one of them running to over 100 pages,[b] or to such tracts in the Boyle Papers as John Clayton's lengthy account of Virginia, though this too opens with the words 'Worthy Sir'.[c] It has seemed inappropriate to include these here, since, for all their epistolary mode of presentation, these are clearly not part of Boyle's 'correspondence' in any meaningful sense. On the other hand, we *have* included various articles published in *Philosophical Transactions* that seem to have originated as letters to Boyle, including William Cole's Latin account of a prodigy at Worcester and John Wallis's essays on his experiments with teaching a deaf man to speak and his hypothesis concerning the movement of the tides, in the last case restoring from the MS version surviving at the Royal Society the original address, concluding paragraph addressed to Boyle and subscription that were omitted from the published text.[d]

A related issue is that of material enclosed with letters to Boyle: again, in deciding whether to print such material as an annexe to the letter which it accompanied or merely to refer to it, we have been swayed by a combination of theoretical and practical considerations. Thus it would clearly be both inappropriate and impractical to include the text of a published book enclosed by its author to Boyle with a covering letter that we *have* included. We have similarly taken the view that to include a whole bundle of miscellaneous material that may have been enclosed with a letter would have a distorting effect on the edition, and have therefore simply referred to it: a case in point is provided by the texts that evidently once accompanied John Matson's sole extant letter to Boyle, which are now to be found in the Boyle Papers.[e] On the other hand, when an enclosure is clearly integral to a letter, being presented as a separate annexe largely as a matter of convenience but being referred to in the text of the letter itself (which often does not make sense without it), we have appended it to the letter in question.

The fact that they originated as enclosures in this way explains the presence among the Boyle Letters at the Royal Society of a number of letters neither to nor from Boyle which, though now filed alphabetically by author's name in the order imposed by Victorian archivists, clearly belong with the letters with which they

[a] Henry Stubbe, *The Miraculous Conformist* (London, 1666), dated 18 February 1666; *A Brief Account of Mr Valentine Greatrakes* (London, 1666) (for one Boyle letter that we *have* abstracted from this work, see vol. 3, pp. 160–1). On this entire episode, see ibid., p. 82ff.

[b] Queen's College, Oxford, MS 275, item 6; 285, item 5; and 294. For a brief account of this material, see Hunter, *Robert Boyle: Scrupulosity and Science* (above, p. xxviii), pp. 78–9.

[c] This treatise is now scattered between BP 39 and 44; see Hunter, *Letters and Papers*, pp. 64, 71.

[d] See vol. 2, pp. 11–18; vol. 3, pp. 141–56; vol. 4, pp. 199–203.

[e] BP 29, fols 110–46; see vol. 4, pp. 409–10, and above, p. xxxin.

were enclosed and within which they are referred to. Indeed, we have scrutinised both the Boyle Letters and the Boyle Papers for items which may have originated thus, although separated from the letters which they once accompanied by accidents of archival reorganisation, and have included a number of them here, including Latin poems sent to Boyle, various documents associated with the Georges Pierre affair and others connected with the project which Boyle sponsored for publishing the Bible in Irish.[a]

On the other hand, even after this, we are still left with quite a substantial residue of material in the form of letters to be found among the Boyle Letters which are neither to nor from Boyle and which cannot be connected with any extant letter either to or from him. All of these items were included by Dr Maddison in his 'Tentative Index' of Boyle's correspondence, and according to one definition of Boyle's 'correspondence' it might have seemed appropriate to include all such items from the Boyle Letters in this edition. However, notwithstanding their presence there, we have not felt it appropriate to include these items in this edition: both the reasons for their presence among the Boyle Letters and our reasons for excluding them therefore need to be discussed here.

In some cases, these letters survive in the Boyle archive because their senders evidently simply used Boyle as a forwarding address, with no intention that the letters in question should remain in his hands. A case in point is the letter from Antoni van Leeuwenhoek to the Royal Society dated 12 January 1689, which survives among the Boyle Letters along with a letter addressed to Boyle personally with which it was sent, which we *are* including; but it has not seemed appropriate to include the Royal Society letter because it would be completely anomalous here, forming as it does an integral part of the longer series of letters on related topics that van Leeuwenhoek addressed to the Royal Society at this time (and also published), the archival survival of which here is almost entirely fortuitous.[b] A further case of a group of material surviving among the Boyle Letters although they were intended to be forwarded via him to another party is the group of letters from the Italian naturalist, Silvius Boccone, in BL 1, fols 76–87, which were actually intended for John Ray.

In other cases, letters neither to nor from Boyle which survive among the Boyle Letters seem to have come into his hands in much the same way as did other miscellaneous manuscripts composed by others, namely because he was interested in

[a] BL 1, fol. 102; BL 4, fols 14, 61–2; BL 6, fols 74–5; BP 35, fols 210–12; BP 36, fols 42v–4. See below, pp. 415–26; vol. 5, pp. 13–14, 125–6, 265–71.

[b] At one point, a further such item evidently existed in the archive, accompanying the original of the letter from van Leeuwenhoek to Boyle of 6 August 1687 which is now known only from Birch's published text of it. In Birch's edition, this is accompanied by a truncated version of an English translation of another of van Leeuwenhoek's Royal Society letters, which it has not seemed appropriate to include here for the same reason; see vol. 6, p. 229n.

the information that they contained (or because whoever forwarded them to him thought he might be). Again, it has not seemed appropriate to include these in the *Correspondence*. In some cases, Boyle is a third party referred to in the letter or document in question: this evidently explains why certain Oldenburg letters, or letters between Sir Robert Moray and Christiaan Huygens are to be found here.[a] Others deal with topics such as natural historical and ethnographic enquiries, theological controversy, missionary work, the exploitation of mineral sources, and cases of witchcraft and visions. Their presence in the Boyle Letters as against the Boyle Papers is in many cases due simply to the zeal of Wotton, Miles and their Victorian successors in creating a category of letters separate from Boyle's other literary remains, since it seems clear that many of them were originally filed with papers on the topics to which they relate. Indeed, in some cases ancillary items are still to be found in such locations among the Boyle Papers. A particularly clear case of this is the copy in the hand of Boyle's amanuensis, Robin Bacon, of a letter from Virginia addressed 'Dear Friend' and signed 'P.S.', now Boyle Letters 6, fol. 53: for, although placed among the Boyle Letters because of its epistolary format, this clearly belongs with a series of extracts of letters dating from between March 1686 and June 1687 from the figure in question, there identified as P. Smith, which now survive in Boyle Papers 39, fols 182–6.[b]

A complete list of the items among the Boyle Letters that we have excluded from this edition is to be found in appendix 5, along with items in epistolary form in the Boyle Papers; in each case, sufficient has been said about the content of the document in question to give some indication as to why Boyle might have wanted to keep it. Though we have attempted to be reasonably consistent in our policy of excluding material that properly does not belong to the *Correspondence*, we have tried not to be unduly rigorous, and both in the text itself and in appendix 6 we have occasionally included either in full or in extended summary certain items which it seemed helpful for the reader to know about. Thus there are a few letters which are ambiguous in their destination, for instance being addressed to Boyle on the cover but to the Royal Society within; it has seemed worth including these in the edition for the sake of completeness.[c] In addition, four letters included by Birch in his edition although neither to nor from Boyle have been included, while, for the same reason, we have also included various documents that survive among the Boyle Letters relating to the schemes for translating the Bible into Gaelic with

[a] See vol. 6, p. 415ff.

[b] For other examples of material in the hands of Boyle's amanuenses which must have been commissioned by him, see, e.g., BL 2, fols 90–1 (Warr), 98–9 (Bacon), 130–1 (Bacon); BL 4, fol. 56 (hand C).

[c] See especially that from Schröder, 27 Sept/7 Oct. 1674, vol. 4, pp. 390–3. Cf. *Aspiring Adept*, p. 296n.

which Boyle was associated, although they are not letters either to or from Boyle and are not referred to as enclosures to any extant letter to him.[a]

A similar anxiety to ensure completeness has led us to include two items printed as letters from Boyle in *The Correspondence of Henry Oldenburg*, although in our view they are more in the nature of prefatory epistles than letters – in one case comparable to some of the apologetic notices by Boyle published by Birch in his 'Life' of Boyle and reprinted in volume 12 of *The Works of Robert Boyle*, while in the other the text in question may not even date from Oldenburg's lifetime. For the sake of completeness, we have placed these in appendix 2, in which we have also included a third, comparable text which survives in BL 6, fol. 95.[b]

Lastly, it is worth recording here that we have ignored certain forged letters purporting to be to or from Boyle. These stemmed from the notorious Vrain-Lucas affair in the late nineteenth century, when the collector Michel Chasles purchased some 27,000 forgeries from Denis Vrain-Lucas, including three letters purporting to be by Boyle, two from Huygens to Boyle and a whole series supposedly from Pascal to Boyle.[c]

6. *Editorial Methods*

a. Choice of copy text

The text of each letter is taken from the best extant copy, a holograph manuscript, if this survives, or an early manuscript version, or, if no manuscript is extant, from the earliest extant witness to the text, for instance the printed version in Birch's edition of Boyle's *Works* (obviously we have used the 1744 edition, as closest to the original MSS on which it was based, rather than the reprint of 1772).

Complications arise in cases where more than one version of a letter is extant, and we have dealt with these as follows. Our presumption has been that the 'primary' version of the letter is that received by the person to whom it was addressed; in cases where a further copy was retained by the sender, we have regarded this as a secondary witness, though, insofar as it may differ from the copy as sent, we have recorded any such variants in endnotes. This particularly applies in the case of John

[a] In fact, they *are* referred to in the letter from James Kirkwood to William Wotton of 22 June 1702, published in *RBHF*, pp. 107–10, with which they were evidently enclosed: however, because of their relevance to the letters between Boyle and Kirkwood included here, it seemed more appropriate for them to be published here than there. For the other non-Boyle letters published by Birch, see vol. 2, pp. 423–9; vol. 6, pp. 426–9, 447–9.

[b] See vol. 6, pp. 356–61.

[c] See Maddison, 'Tentative Index', p. 185, where the key references are given. See also Hunter, *Archives of the Scientific Revolution* (above, p. xvii), p. 57n.

Evelyn – not only with his letters to Boyle but more generally.[a] Evelyn frequently retained copies of letters in his extant letterbook, and he often embellished these after dispatching the 'original'. Such variants are noted here, but our text is derived from the copy received by Boyle. This even includes cases where the 'received' letter survives only in Birch's printed text, whereas Evelyn's retained copy is still extant in seventeenth-century manuscript, since there are significant differences in wording between the two: for instance, in the letter to Boyle of 9 August 1659, Evelyn's retained copy lacks the word 'capricious' in the phrase describing the artisans with whom he was forced to work in writing the history of trades – 'mechanical capricious persons' – that has become well-known, yet there is no reason to think that that was lacking in the MS version from which Birch's text was derived.[b]

A comparable case is presented by the lengthy letter from Lorenzo Magalotti to Boyle of spring/summer 1672, where we have two almost identical texts, one among the Boyle Papers and the other among Magalotti's manuscripts in the Archivio di Stato in Florence. Both are scribal copies, and we presume that both are based on a holograph original now lost.[c] At first, since the Boyle Papers version is incomplete, it might have seemed best to follow the Archivio di Stato version, which also includes various marginal glosses lacking in the Boyle Papers version. On the other hand, the Boyle Papers version was undoubtedly that received by Boyle, and the marginal references with which the Archivio di Stato copy was embellished were evidently added to that for the benefit of an Italian audience: most of the notes comprise references to Boyle's writings which Magalotti evidently presumed that Boyle did not require, while their status is confirmed by the fact that one of them provides a gloss on the word 'Beefeater' for the benefit of an non-English audience.[d] Hence we have followed the Boyle Papers text as far as it goes, relegating the embellishments to the Archivio di Stato text to footnotes.[e]

An analogous state of affairs applies in the case of certain letters from John Winthrop to Boyle. Here, matters are complicated by the uncertainties of Atlantic communication in the seventeenth century, when letters were often lost, as recorded in Winthrop's letter of 29 October 1666, where he reports a ship being taken by the Dutch and all the letters being thrown into the sea. 'The casualties

[a] For a discussion see Guy de la Bédoyère, *Particular Friends: the Correspondence of Samuel Pepys and John Evelyn* (Woodbridge, 1997), pp. 18–21. See also *RBHF*, p. 84ff.

[b] See below, pp. 336–7. For background, see Michael Hunter, 'John Evelyn in the 1650s: a Virtuoso in Quest of a Role', in *Science and the Shape of Orthodoxy* (Woodbridge, 1995), pp. 67–98, esp. pp. 79–80.

[c] See vol. 4, pp. 262–314.

[d] Ibid., p. 295n.

[e] The absence of the last section of the letter may well be purely accidental – as with other losses in the Boyle Papers, and as is suggested in this case by the fact that an entire gathering is missing – but it is possible that it was consciously destroyed by someone (Boyle, Wotton, or conceivably Miles) who disapproved of Magalotti's view of Boyle's religiosity.

of the sea who can prevent', he reflected, and clearly such mishaps made duplication prudent.[a] An example is provided by a letter that Winthrop sent to Boyle on 27 September 1670, which must have arrived, since it was printed by Birch. In addition, however, Winthrop retained a version dated 28 October which gives the same information but is slightly differently worded throughout; in this case, it has seemed best to include the second version in full after the version that Boyle actually received.[b] A similar duplication occurs with a letter from the New England Company to the Commissioners in New England in 1669.[c] More puzzling is the case of a letter from William Avery to Boyle dated 2 August 1683, which survives in the Massachusetts Historical Society and is marked: 'a letter to Mr Boyle august 83 that was not delivered but came back againe'. Again, we have included this, although Boyle clearly never received it.[d] This case raises similar issues to those discussed at the start of the previous section, accentuating the need to take the nature of the survival of the text of a letter into account in interpreting it.

b. Dating of letters

Letters are arranged in chronological order. In general, this is a straightforward matter since most letters bear an exact date. However, two complications arise. One relates to letters sent to Boyle from the Continent and concerns the difference between the English and Continental calendar. As is well-known, the calendar introduced by Julius Caesar in 45 BC reckoned each year as comprising 365 and a quarter days, which was a slight over-estimate; by the sixteenth century, this had led to a discrepancy of ten days between the calendar year and the solar year, and in 1582, Pope Gregory XIII reformed the calendar by removing ten days. However, this was not accepted in Protestant countries like England until after Boyle's lifetime, and hence throughout our period there is a discrepancy of ten days between English dates and those given in much of continental Europe. In such cases, we have denoted the date in the form '3/13 January' or '24 September/2 October', and have placed the letter at the point in which it would appear according to its date in the English calendar. A more minor calendrical matter which may be noted here is that we have throughout reckoned the year as starting on 1 January, despite the common practice in Boyle's period of beginning the year on 25 March, the feast of the Annunciation.

Secondly, a number of letters bear an incomplete date or no date at all.[e] We have used internal clues in such letters to date them as precisely as possible and have

[a] See vol. 3, p. 259.

[b] See vol. 4, pp. 183–7. For our preference for Winthrop's retained MS of the first version of the letter to that printed by Birch, see above.

[c] See vol. 4, pp. 132–5. See also vol. 2, p. 354 and n.

[d] See vol. 5, pp. 419–21.

[e] For a list of these see Maddison, 'Tentative Index', pp. 180–4.

placed them in the chronological sequence accordingly. When the date of a letter is conjectural, it has been enclosed in square brackets. The rationale of our decisions on such matters are explained piecemeal in the apparatus to each such letter. A residue of letters that we have not been able to date at all – comprising only some eleven extant letters, though many more brief descriptions of lost letters, where the available clues are obviously much more restricted – appears as appendix 3.[a]

c. Transcription method

Manuscript material is presented according to principles used in *The Works of Robert Boyle*, which itself followed the method established in *Robert Boyle by Himself and his Friends*.[b] Briefly, texts are transcribed literally, retaining original capitalisation, punctuation and spelling, even when this was eccentric, as was the case with women and others who did not receive a formal education at the time. We have been sparing with the use of 'sic', but have deployed this where the reader might have been puzzled. The ampersand has been retained. Underlining in the original has been shown by the use of italic. Words or phrases inserted above the line in the original have been denoted ‹thus›. Words or passages deleted or altered in the original are recorded in endnotes (see below). Editorial additions are indicated in square brackets: these include punctuation added to assist the reader, and words or letters obscured by damage to the manuscript. Where symbols are used for chemical substances, quantities and astrological signs, we have reproduced them as they appear in the original but have added transliterations in square brackets for the convenience of the reader. Any square brackets that appear in the original are specifically noted as such.

Standard abbreviations have been silently expanded, with square brackets being used in doubtful cases; the thorn has throughout been expanded to 'th', and u/v and i/j have been modernised, with 'u' and 'i' being used for vowels and 'v' and 'j' for consonants. Catchwords in the original have been ignored unless they fail to tally with the text that follows. In general, paragraphing reflects the original, but additional spacing has occasionally been added for clarity (where this occurs, it is indicated in an accompanying note). Marginal references in the original (e.g., to the Bible) have been shown as footnotes (see below), but insertions which appear in the margin with the intention that they should be incorporated in the text have been placed there (with an accompanying editorial note stating this). The foliation of the original document has been indicated by the insertion of 'fol. 2' between soliduses at the point where each recto or verso of the manuscript text begins.

[a] See vol. 6, pp. 362–96

[b] For an exposition of its rationale, see Michael Hunter, 'How to Edit a Seventeenth-century Manuscript: Principles and Practice', *The Seventeenth Century*, 10 (1995), 277–310.

(Verso has been denoted 'v', but we have not used 'r' for recto, presuming that it can be understood if the verso is not specified). Where a letter is not foliated but is denoted by a single archival entry covering two or more leaves (as is the case, e.g., with the Oldenburg letters in Early Letters OB), we have used the form '46 (1)v', i.e., the verso of the first leaf in item 46.

In the case of texts in Latin, we have reproduced accents that appear in the original, particularly the use of the circumflex to signal the ablative case, especially in first declension nouns, and the grave to denote adverbs; on the other hand, we have omitted the tilde placed by many German-speaking writers over the letter 'u', reflecting a vernacular usage which they accidentally carried over into Latin. We have also decided not to reproduce the archaic dotting of the letter 'y'. The usage of u/v and i/j has been modernised as in English texts. with 'u' and 'i' for vowel sounds and 'v' and 'j' for consonantal sounds. Though we have generally expanded contractions in Latin as well as English, in the case of prescriptions we have sometimes left contractions unexpanded, as this is how they were habitually used at the time, and it is not clear that those deploying them would have understood them in expanded form.

In the case of French texts, we have regularised the use of accents: in the original MSS it is often hard to tell which letter an accent is supposed to apply to. If in doubt, we have followed modern usage. As in Latin, 'u'/'v' and 'i'/'j' have been regularised and the archaic dotting of 'y' suppressed. In addition, words written together that are normally separate have been separated: thus 'ilya' has been transcribed as 'il y a'.

d. Translations

In the case of letters or parts of letters in languages other than English, a translation is printed in smaller type on the same page as the text in the original language. Unless otherwise stated, Latin texts of a literary or non-technical nature may be presumed to be the work of David Money and French ones of Teresa Bridgeman, and in these cases only minor editorial intervention has occurred. On the other hand, Latin and French material of a technical nature, especially when chemical or alchemical, has been extensively revised by Lawrence Principe on the basis of their original drafts. Letters in other languages have been dealt with respectively by Lodewijk Palm (Dutch), Philip Weller (German), and Lawrence Principe (Italian and Spanish).[a] In all cases, the objective has been to give a fluent

[a] See vol. 5, pp. 118–20 (Werner), 150–2 (Wilson); vol. 4, pp. 262–314 (Magalotti); vol. 6, pp. 302–4 (Canzano), 429–33 (Settala). In the case of van Leeuwenhoek's letters (vol. 4, pp. 416–25; vol. 6, pp. 282–3) we have followed the translation given in the modern edition of his correspondence in the first two cases, and a contemporary English translation preserved as BL 3, fol. 136, for the third. The translation of Viviani's letter to Southwell (below, pp. 431–4) is adapted from that by W. E. K. Middleton.

text retaining something of the structure and flavour of the original. Technical terms have generally been rendered in their seventeenth-century form to avoid anachronism and recourse may be had to the glossary for their elucidation, though where alternatives exist, the form familiar to the modern reader has been preferred (e.g., 'red lead' rather than 'minium').

e. Annotations

Annotations take the following form. Textual notes on the letters have been placed at the end of the volume: these record deletions, alterations, and significant differences between texts where more than one version survives. Substantive notes appear at the bottom of the page. These are divided into two groups:

(a) Authorial footnotes, marked with asterisks, daggers, etc. These are biblical references or such other shoulder-notes in the originals, provided particularly by correspondents like Thomas Barlow when giving Boyle learned disquisitions on topics of mutual interest. They are printed verbatim but, if appropriate, annotated in square brackets.

(b) Editorial footnotes, marked with lower case letters. These give identifications of individuals mentioned in the text and full references to books and events referred to. They also clarify any other aspect of the text that merits comment. For instance, we have often identified biblical references and quotations for which the author does not himself give a specific citation. We have also sought to identify and translate all allusions to classical texts. The aim has been to provide information that is necessary for the text to be fully understood, although we have tried to refrain from gratuitously commenting on the information that the text itself provides. It is worth noting here that we have used our discretion in deciding which allusions on Boyle's part are precise enough to be worth attempting to elucidate (and our record of nescience should be taken as a signal that we have attempted such identification and failed). We have also been sparing in elucidating Boyle's topographical references unless they are particularly liable to confuse the reader. We have given bibliographical citations where appropriate, but have not bothered to make repeated reference to standard works such as the *Dictionary of National Biography* and the *Dictionary of Scientific Biography* (though we have occasionally referred to specialised discussions in the latter). In citing writings by Boyle, we have used the standard short-titles deployed in *Works*.

f. Identification of correspondents and biographical guide

Most letters are clearly signed by identifiable individuals, whom we have briefly commented on in footnotes. In general, we have followed the spelling of the correspondent's name that they themselves used, though we have altered this in a

handful of cases (e.g., where a Latinised form was used of a name that is more familiar in the vernacular). In cases where a letter is unsigned or unaddressed and the identity of either its author or recipient has been conjectured from internal clues, the relevant names are enclosed in square brackets.

Whereas most correspondents and figures mentioned in the text are identified piecemeal or by cross-reference at the point at which they appear, we have in each volume given biographical notes on the handful of people whose names recur so frequently that it would be irritating to the reader if a cross-reference appeared on every occasion where they are mentioned. This applies to between three and ten figures per volume. Our notes are fairly spare, but we have attempted to give bibliographical citations so that the reader can locate further accounts of the person in question for him or herself.

g. Glossary

The glossary provides a list of technical terms and obsolete words used in the correspondence; for the convenience of the reader, this is reproduced at the end of every volume. Our policy in compiling this has been as follows. We have generally excluded words that appear in the *Concise Oxford English Dictionary* (9th edition (1995) and subsequent editions) unless they are highly unfamiliar or are used to mean something not indicated there. Neither have we included words that the author himself indicates that he perceived as unusual and which he elucidates in the text, usually terms specific to a particular country or craft. Readers should also make some allowance for unfamiliar spellings of familiar words, which are not included here. A further complication is provided by the use of Latin words as a substitute for English ones; in cases where these are simply Latin equivalents of non-technical English words, we have provided translations of them in footnotes at the relevant point in the text. On the other hand, where they are clearly to be seen as technical terms, they are included in the glossary alongside English ones. As will be seen, the glossary includes numerous Latin and English technical terms which frequently recur, such as 'lapis calaminaris' or 'sugar of Saturn'. In elucidating them, we have used a range of contemporary and modern sources but we have not noted these except in the case of words given a specific meaning by a particular individual.

7. Headers and Footers

Various matters are dealt with in the notes at the head of each letter, and at its foot. Much of this information is fairly self-evident, namely details of the source of the text used for each letter, of any other MS versions, and of the places, if any, where it has previously been published. However, the following matters seem worthy of

comment, some of them relating to the header and others to the ancillary notes on seals, postmarks and endorsements which appear in a matching position at the end of each letter.

a. Handwriting

Where we are confident that a letter is written in the hand of the person who signed it, we have described it as 'holograph'. Problems arise with letters from little-known figures of whose handwriting it would not be easy to find specimens for comparison, and when in any doubt we have refrained from making so precise a claim, instead more neutrally describing the letter as 'original'.

In the case of letters from Boyle, matters are complicated by the fact that, from the early 1650s onwards Boyle rarely wrote more than brief passages in his own hand, instead being dependent on amanuenses to put down his ideas in written form.[a] Over the remainder of his career, there was a significant turnover in the amanuenses he employed, and a number of them can be identified. In Boyle's later years, a name can be given to many of his amanuenses; earlier, it is necessary to label them in more anonymous ways, by using alphabetic labels. Perhaps the commonest hand from the 1660s is hand E, a flowing, easily legible hand, while the other hand that occasionally appears in the correspondence is hand F, which is more angular in form. A further distinctive group, also denoted by letter, is of hands of amanuenses who worked for Boyle in the years around 1680: hands A, B, C and Z.[b] However, most of those whose handwriting is used in items dateable to Boyle's later years can be identified by name. Most notably, there is Robin Bacon, whose neat hand is perhaps commoner than any other in the Boyle archive as a whole, whose activity is in evidence from the 1670s to the end of Boyle's life. Two other amanuenses who worked for Boyle over a comparable period were Thomas Smith and John Warr, Boyle's servant, 'publisher' and executor. A further figure whose hand can be identified is Hugh Greg, who evidently started working for Boyle c. 1680.[c]

In cases, particularly in Boyle's early years, where the copy is clearly by an amanuensis but one whom we have not been able to identify, we have used the term 'scribal hand', and the same is also true of letters from others which are in a different hand from the signature and which seem to have been written by a scribe.

[a] He had already sometimes used amanuenses before this, one of them called John Jay; see Hunter, *Letters and Papers*, p. xxi.

[b] In the case of hand C, this represents a revision of Hunter, *Letters and Papers*, where 'C' was used to describe a rare hand of which no unproblematic specimens survive, and the hand here identified C was not differentiated from Boyle's own. See Michael Hunter and Edward B. Davis, 'The Making of Robert Boyle's *Free Enquiry into the Vulgarly Receiv'd Notion of Nature* (1686)', *Early Science and Medicine*, 1 (1996), 204–71, on pp. 212–13n., and *Aspiring Adept*, pp. 225n., 233n., where hand Z (not identified in Hunter, *Letters and Papers*) is also commented on.

[c] For further details see Hunter, *Letters and Papers*, p. xxxff.

b. Paper and Format

Letters were written on folded sheets of paper, in a fairly standard range of formats. The original sheet was usually of pot or foolscap size, the former approximately 30 cm. by 40 cm., the latter about three centimetres larger in each dimension, though there was a significant amount of variation in such sizes, which it has not seemed appropriate to tabulate in detail.[a] The sheet might be folded once prior to writing so as to give two folio leaves, each of half the size of the original sheet, or it might be cut in half prior to being folded, thus giving a pair of leaves of approximately a quarter of the size of the original. It was also possible to repeat this process, thus giving rise to an 'octavo' format. (Note that in the text below, 'leaf' always refers to the end-product of such cutting and folding, not to the original sheets of paper.) In the headnotes, these standard formats have been differentiated by the terms 'Fol' (for 'folio'), '4°' (for 'quarto') and '8°' (for 'octavo'). The number that follows after the solidus is the number of leaves. '2' implies that they are conjugate; if there are two separate leaves, this is denoted '1+1'. In cases where two pairs of leaves are folded one within the another, this is explicitly stated.

Generally, the letter was started on the recto of the first of the leaves thus formed, continuing onto the verso and/or the recto of the second leaf as required. We have not bothered to state that the address is on the original outside leaf, most commonly the second verso (though there were exceptions to this: for instance, Thomas Barlow habitually used the recto). It is often possible to tell how a letter was folded up for sealing and dispatch, and this was most commonly done by folding it in three and then in three again, though there are variants on this. It has not seemed appropriate to attempt to systematically record such information here. On the other hand, the lack of any address or postmarks should be noted, as the lack of such signs of dispatch may imply that a letter was a retained copy.

We have not attempted to provide a record of watermarks. On the other hand, what we *have* recorded are any abnormal features of a letter's presentation, particularly ones indicating an abnormal degree of formality. Thus sometimes gilt-edged paper was used, which we have noted. In addition, certain letters use 'significant space', in other words extra space either between the text of the letter and the 'salutation' (i.e., the address at its head), or between the end of the text and the 'subscription' (i.e., the entire formula for signing the letter off, ending with the signature).[b] In a handful of cases, the subscription is itself spaced out so that the signature appears right at the bottom of the page. These practices are commonest

[a] For a catalogue indicating the slight variations of size within each category in Boyle's period, see R. W. Chapman, 'An Inventory of Paper, 1674', *The Library*, 4th series 7 (1927), 403–8. The sizes given are evidently of folded sheets. For a slightly wider sample of paper sizes, see Philip Gaskell, *A New Introduction to Bibliography* (Oxford, 1972), pp. 72–5.

[b] For fuller information on such practices see Jonathan Gibson, 'Significant Space in Manuscript Letters', *The Seventeenth Century*, 12 (1997), 1–10.

in letters addressed to Boyle from Continental savants who were not personally known to him, though they occasionally appear in letters from English correspondents. They are not very frequent: evidently, by this period such formal procedures were becoming less common than had been the case earlier in the century.[a]

c. Seals

Appended to each letter are notes indicating whether a seal either survives or once did, together with concise information about the designs on seals that are extant, most of it by Roger Fearnside. Hitherto, seals have generally been ignored by the editors of seventeenth-century correspondence, yet clearly they give significant information which ought to be recorded – in terms of claims to pedigree, or the choice of symbolism in non-heraldic seals – while in the case of anonymous or pseudonymous letters they may give clues to identification.[b]

Certain items of terminology require explanation. 'Seal missing' implies that there is evidence that a seal was once present which is now lacking. We have very occasionally used the formula 'no seal' to imply that there is no reason to believe that a seal ever existed (mainly in juxtaposition with notes on impressions of other seals that are present due to the letters being pressed together during more recent storage); if nothing is said, it can be presumed that no seal is present. 'Impression' means an impression in the paper of the letter. To avoid confusion, we have avoided using this term in describing the seal itself. It may be presumed that the seals are of red wax unless otherwise stated.

Our aim has been to give as definitive an account of the design on each seal as possible. Italic has been used to describe the heraldic elements, i.e., the blazons of arms and coats, though in many cases the seal is too incomplete for proper technical precision to be used. We have tried to give a full description at the first appearance of the seal; however, this is sometimes based on study of better-preserved specimens on subsequent letters, and, where a particularly good example survives, we have sometimes specifically drawn attention to it. In cases where the design is indistinct, it should be noted that 'perhaps' generally implies uncertainty concerning the whole device, whereas '[?]' has been used for uncertainty about a specific element within it.

[a] Cf. the remarks of Susan Whyman, '"Paper Visits": The Post-Restoration Letter as seen through the Verney Family Archive', in Rebecca Earle (ed.), *Epistolary Selves: Letters and Letter-writers, 1600–1945* (Aldershot, 1999), pp. 15–36, on p. 24 and n. 114.

[b] For some pioneering comments on the significance of seals, see David Stevenson, 'Masonry, Symbolism and Ethics in the Life of Sir Robert Moray, FRS', *Proceedings of the Society of Antiquaries of Scotland*, 114 (1984), 405–31, on pp. 412–13. One edition in which seals *are* often reproduced in juxtaposition with the letters on which they appear is *Oeuvres complètes*.

In order to describe the seals as succinctly as possible, we have made extensive use of fairly technical heraldic terms, which we have not attempted to explain in full. Many of them appear in the *Concise Oxford English Dictionary*; for others, we recommend perusal of Stephen Friar (ed.), *A New Dictionary of Heraldry* (Sherborne, 1987), which also includes a good bibliography on the subject.

By no means all the seals are heraldic, and we have tried to differentiate non-heraldic from heraldic designs. The former turn out to be perhaps surprisingly common, including various antique heads and other devices; often, the same person used one or more such device in addition to a heraldic seal.[a] A good example of this is provided by Boyle himself, whose usage may be briefly summarised here. Boyle's proper heraldic seal, found (for instance) on two documents granting power of attorney dated 10 March 1683 and 30 July 1684 that survive as Chatsworth MS Lismore 33, fols 110 and 133, comprises a shield with a variant on his family arms: *per bend embattled, a martlet for difference*. However, his letters are sometimes sealed with what is evidently the seal of his amanuensis, John Warr.[b] In addition, various of his letters to Narcissus Marsh and others in the 1680s have a seal with a monogram 'TDR', probably another seal that he 'borrowed' from someone else. The same is evidently the case with an earlier seal with the initials 'IM', perhaps for John Mayow,[c] while such earlier letters as those to John Mallet of 23 September 1653, those to the second Earl of Cork of various dates in 1659 and those to John Winthrop of 19 and 28 December 1661 bear what are evidently also borrowed seals, in these cases heraldic ones.[d] On the other hand, his surviving letters from the 1660s more commonly have non-heraldic devices, including an antique head, evidently of a Roman emperor; a classical figure apparently holding a bow; and a motif with a skeleton between a rosebush and branch holding an hourglass, perhaps to denote mortality.[e]

[a] See, for instance, the 'set' of seals of Peter Venables, Baron of Kindarton, which appear among Elias Ashmole's collection of seal impressions in Bodleian Library, Oxford, MS Ashmole 1138, fol. 91: Venables had five seals, one of them non-heraldic. In addition, Ashmole's collection contains many examples of impressions of antique gems showing classical busts, etc.

[b] See, for instance, the seal on various of his letters to his brother and sister-in-law, the Earl and Countess of Orrery (vol. 4, passim); this is also used to seal his bond for his subscription to the Royal Society in 1674, which is countersigned by John Warr (Royal Society MS 390, fol. 21, dated 25 Nov. 1674). It comprises a shield with *three roses only*; that this is Warr's seal is suggested by the fact that the same seal is used on John Warr senior's undated letter to Boyle, BL 5, fol. 176; see vol. 5, pp. 136–7.

[c] 12 Aug. 1665, EL B.1.88; see, vol. 2, p. 512.

[d] Respectively *a lion's head erased*; an achievement of arms comprising *three lozenges*, with, as crest, *an arm embowed*; and *two lions passant*; see below, pp. 145–7, 320–1, 323–4, 359–60, 471–3.

[e] A further seal used by Boyle, this time on his letter to Winthrop of 21 June 1670, shows a lily flower: this may be a further non-heraldic motif of Boyle's. See vol. 4, p. 181.

d. Postmarks

We have also provided a full record of all postal markings on letters. In some cases these take the form of manuscript notes stating the amount charged for transmitting the letter. In addition, letters from the 1660s onwards often bear the so-called 'Bishop' marks, which are so common that they are here simply referred to as 'postmarks': they comprise a circle divided horizontally, with the month in one of the semi-circles so formed and the day in the other. We have recorded the data with the content of the upper part of the mark separated by that of the lower part by a solidus: viz, 'AP / 1', 'SE / 23', '26 / DE' or '23 / AP'.[a]

Rather fewer letters bear the marks of the famous London Penny Post set up by William Dockwra and associates in 1680, which was superseded in 1682 by the government Penny Post. Both have triangular marks inscribed 'Penny Post Paid' in their border and with the sorting office from which the letter was dispatched in the centre. These were accompanied by a separate stamp giving the time when the letter was marked for delivery, a heart-shaped one under the Dockwra scheme, which was replaced by a circular one under the government scheme.[b] The information on these has been conveyed in the form: 'Triangular Penny Post stamp, with "W" in the centre, accompanied by heart-shaped [or circular] time stamp with the legend "Af / 3" [or "W / Af/8"].' In a handful of cases, these provide crucial dating evidence which has been referred to in relation to the letter in question.[c]

d. Notes on endorsements

These follow the notes on seals and postmarks on a separate line. We have not only quoted all endorsements, but tried to indicate who made them, differentiating notes that are contemporary with the letters from those made by later students of them. Here, readers will encounter repeated reference to the handwriting of the scholars who worked on the Boyle archive in the generation after Boyle's death, William Wotton, whose extensive preparations for his abortive biography of Boyle are much in evidence in his notes on the Boyle Letters, and Henry Miles and Thomas Birch, who were jointly responsible for the edition of Boyle's letters that formed part of Birch's edition of his *Works*. In particular, Miles is responsible for a series of red crayon numbers of letters by correspondent that evidently relate to the preparations for that edition.[d] As with seals, it can be presumed that where none is recorded, none exists.

[a] See Howard Robinson, *The British Post Office: a History* (Princeton, 1948), p. 58, where specimens of the marks are reproduced. We have reproduced the notes literally, so that 'IV', for instance means 'June'.

[b] Robinson, *op.cit*., p. 70ff. Specimens of the various marks are reproduced in ibid., pp. 73, 75.

[c] E.g., vol. 3, pp. 262–3, 282–5, vol. 5, pp. 231, 375, 408.

[d] See Hunter, *Letters and Papers*, pp. xii–v, xvii–xx, xxii–vi; *RBHF*, pp. xxxviff., 111ff.

Principal Events in the Life of Robert Boyle

1627 25 Jan. Born at Lismore, Ireland, seventh son of Richard Boyle, first Earl of Cork, by his second wife, Catherine.
1635 2 Oct. Enters Eton College with his brother, Francis, later Viscount Shannon.
1638 23 Nov. Leaves Eton College.
1639 Travels to France and Switzerland with Francis, under the tutelage of Isaac Marcombes; spends several months in Geneva
1641 Travels to Italy
1642 Stranded at Marseilles; returns to Geneva
1644 Returns to England
1645 Settles at Stalbridge, Dorset, where he spends much of the next decade; possibly briefly visits France in this year
1648 Feb.–Apr. Visits Netherlands
1649 Laboratory established at Stalbridge
July. Quotidian ague
1652 June. Travels to Ireland
1653 June–Sept. Returns to England
1654 Anasarka and ancillary ailments; leaves Ireland
1655 *Invitation to Free Communication* published in *Addresses made to Samuel Hartlib*.
Late 1655 or early 1656. Settles at Oxford
1659 *Seraphic Love* published
Temporarily resident in Chelsea
1660 *New Experiments Physico-Mechanical, Touching the Spring of the Air and its Effects* published
28 Nov. Attends inaugural meeting of Royal Society
1 Dec. Appointed to Council for Foreign Plantations
1661 *Certain Physiological Essays*, *The Sceptical Chymist* and *Some Considerations touching the Style of the Scriptures* published
1662 7 Feb. Appointed first Governor of the Corporation for Propagation of the Gospel in New England

Defence of the Doctrine Touching the Spring and Weight of the Air published

1663 First volume of *The Usefulness of Experimental Natural Philosophy* published

1664 *Experiments and Considerations touching Colours* published

1665 *Occasional Reflections* and *New Experiments and Observations touching Cold* published

8 Sept. Created Doctor of Physick at Oxford

1666 *Hydrostatical Paradoxes* and *The Origin of Forms and Qualities* published

1668 Settles in London, living for the rest of his life with Lady Ranelagh in Pall Mall

1670 Suffers severe stroke. *Cosmical Qualities* and other tracts published

1671 Second volume of *The Usefulness of Experimental Natural Philosophy* published.

1672 *An Essay about the Origin and Virues of Gems* and other tracts published.

1673 *Essay of Effluviums* and tracts on *Saltness of the Sea*, etc., published

1674 *The Excellency of Theology, Compar'd with Natural Philosophy* published

1675 *Some Considerations about the Reconcileableness of Reason and Religion* and *Experiments, Notes, &c. about the Mechanical Origin or Production of Divers Particular Qualities* published.

1678 *Historical Account of a Degradation of Gold* published

1680 *The Aerial Noctiluca* published.

18 Dec. Declines presidency of the Royal Society

1681 *A Discourse of Things above Reason* published

1682 *The Icy Noctiluca* published

1684 *Memoirs for the Natural History Of Humane Blood* and *Experiments and Considerations about the Porosity of Bodies* published

1685 *Of the High Veneration Man's Intellect owes to God*, *An Essay Of the Great Effects of Even Languid and Unheeded Motion*, *Of the Reconcileableness of Specifick Medicines to the Corpuscular Philosophy* and *Memoirs for the Natural Experimental History of Mineral Waters* published

1686 *Free Enquiry into the Vulgarly Receiv'd Notion of Nature* published

1687 *The Martyrdom of Theodora and Didymus* published

1688 *A Disquisition about the Final Causes of Natural Things* published; recipe collection printed for private circulation

1689 22 Aug. Resigns Governorship of Corporation for Propagation of the Gospel in New England

1690 *Medicina Hydrostatica* and *The Christian Virtuoso* published.

1691 *Experimenta & Observationes Physicae* published

18 July. Will signed and sealed

23 Dec. Lady Ranelagh dies.

31 Dec. Boyle dies

1692 7 Jan. Buried at St Martin's in the Fields. Burnet's funeral sermon delivered
First volume of *Medicinal Experiments* and *The General History of the Air* published

1695 *Free Discourse against Customary Swearing* published

The Correspondence of Robert Boyle

VOLUME 1

1636–61

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— 1636 —

The two letters that open the correspondence are the earliest surviving letters from Robert Boyle, written from Eton where his father, the first Earl of Cork, had sent Robert and his brother Francis (1623–69), in October 1635. The brothers remained there until 11 October 1638. Concerning Boyle's schooldays see Boyle's autobiographical *An Account of Philaretus* in Maddison, *Life*, pp. 2–56.

In addition, we know of another letter that Boyle sent his father in this year, and one that his father sent to him. Receipt of a letter from Robert is recorded in Cork's diary under 13 February 1636, which also records the dispatch of a letter from Cork to Robert on 15 December that year (*I Lismore*, iv, 158, 214). In addition, a letter to Cork from Sir Henry Wotton (1568–1639), diplomat and Provost of Eton, dated 4 June 1636, refers to letters from Cork to 'your two Etonians at Lewis, and for there sweete Sister', which had been lost by Cork's servant, Robert Carew, who was in attendance on the two boys; see *II Lismore*, iii, 262. For a commentary on the passage, and for information on Boyle's visit to his sister, Lettice, Lady Goring, at Lewes in the summer of 1636, see Maddison, *Life*, p. 13n.

BOYLE to RICHARD BOYLE, FIRST EARL OF CORK 18 February 1636

From the holograph original at Chatsworth.[a] 4°/2.
Not previously printed.

Deare Father

My most humble duty presented unto your Honorable Lordship I prostrate my selfe as being personally present to begg your blessings, and prayer for being such a nigard in writing unto you who is so carefull in nourishing of me, and trayning of me in those faculties appertaining to your child, it was not want of duty or true

[a] This and the next letter, both uncalendared, are stored with the Lismore Papers. The packet containing them is endorsed 'found at Hardwick 1948'. They are written in childish hand on a page with left-hand margin and lines marked in pencil.

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naturall love, that hinder the cogitations of my heart, from their[1] ‹center› but my continuall emploiment in those exercices wherewith by your Lordships appointment I am charged, and will in time if a carefull endevour will inable me be a joy to your Lordships aged yeares and untill ‹God› will plesse me to attaine to my much wished for desire

I remaine your Lordships most
obedient sonne
february the eight-teenth. Robert Boyle.

for the Right honorable Richard
Earle of Cork Lord high
Treasurer of Ireland my very good
Lord father.
these.

Seal: Fragment, details indistinct, apparently showing a wreath.
Endorsed by Cork '12 Martii 1635 / From my son[2] Robert.'

BOYLE to FIRST EARL OF CORK 29 April 1636

From the holograph original at Chatsworth. 4°/2.
Not previously printed.

Deare Father

With my most humble duty presented unto your good Lordship, I doe most earnestly pray for the increase of Gods favour unto your honour in health, and happines, I have at this instant nothing to present you withall but that I am in good health praysed be God, and that nothing is wanting to be in the hight of my felicitie but the much wished for newes of your Lordships welbeing, for never since our brothers came over could I heare[1] any thing that would incourage me that way,[a] although I did much desire that hapines, I am now Right honorable fraught[2] with my schoole exercice, and destitute of any newes worthy your honorable intelli-

[a] Robert's elder brothers, Lewis (1619–42) and Roger stopped at Eton on 1 Mar. 1636 on their way from Dublin to London at the beginning of their European grand tour (Maddison, *Life*, p. 13).

gence, wherefore I omitt to write any more but leave all to our mans relation,[a] and humbly crave your Lordships blessings

Yours honours most obedient
From Eaton 29no Sonne and servant
Aprilis 1636 Robert Boyle.

To the Right honorable and my dearely
beloved Lord Father Richard / Earl of corke Lord / high Treasurer / of Ireland
These humbly present

Endorsed by Cork '4 Junii 1636 / From my son Robert.' Also a crayon number 'C5' [?].

— *1637* —

Lost letters dating from 1637 are as follows:

Two lost letters to Boyle are recorded in the first Earl of Cork's diary, one dated 4 February, the other 4 November (*I Lismore*, iv, 220; ibid., v, 34).

[a] Presumably Robert Carew, servant to Cork and in attendance on the two boys; see Maddison, *Life*, p. 8n.

— 1638 —

BOYLE to FIRST EARL OF CORK 14 March [1638][a]

From the printed version in William Oldys and Joseph Towers (eds), *Biographia Britannica*, 6 vols (London, 1747–66), ii, 914.[b]

My most honoured Lord Father,

HEARTILY praying for the continuance of God's favour to your Lordship still in soul and body, I humbly prostrate myself unto your honourable feet, to crave your blessing and pardon for my remissness, in presenting my illiterate lines unto your honourable, kind acceptance. Whereas I have been heretofore cloy'd with our colledge exercise, I could not so often visit your Honour in writing; but now being by the ardent desire of our Brother, and the licence of Sir Harry Wotton, and our school-master, come to London, where we make four days residence,[c] have found opportunity to offer unto your Honour that oblation due unto so good and so noble a Father, that is most humble duty, desiring your Honour to pardon him for his brevity, who strives to live after your Lordship's will and commandments.

London, decimo 4to Martii.

Truely and obediently,
ROBERT BOYLE.

For my dear Lord Father, the Earl of Cork.

[a] The letter is assigned to 1638 on the strength of Boyle's autobiography, in which he writes, 'Philaretus having now for some two years been a constant resident at Eton … when about Easter he was sent for up to London to see his eldest brother the lord Dungarvan' (Maddison, *Life*, p. 17). Easter Day in 1638 was on 25 Mar., and nearer to the date of this letter than in 1636 or 1637, which are the only other possible years.

[b] Dr John Campbell (1708–75), who wrote the biographical account of Robert Boyle in the *Biographia Britannica*, says he had the original of the letter before him.

[c] Evidently Robert's eldest surviving brother Richard Boyle (for whom see below, pp. 506–7). For Sir Henry Wotton, see above, p. 3. The master referred to is probably William Norris, headmaster at the college 1631–6.

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— 1639 —

Lost letters dating from 1639 are as follows:

A letter from Boyle to the first Earl of Cork dated 31 October 1639 is recorded both in Cork's diary and in a letter from Marcombes to Cork of 10 November that year (*I Lismore*, v, 115; *II Lismore*, iv, 95).

In addition, a letter from Cork to Boyle is recorded in Cork's diary for 22 December, while Isaac Marcombes's letter to Cork of 12 February 1640 refers to letters from them to him, probably dispatched before the end of the previous year (*I Lismore*, v, 122; *II Lismore*, iv, 99).

— 1640 —

Lost letters dating from 1640 are as follows:

A letter from Boyle to Cork dated 20 May is referred to in a letter from Marcombes to Cork of 23 June 1640 (*II Lismore*, iv, 115).

A letter from Cork to Boyle dated 5 September is referred to in Marcombes's letter to Cork of 16 November 1640 (*II Lismore*, iv, 160).

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BOYLE to FIRST EARL OF CORK 7 October 1640

From the badly damaged holograph original at Chatsworth, Lismore MS 21, no. 56.[a] 4°/2/
Not previously printed in full: see *II Lismore*, iv, 112.

me. we go forward [...]
in I take a great [...]
the Arithmetique and [...]
already began, when [...]
we strive to render [...]
esse of the [?] Kin[...]
the [...]

For the [...]
my [...]

Seal: incomplete specimen of seal as on 16 November 1640 (below, p. 9). Black wax.
Endorsed by the first Earl of Cork 'Geneva 7° Octobris 1640[b] / From my sonn Robert / Rec: at the War[drobe] ultimo Oct.'

BOYLE to FIRST EARL OF CORK 16 November 1640

From the holograph original at Chatsworth.[c] Fol/2.
Not previously printed.

My most honored Lord and Father.

The expectation of your Lordship's letters hath hitherto hindred me from presenting my duty unto your Lordship in mine. But seing they came not, I tooke this present opportunity to assure your Lordship of the continuation of my duty, and that I desire nothing so much in the world as to heare some newes of your Lord-

[a] Most of this letter is missing, and it is impossible to reconstruct it. The legible fragment, which is in the middle of the page towards the left-hand margin, is printed here. A parallel letter of the same date from Boyle's brother, Francis, reporting their mathematical studies and seeking his father's approbation, survives as Lismore MS 21, no. 55.

[b] Robert and Francis left England for a European tour in Oct. 1638 and travelled through France, arriving in Geneva at the end of Nov. 1639 (Maddison, *Life*, p. 28).

[c] A further uncalendared item stored with the Lismore Papers. See above, p. 3n.

ships health (for which I dayly pray Almighty God.) My health continues (thankes be to God) as wel as Mr Marcombes good usage towards me, to whom I have so many obligations for the care he hath of me that I shal never be able to acquit the least part of them. They say here that the pretended peace of Germany is broken, because the Duke of Baviere refuseth to render the Electorat to the Prince Palatin.[a] They say also that the King of France maketh mighty preparations for the warres and raiseth 100000 Foot, and 30000 Horse.[b] We continue our Study in the Mathematickes which is (as I thinke) the bravest Science in the world (after Divinity,) and I hope to become a good proficient therein, having for scope therein as wel as in all other study'es the desire to serve God, to please your Lordship, and to render my selfe in some sort worthy to be esteemed[c]

My Lord
Your most obedient Sonne and
humble Servant
Robert Boyle

From Geneva
the 16 of
November 1640.

For the Earle of Corke my most
honored Lord and Father.
At London.

Seal: Oval. Achievement of arms: *a cross*; crest: *a Turk's head*. Black wax.[d]
Endorsed by Cork 'Dublin, [... 1]640[1] / From my sonne Robin/ Rec at Court by the poste / 15° Decem. 1640.'

[a] In 1623 the Electorate of the Upper Palatinate had been transferred to Maximilian I (1573–1651), Duke of Bavaria, for life by Frederick V (1596–1632), Elector Palatine and deposed King of Bohemia. The son of Frederick V, Charles Lewis (1617–80), assumed the title of Prince Elector of Palatine when he reached the legal age of 18 years. Boyle may be referring to the negotiations at the Imperial Diet at Regensburg in Sept. 1640, although most German princes had accepted the transfer of the electoral title to Bavaria at the Peace of Prague in 1635. The Duke of Bavaria offered to make a separate peace with France in Jan. 1640, on condition that the King of France accept the transfer of the title, along with other conditions, but this was rejected. See G. Parker, *The Thirty Years' War* (London, 1987), pp. 142, 167, 170.

[b] Louis XIII (1601–43), King of France from 1610. France was at war with Spain between 1635 and 1659.

[c] On Boyle's early studies of mathematics see *RBHF*, pp. 14–15; *Usefulness II, part 2*, in *Works*, vol. 6, p. 440. See also Lawrence Principe, 'Newly-Discovered Boyle Documents in the Royal Society Archive: Alchemical Tracts and His Student Notebook', *NRRS*, 49 (1995), 57–70.

[d] The seal is evidently that of Marcombes.

BOYLE to FIRST EARL OF CORK 23 December 1640

From the damaged holograph original at Chatsworth, Lismore MS 21, no. 77.[a] Fol/2.
Not previously printed in full; see *II Lismore*, iv, 162–3.[b]

My most honored Lord Father.

I received your Lordship's letter the 15 of thi[…]
it assured me both of your Lordship's health (w[…]
ther expect or receive) and also of the prosperous […]
We continue our studies in the Mathematickes […]
very good. Mr [Marcombes] besides a long pr[…]
quicly follow […] the fruits of perfo[…]
the Commu[…] …t I shall be (with […]
say that t[…] Thomas having […]
rendred all […] he held on […]
Fleet is arrive […] Million […]
not heare tal[…]
seldome, my o[…] ing to […]
my selfe est[…]

December 23

[…]ather
[…] at this
[…]ry / at London

Seal: incomplete but same as that on Boyle to Cork, 16 November 1640.
Endorsed by Cork 'Geneva 23 December 1640 / From my Son Robert / Rec. at Court 6 January 1640'.

[a] Much of the letter is missing and is impossible to reconstruct. Surviving words are mostly printed in *II Lismore*, iv, 163. The legible portion, which comprises the entire left-hand side of the letters and fragments of the remainder, is printed here. Approximately four to five words are missing from the right-hand end of the first few lines, and more thereafter, both at that end and in the middle.

[b] As with Boyle to 1st Earl of Cork, 7 Oct. 1640, a parallel letter of the previous day from Boyle's brother, Francis, survives as Lismore MS 21, no. 76. This also reports on the boys' progress in mathematics and on Marcombes's care for his charges, and expresses enthusiasm for the planned journey to Italy. For a letter from Marcombes of the same date see Lismore MS 21, no. 78.

— 1641 —

Lost letters dating from 1641 are as follows:

Two letters from Boyle to Cork dated 2 and 20 November 1641 are referred to in Marcombes's letter to Cork of 9 March 1642 (*II Lismore*, v, 19).

Lost letters referred to in surviving letters are as follows:

First Earl of Cork to Boyle, 25 June 1641 (below, p. 17).

First Earl of Cork to Boyle, before 20 July 1641 (below, p. 17).

For other lost letters that have been placed by date, see below, p. 18.

BOYLE to FIRST EARL OF CORK — 20 January 1641

From the holograph original at Chatsworth. Lismore MS 21, no. 85. Fol/2. Previously printed in *II Lismore*, iv, 163.

My most honored Lord and Father,

Having so lately presented my Duty to your Lordship in my Answer to your Lordship's last Letters, I have nothing now to acquaint your Lordship withall but onely that I am (God be thanked) in good health, and that Mr Marcombes hath so great a care both of my Body and Minde, that I owe him the Obligation (next God) not onely of my health, but also of all that I have learned since I left your Lordship. He did me the favour to shew me the last letter your Lordship wrote unto him, dated the 22eth of December, wherein I read your Lordship's will, which I am very ready in all points to obey.[a] We continue our studyes in the Mathematickes, and are already somewhat advanced in the Fortification, wherein I hope and strive to render my selfe a good proficient.[b] The barrennesse of newes maketh me conclude

[a] This letter from Cork to Marcombes does not survive.

[b] See Principe, 'Newly-Discovered Boyle Documents', esp. p. 63.

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this Letter, assuring your Lordship that I shall thinke my Paines wel recompensed if by them I may in some sort deserve the Title.

My Lord
Of your most Obedient Sonne and most
From Geneva the 20eth humble Servant.
of January 1641. Robert Boyle.

To the right Honorable / and my most honored
father the Earle / of Corke. / London.

Seal: Remains of seal; design indecipherable.
Endorsed by Cork 'Geneva 20° Januarii 1640 / From my sonne Robert / Rec. at Court 3°. Febr. 1640 / by the poste'.

BOYLE and FRANCIS BOYLE to FIRST EARL OF CORK 9 February 1641

From the original at Chatsworth, Lismore MS 21, no. 89. 4°/2.
Not previously printed.

My Lord we are in good health, & your Lordships most humble, and most dutyfull servant, & sonne [*sic*],[a]

Francis Boyle
Robert Boyle

To the right honourable / the Earle of Corke, London

Seal: as on Boyle to Cork, 28 March 1641 (below, p. 14).
Endorsed by Cork 'Geneva, 9 February 1640 / From Mr Marcombes / Rec. at Court 26 Feb. 1640'.

[a] These lines are appended in the hand of Francis Boyle, and signed by both brothers, to a letter from Marcombes to the Earl of Cork of this date in which he explains that the two boys were not writing as they were busy trying to finish their mathematical studies prior to their departure for Italy, then planned for 1 Mar. See above, p. 10n.

BOYLE to FIRST EARL OF CORK 28 March 1641

From the holograph original at Chatsworth, Lismore MS 22, no. 4. Fol/2. Previously printed in *II Lismore*, iv, 189–90.

My most honored Lord and Father.

Having long waited for your Lordship's letters, at last we received one from your Lordship about 13 or 14 dayes since, wherein your Lordship commanded us not to stirre from Geneva till we had received some other of your Lordship's letters, which we have done. But seeing that your letters do not come, and that it is almost too late to go into Italy, being very weary with staying so long at Geneva (from whence we have not stirred these 16 Moneths) we have bought horses and are ready to make a Journey to see the neighbouring Countrey, and to recreate our selves for about 3 weekes after so long a study, at the end of which time (if it please God) we will returne to Geneva, and there continue our Studyes and Exercices as before.[a] We are (thankes be to God) in very good health, and Mr Marcombes continueth the great care and affection he hath showne us ever since we left your Lordship's house. They say that Banier hath bene beaten in Germany by the Emperour's Troupes, to the great astonishment of all the world, who thought that it was[1] almost impossible that the house of Austria after so many losses could make such a powerfull effort.[b] I heare no other newes in this Countrey worthy the writing, wherefore I make an end of this letter with my dayly prayers to God for your Lordship's long life, health and happinesse, and with the desire to be esteemed all my life.

My Lord
Your most dutifull and obedient Son
and humblest Servant.
Robert Boyle.

From Geneva the
28 of March. 1641.

For my most honoured Lord and
Father the Earle of Corke
at the Savoye at / London.

[a] This excursion is probably the one made in Apr. 1641, along a route through Cruseilles, Annecy, Grenoble, Lyons and thence back to Geneva; see Maddison, *Life*, p. 34.

[b] Boyle refers to developments in the Thirty Years War. Johan Gustafson Baner (Banier) (1596–1641) was the commander of the Swedish army fighting in Germany. On 17 Mar. 1641 his army was attacked by Austrian Habsburg forces under Archduke Leopold Wilhelm near Cham in the Upper Palatinate and he was forced to retreat. Zdeněk Hojda, 'The Battle of Prague in 1648 and the End of the Thirty Years War', in Klaus Bussman and Heinz Schilling (eds), *1648, War and Peace in Europe*, 3 vols (Munster, 1998), i, 403–11, on p. 404.

Seal: Circular. Figure sitting under overhanging tree, with motto: *Culne si frote* [?]. Endorsed by Cork 'Geneva 28° Martii 1641 / From my sonn Robert / Rec at Court 21° Aprilis 1641.'

BOYLE to FIRST EARL OF CORK 5 May 1641

From the holograph original at Chatsworth, Lismore MS 22, no. 12. Fol/2. Previously printed in *II Lismore* iv, 190–1.

My most honored Lord and Father,

We are newly returned from our Journey mentioned unto your Lordship in our last Letters of the 28 of March, wherein we have had some pleasure mingled with some paines.[a] At our comming backe we saw the 2 Letters that your Lordship hath written to Mr Marcombes of the 14 and of the 25 of March, by which you give us leave to goe into Italy, and by which your Lordship seemes to be angry with my Brother and I because that lately we have not written to your Lordship so fully as we should.[b] As for the licence your Lordship gives us to goe into Italy, (most humbly thanking your Lordship for it) we beseech your Lordship to consider that being come too late to our knowledge, and the heat being already very great in Italy, it would be very dangerous for us to go thither now, wherefore we have resolved (with your Lordship's leave) to stay this Summer at Geneva, there to continue our Studyes and Exercices with more eagernesse than before, striving thereby in some sort to efface my negligence, which I will not excuse, and for which I most humbly beg your Lordship's pardon, assuring your Lordship that I will never fall into such a fault againe. We are very wel at Mr Marcombe's house, who hath a very great care both of our health and instruction, letting us want nothing that is necessary either for our bodyes or mindes. We have each of us a Man to wait on us, and a Horse to Ride abroad those houres which we give not to our Studyes. I heare no newes here worthy the sending over, wherefore I finish this Letter with protestation ever to remaine.

My Lord.
Your Lordship's most affectionate

[a] See above, p. 13.

[b] These two letters from the 1st Earl of Cork to Marcombes are not extant. The intention had been to begin the journey into Italy in Mar. 1641 but because the Earl's consent was so delayed, Marcombes postponed the visit until Sept. The Earl's reluctance to give permission for the journey was the result of fears of reprisals when travelling in Catholic territory, following the severe anti-Catholic agitation in England at this time (Maddison, *Life*, p. 36).

From Geneva
the 5 of May.
1641.

and obedient Sonne, and
humble Servant.
Robert Boyle.

For my most honored Lord and
Father the Earle of Corke,
at his house at London.

Seal: Same as that on Boyle to Cork, 16 November 1640.
Endorsed by Cork 'Geneva 5° [Maii][1] 1641 / From my sonn Robert / Rec. 20° Maii 1641.'

BOYLE to FIRST EARL OF CORK — 30 May 1641

From the holograph original at Chatsworth, Lismore MS 22, no. 27. Fol/1.
Previously printed in *II Lismore*, iv, 192.

My most honored Lord and Father:

I am too sensible of the Anger which your Lordship shewed against us in your Lordship's last Letter to Mr Marcombes, because of our passed negligence for to continue in the same Error, and therefore my Brother and Mr Marcombes writing by the Duke of Lenoxes Brothers Governor[a] I thought fit to accompany their Letters with these few words to beseech your Lordship to pardon me my passed faults, to assure your Lordship that we lose not our time, and to beg that favor of your Lordship to beeleve that I shall alwayes remaine,

My Lord
Your most obedient Sonne and
humblest Servant.
Robert Boyle.

From Geneva the
30th of May
1641.

[a] Boyle refers to James Stuart (1612–55), 4th Duke of Lennox, whose youngest three brothers were Ludovic (1619–65), John (1621–44) and Bernard (c. 1623–45). Their 'Governor' or tutor was George Buchanan (dates unknown). Marcombes in his letter of this same date written to the Earl of Cork refers to 'Mr Buchanan of my old accointance and Gouvernour to the yonger Brothers of the Duke of Lenox which we have seene here att their returne from Italy' (Lismore MS 22, no. 25). For Francis's letter, see no. 26.

For my most honoured / Lord and Father
the Earle of / Corke. / at London.

Seal: Same as that on Boyle to Cork, 16 November 1640.
Endorsed by Cork 'Geneva 30° Maii / 1641. From my sonn Robert / Rec at Court 25° Junii 1641.'

BOYLE to FIRST EARL OF CORK 6 July 1641

From the holograph original at Chatsworth, Lismore MS 22, no. 34. Fol/2.
Previously printed in *II Lismore*, iv, 192.

My most honored Lord and Father.

I desire with passion and without any question to goe into Italy, but I protest unto your Lordship that I doe not desire it halfe so much as to heare from your Lordship, for the three Moneths (or thereabouts) that we have ‹beene› deprived of that sweete communication seeme to me 3 long Ages, and would to God that the interruption of that pleasing commerce may proceede from your private and publique employments.[a] I hope that by your first your Lordship wil give us leave to goe into Italy in September next, and Mr Marcombes (who presenteth his most humble service to your Lordship and who cannot write now by reason of his sore hand) thinkes that any other besides the former order is needlesse and expecteth but the confirmation thereof to undertake our soe much desired Journey, which I hope will be prosperous and without any danger, as Mr Marcombes who knoweth the Countrey and as many other Gentlemen who come lately from thence assure us. Heere we are in perfect health (thankes be to God) and when we have performed our Exercises we go take the Ayre and see our Friends, having each of us a Man and a Horse, and among other good company we have here my Lord of Hertford's two Sonnes, and for our perfect contentement we want nothing but your Lordship's gratious Letters, which shall never come so soone as doth desire[b]

My Lord
Your Lordship's most obedient Sonne
and humblest Servant.
Robert Boyle.

From Geneva the 6th of
July 1641.

[a] For the visit to Italy see above, p. 14n.

[b] This is a reference to William Seymour (c. 1620–42) and Robert Seymour (c. 1624–46), sons of William Seymour (1588–1660), Marquis of Hertford.

For my most honored Lord and Father the Earle of Corke.
at London.

Seal: Same as that on Boyle to Cork, 16 November 1640.
Endorsed by Cork 'Geneva 6^{o} Julii 1641 / From my sonn Robert / Rec. at Court by Mr Castell[a] / 21^{o} of the same.' Also endorsed in a possibly eighteenth-century hand 'Robt. Boyle'.

BOYLE to FIRST EARL OF CORK 20 July [1641][b]

From the printed version in W. Oldys and J. Towers (eds), *Biographia Britannica* (above, p. 6), ii, 915.

My most honoured Lord and Father,

AS your Lordship's long silence hath extremely afflicted us, so the receipt of your Lordship's letters, dated the 25th of June, hath infinitely rejoyced us;[c] for by them we are not only assured of your Lordship's health, (for the continuation whereof I pray God day and night) but also of the leave which we have so much desired to go into Italy the first of September. I wonder that Mr Killigrew should tell your Lordship, that we wore our old cloaths, and had no money in our pockets when he was here;[d] for I assure your Lordship, that since we came to Geneva, we have been very far from wanting either the first or the last, and that Mr Marcombes hath too great a care of us to let us want the least thing that is necessary, either for our bodies or minds: we are in his house in perfect health, (thanked be God) and grow great proficients in the Mathematicks, which is a study so pleasing and profitable, that when one hath once tasted the sweetness of it, it is almost impossible not to take delight therein, and by consequence not to ply it hard. The news here are, that the Count de Soissons forces, and one of the King of France's armies having met near Sedan, the King's army was beaten, and the Count de

[a] Michael Castell was an agent of the Earl of Cork. See Maddison, *Life*, pp. 45, 47.

[b] The date given in *Biographia Britannica* is obviously incorrect. We have deduced the year from the subject matter of the letter, including the trip to Italy which was originally anticipated in 1641 but then delayed.

[c] This letter is not extant.

[d] Thomas Killigrew, the elder (1612–83), the brother-in-law of Francis Boyle, who set out for Geneva shortly after his marriage, reported, probably mischievously, that the Boyle brothers were not being properly maintained. See also Lismore MS 22, no. 39 and *II Lismore*, iv, 235.

Soissons killed.[a] They say also, that Picolomini hath been shrewdly beaten in Germany, and that the King of France's affairs go very well in Catalonia, the Archbishop of Bordeaux having beaten the Spanish fleet, and Tarragone being taken by one of the King's generals.[b] Having no other news worthy the writing to your Lordship, I end my letter with them, beseeching you to believe that I lose no time here, and that in plying hard my studies and exercises, I will shew the ardent desire I have to be justly esteemed,

My Lord,
Your most dutiful and
the obedient Son, and
humble servant,
ROBERT BOYLE

From Geneva, the
20th July, 1746. [*sic*]

For my most honoured Father, the Earl of Cork, at his lodgings at Court.

[a] Louis de Bourbon (1604–41), comte de Soissons, French royal prince. He led a rebellion in 1641, in alliance with Frédéric Maurice de la Tour-d'Auvergne (1605–52), duc de Bouillon. They assembled an army in Bouillon's principality of Sedan and routed a French army at the battle of La Marfé on 6 July 1641, but Soisson died at the end of the battle and Boullion subsequently submitted to Louis XIII; see Victor-L. Tapie, *France in the Age of Louis XII and Richelieu*, trans. D. McN. Lockie (London, 1974), p. 415.

[b] Ottavio Piccolomini (1599–1656), originally from Italy, was Imperial General in the Thirty Years War. In Feb. 1641 Philippe, comte de la Mothe-Houdancourt (1605–57), marshal, was sent into Catalonia. He laid siege to Tarragona, which was also blockaded by sea by Henri d'Escoubleau de Sourdis (1593–1645), archbishop-admiral. However, the Spanish fleet surprised the latter, and forced him to flee on 20 Aug. 1641.

— 1642 —

Lost letters referred to in surviving letters are as follows:

Cork to Boyle and/or Marcombes, prior to 20 September 1642 (see below, pp. 22–3).

BOYLE to FIRST EARL OF CORK — 25 May 1642

From the autograph original at Chatsworth, Lismore MS 23, no. 52. Fol/2. Some words are missing due to damage to the right-hand side of the letter. The loss is of about four words in each of the worst affected lines.
Previously printed in *II Lismore*, v, 71–3.

My most honored Lord and Father,

Having according to your Lordship's order and directions seriously pondered and considered the present estate of our affaires, we have not thought expedient for divers reasons that my Brother will tell your Lordship by word of mouth, that I should goe into Holland;[a] for besides that I am already weary and broken with a long Journey of above eight hundred miles, I am as yet too weake to undertake so long a Voyage in a strange country, where when I should arrive I know no body, and have little hope by reason of my youth to be receaved among the troopes, and withall Mr Perkins having not sent us the 250 pound starling that your Lordship had ordained for our present Journey, I could not part from hence in any good equipage:[b] wherefore Mr Marcombes having offered me to bring me to Geneva,

[a] The Irish Rebellion had broken out on 23 Oct. 1641, greatly effecting the Earl of Cork's personal fortunes. He wrote on 9 Mar. 1642 to Marcombes describing his necessitous condition and instructing him to send Francis and Robert back to Ireland, or to enter them in the wars in Holland. See Lismore MS 22, no. 165 and *II Lismore*, v, 19.

[b] William Perkins was the Earl of Cork's tailor in London, who acted as intermediary in many of the latter's financial transactions. The Earl had scraped together £250, which sum should have been remitted to Marcombes to cover the expenses connected with the return of Francis and Robert. Perkins used the money for his own immediate necessities; see Lismore MS 23, no. 13. The Earl replied angrily on 5 Nov. 1642; see Lismore MS 23, no. 150, *II Lismore*, v, 117 and Maddison, *Life*, pp. 46–9.

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where I shall want no necessary thing, and stay there untill it please your Lordship to give me some more particular order and directions or till it please God to change the face of the affaires, I have accepted his offer, hoping that one day God will give me the meanes not onely to render him what he ‹shall› have[1] layed out for me, but also to requite him for his greate friendship and courtesy:[a] I […] then to Geneva (with God's blessing) to repose my selfe after so long a J[…] […] to gather some force and vigour, to serve and defend my Relig[…] my King and my Countrey according to my little power; […] employ my time so well, that I shall render my[2] selfe ca[…][…]ploy whereunto your Lordship may put me: I beseech […] betweene this and the end of August to thinke upon s[…] I may honorably gaine my living, assuring you that I […] […]bour and good endeavour to render my selfe capable thereof […] if your Lordship hath need of me in Ireland I beseech your Lordship to acquaint me therewith, and to beleeve that I have never beene taught to abandon my parents in adversity but that there and in all other places I will alwayes strive to show my selfe an obedient Sonne: as for my Brother Francis, find himselfe in Age and equipage fit to obey your Lordship, he is now ready to take horse to goe towards Ireland to secoure your Lordship according to his power; wherefore being confident that he will informe you more largely of all our affaires; I most humbly take my leave, commending your Lordship, and him, and us all unto the protection of Almighty God, beseeching your Lordship to beleeve, that whatsoever misery or affliction it pleaseth God to send me, I will ‹never› doe the least action unworthy of all the honor that I have to be

My Lord,
Your Lordship's most
dutifull […] […]ient […]
and […]

from Lions the
25th of May
1642

For the right honorable and my
most honored Lord and Father / the Earle of Corke
at Youghal / or elsewhere.

Seal: Circular. Shield only of impales arms: *a fess chequy, a bird in chief impaling Ermine* [?] *on a chief three griffins* [?] *sergeant*.
Endorsed by Cork 'Lyons 15° Maii 1642 / From my sonn Robert / Rec. 6° Augusti'. Also 'Robt. Boyle' in a possibly eighteenth-century hand.

[a] It was at Marseilles that Robert and Francis first became aware of the consequences to the Earl of the Rebellion. As is indicated some lines later, at Lyons Francis left the party to return to Ireland and Robert continued the return leg to Geneva under the care of Marcombes.

BOYLE to LEWIS BOYLE, VISCOUNT KINALMEAKY[a] 1 August 1642

From the holograph original at Chatsworth, Lismore MS 23, no. 100. 4°/2. The original letter is mutilated with loss of up to four words in the worst affected lines. Previously printed in *II Lismore*, v, 96–8.

Deare Brother.

Our common misfortune, and mine in particular had [...] so deepe a melancholy, that it made me almost forget, bot[...] that which I owe unto you (Dearest Brother): and I shou[ld] [...] perpetually sylent (I thinke) if the good newes that my D[...] Francis sent me of the prosperous event of your couragious ac[...] (as it were) awaked me from that long[1] sleepe, wherein my w[...] [...]ly had plunged me, and shewed me the greate fault that my further sylence would have made me commit. Wherefore I now take the pen in hand to beseech you to excuse it, which (I beleeve) you will easyly doe, if you take the paines to consider, that it is not an effect either of my forgetfulnesse or of my ingratitude, but onely of the opinion I have that you are fully persuaded of the greatenesse and firmenesse of my affection (and respect) towards you, that it can neither be declined by sylence or absence, nor augmented by letters. I beleeve that by this time you have seene my Brother Francis, who hath (as I esteeme) acquainted you with the reasons that caused our separation; wherefore I'le content my selfe to assure you now, that I am at Geneva in very good health at Mr Marcombe's lodging, where I want nothing but some confortable letters out of England or Ireland, and where I dayly expect fresh orders and money from my Father.[b] I lately receaved with a greate deale of contentment and pleasure the glad newes of your generous and fortunate Combats against the Irish Rebels,[c] but I have not beene alone glad of them, for although my joy were very greate, yet I assure you that it was (very neare) equalled by Mr Marcombe's, for he takes almost as greate a part in your interests a[s if] they were his owne, and hee affectuously beseeches you (by me) to continue [...] honour of your friendship as he on his part vowes to continue you his o[...] [...] and desire to doe you service. As for me he hath so much obliged me, the [...] despaire of[2] ever being able to desengage my selfe of so many and so great [...] that I have unto him I should esteeme it a greate happinesse for me [...] of your letters, but I dare not aske that favour for feare of im[...] for I beleve that your more serious occupations give you

[a] Lewis Boyle (1619–42), Viscount Boyle of Kinalmeaky, 4th son and 10th child of the 1st Earl of Cork; created Baron of Bandon Bridge and Viscount Boyle of Kinalmeaky, 1628. He was killed shortly after the date of this letter, whilst in command of a troop of horse at the battle of Liscarrol, 3 Sept. 1642.

[b] For the delay in the arrival of the money Robert needed to return home see above, p. 19n.

[c] Probably a reference to Kinalmeaky's spirited defence of Bandon, and his successes against the rebels. See *II Lismore*, v, 79.

not s[…] write as I have now: wherefore I'le very willingly conten[…] and then the object of your thoughts, assuring you on the ot[…] […] are almost continually that of mine, and that in the midst […] […]flictions I ressent a great deale of Joy, when I thinke u[…] be in your good graces and esteeme, and upon the honour I have to […]

Deare Brothe[r]
Your most affectionate Bro[…]
faithfull and humble Servant
Robert Boyle.

From Geneva the
1 of August
1642.

[3]These lines (Deare Brother) are not able to expresse the least part of my inviolable affection, wherefore I beseech you not to[4] mesure it by my expressions, but to suspend your judgment, till I have the happinesse to enjoy a little your company, or to assure you by effects that my affection passeth very much my expression. Adieu Dearest Lewis, idle bofin, Bon Anné, Bon Solé, bon Véspré. Adiciŭo a Di vous commande[a]

For my Deare Brother
the / Lord of Kynalmekaye / at Bandonbridge.
These

Seal: a poor impression of that on Boyle to first Earl of Cork, 28 March 1641. Endorsed by Cork: 'Geneva 1° Aug. 1642. / From my sonn Robert / to his / Brother Kynal. / Rec. 13 October.'

BOYLE to FIRST EARL OF CORK — 30 September 1642

From the autograph original at Chatsworth, Lismore MS 23, no. 135. 4°/2. Previously printed in *II Lismore*, v, 114–15.

My Lord

As your Lordships long sylence had extreamely afflicted me, so the receate of your Lordship's favorable Letters (which fell into my hands the 20th of this Month) hath extreamely rejoyced me; by the assurance that your Lordship and my Brothers are (thankes be to God) in very good health and victorious over all your

[a] The significance of certain words used in Boyle's whimsical valedictory is unclear: 'bofin' is possibly a pet name for his brother, while the spelling of some of the French phrases that follow is odd.

enemies.[a] I receaved therein a Commandement from your Lo: to stay heere with Mr Marcombes till the Spring-time;[b] which order (although the long privation that it prescribes me of the honor to be neere your Lordship renders it difficult) I am resolved to obey, and to employ my selfe so diligently to my Studyes and Exercises, that at my comming home I may render my selfe capable of some employment in the affaires of Ireland. I am no lesse astonished then your Lordship at the basenesse and infidelity of Perkins, nor no lesse sensible to the obligations of Mr Marcombes, whom I should altogether despaire ever to requite if your Lo: in your Letter had not promised to take your selfe that matter in hand:[c] he alwayes continues his care of me, and lets me want nothing that is necessary either for the body or for the mind; so that I am now (God be thanked) in as perfect health as ever I have beene, and am ready (with his helpe[])][1] to spend my time as well as ever I did in my life. The death of my Brother Brohill's little Son has made me very sorry; but his Lady's greate belly makes me hope that the delivery of a Second lusty boy will recompence the losse of the First:[d] besides that the happy arrivall of my Brothers Dungarvan and Francis in Ireland, and the hope that your Lo: gives me to procure me some office at my comming over hath almost blotted that ill newes out of my memory.[e] I have receaved a greate deale of contentment and satisfaction by the lecture of those particularitys of my Brothers generous combats and victoryes which your Lordship hath beene pleased to send me (for the which I most humbly thanke your Lo:) for not onely they have very much rejoyced me by the knowledge of their health, reputation, and prosperous successes; but also they have filled me with an ardent desire to follow their noble steps, and to show some generous effect of the honor that I have to be

My Lord
Your Lordship's most obedient
Son and humble Servant
Robert Boyle.

From Geneva
the 30th
September 1642.

[a] Presumably Boyle was unaware of his brother Viscount Kinalmeaky's death on 3 Sept., and so he must be referring to the efforts of Kinalmeaky and Francis Boyle (1623–99) against the Irish. His elder brother Roger also helped to suppress the Irish rebellion between 1641 and 1643. The letter(s) from Cork referred to here are not extant.

[b] For Boyle's departure from Geneva see below, Boyle to Steward of Stalbridge, last quarter 1644.

[c] For William Perkins, see above, p. 19n.

[d] Broghill married Margaret Howard (1623–89) in 1641. This statement, if correct, gives evidence of an otherwise unrecorded infant of Roger Boyle.

[e] Boyle refers here to his elder brother Richard, who inherited the title Viscount Dungarvan, and to his younger brother Francis, recently returned from Geneva.

For my most honored / Lord and Father
the Earle of Corke.
At Youghall / or elsewhere.

Seal: Same as that on Boyle to first Earl of Cork, 16 November 1640.
Endorsed by Cork: 'Geneva 30° Sept. 1642. / From my sonn Robert / Rec. 5° Novem.'

— 1644 —

BOYLE to STEWARD OF STALBRIDGE[a] Last quarter 1644

From the fragment printed in Birch (ed.), *Works* (1744), i, 15, described as 'Letter to the steward of his manor of *Stalbridge* in *Dorsetshire*'. Also printed in Birch (ed.), *Works* (1772), i, xxvii.

… At length, though I could not receive any supply at all from my friends, yet being unable to subsist any longer, I was forced to remove thence; and having upon his [Mr *Marcombes*'s] credit made shift to take up some slight jewels at a reasonable rate, we made sale of them from place to place, and by their help, at last, by God's assistance, we got safe into *England* towards the middle of the year 1644, where we found things in such confusion,[b] that although the manor of *Stalbridge* were, by my father's decease, descended unto me, yet it was near four months before I could get thither.[c]

[a] Possibly John Nicholls. See Maddison, *Life*, p. 259, and below, p. 234n.

[b] At this point, the 1st Civil War was still at its height, with the battle of Marston Moor taking place in July.

[c] The 1st Earl of Cork died on 15 Sept. 1643. The estate of Stalbridge Manor in Dorset had been purchased by the Earl in 1636 especially for his son Robert. See Maddison, *Life*, pp. 57–61. It is unlikely that Robert Boyle was at Stalbridge on 8 Oct. 1644, when Charles I dined and stayed the night there. See Richard Symons, *Diary of the Marches of the Royal Army during the Great Civil War*, Camden Society, 1st series, 74 (1859).

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— 1645 —

For lost letters that have been placed by date, see below, p. 28.

BOYLE to BROGHILL 25 August 1645

From the fragment printed in Birch (ed.), *Works* (1744), i, 15. Also printed in Birch (ed.), *Works* (1772), i, xxvii.[a]

The necessities of my affairs calling me away (according to the leave the parliament has given me) into France …[b]

KATHERINE JONES, LADY RANELAGH, to BOYLE [late 1645][c]

From the original in BL 5, fols 29–30. 4°/2. Letter begins on fol. 30.
Previously printed in Birch (ed.), *Works* (1744), v, 565, and Birch (ed.), *Works* (1772), vi, 534.

This is onely my Brother to tel you that it pleased god to carry me thorough my Jorney much better than I could reasonablely have expected I[1] could have passed it Considering my preperation for it was a night ful of smart paines & almost without sleepe & that when I went into the Coach I was Ill enough to have binn more properly[2] put to bed, here we have a right prospect of what the world cals greatnes Croud, Noyse, heapes of meate & drink in proportion contrivance & paines to please the sence vexsation & feare & in Conclusion emptynes & disapoyntment.

[a] Birch states that the letter is dated from London.

[b] Boyle may have gone abroad to settle his indebtedness to Marcombes; see Maddison, *Life*, p. 65.

[c] This letter has been dated on the basis of the evident reference to the marriage of Anne and Charles Howard, which took place in late 1645; see Maddison, *Life*, pp. 65–6.

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You are now very neere the houer[3] wherein your mistris is by giveing her selfe to another to set you at libertie from al the apearances you have put on of being a lover which tho they Cost you some paines & use of art were easyer because they were but apearances[a] Its wel if she put not her selfe by that act of bounty into more slaverie than she gives you libertie, but now she must perfect makeing the venture she has soe farr proceeded in, I must before I free you too recommend that health to your Care as the onely obligation to be put by you upon me greater than those that you have already heaped upon

Yours affectionately K R

[4]For my Brother

Seal: Remnant only, obscured by paper.

BOYLE to SUSAN BARRY, COUNTESS BARRYMORE[b] [1645]

From the printed version in Birch (ed.), *Works* (1744), i, 86. Also printed in Birch (ed.), *Works* (1772), i, cxxxvii–cxxxviii.

* * * It is high time for me to hasten the payment of the thanks I owe your ladyship for the joy you are pleased to wish me, and of which that wish possibly gives me more than the occasion of it would. You have certainly reason, madam, to suspend your belief of a marriage celebrated by no priest but fame, and made unknown to the supposed bridegroom. I may possibly e're long give you a fit of the spleen upon this theme; but at present it were incongruous to blend such pure raillery, as I ever prate of matrimony and amours with, among things I am so serious in as those this scribble presents you. I shall therefore only tell you, that the

[a] Before his death the 1st Earl of Cork had designed a marriage between Robert Boyle and Anne Howard, only daughter of Edward, Lord Howard of Escrick. The lady, however, did not marry Boyle, but her cousin Charles Howard, who in 1661 was created Earl of Carlisle. The Earl's diary records lengthy details of the proposed marriage settlement; see Maddison, *Life*, pp. 55–6. This letter to Robert Boyle from his sister Katherine probably relates to the marriage of Anne and Charles, the exact date of which is not known, but which was certainly in 1645.

[b] Susan Barry (b. 1629), wife of Boyle's nephew Richard Barry (1630–94), 2nd Earl of Barrymore, and daughter of Sir William Killigrew. This undated letter was included by Birch at the end of his 'Life' of Boyle in connection with Boyle's marital affairs. Birch notes that Boyle wrote it 'when he was very young'. It is placed here for its similarity to the adjacent letter from Lady Ranelagh.

little gentleman and I are still at the old defiance. You have carried away too many of the perfections of your sex, to leave enough in this country for the reducing so stubborn a heart as mine, whose conquest were a task of so much difficulty, and is so little worth it, that the latter property is always likely to deter any, that hath beauty and merit enough to overcome the former. But though this untamed heart be thus insensible to the thing itself called love, it is yet very accessible to things very near of kin to that passion; and esteem, friendship, respect, and even admiration, are things, that their proper objects fail not proportionately to exact of me, and consequently are qualities, which in their highest degrees are really and constantly paid my lady *Barrimore* by her

Most obliged humble servant,
and affectionate uncle,
ROBERT BOYLE.

BOYLE to UNKNOWN CORRESPONDENT 1 December 1645

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'At Cambridge 1 December 1645 *for a little while perhaps a month*'. (italicised words in shorthand)'. This could relate to the undated letter to Lady Barrymore; see previous entry.

— 1646 —

For a lost letter referred to in a surviving letter, see the letter from Lady Ranelagh to Boyle referred to in Boyle to Worsley [after 21 November 1646] (below, p. 42).

For lost letters that have been placed by date, see below, pp. 30, 34, 36, 44.

BOYLE to UNKNOWN CORRESPONDENT 20 February 1646[a]

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'London Feb. 20 1646 – was then about going to Stalbridge'.

BOYLE to ARTHUR ANNESLEY[b] 28 February 1646

From the original in the Bodleian Library, MS Clarendon 27, fol. 67; item 2132. Not previously printed.

Sir.

I am very sorry that I am forc'd to make my first addresses to you by my Petitions & not by my Services. But since your owne Goodness (by your courteus promises) has assured me that you wud not be unwilling to oblige me; I will venture to trouble you with this request, That the Abbey of Rossacke, (& 'tis likely

[a] Miles also has an entry 'London Feb. ult 1646', which is presumably Boyle's letter to Annesley; see next entry.

[b] Arthur Annesley (1614–86), afterwards Viscount Valentia and Earl of Anglesey, was sent to Ulster by authority of Parliament in 1645 as a commissioner to defeat Ormonde's negotiations with the Scots, and at this time he was entrusted with the management of Boyle's estates in Connaught. In 1645 Parliament sent Sir Charles Coote (d. 1661), to Ireland as Lord President of Connaught. Coote assembled an army in Ulster and brought a substantial part of Connaught under Parliament's control; see D. Stevenson, *Scottish Covenanters and Irish Confederates* (Belfast, 1981), pp. 221–2.

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som other things) being lately taken in by your Forces there; you wud be pleas'd, both in that, & in any other Place belonging to me in the North of Ireland, if any such chance to be hereafter reduc't, (a Rentall of all which I send you heerewithall) to commit them to the Custody of any whomsoever you shall thinke fit, that they may Preserve at least my Interest there:[a] & if there be any little thing to be made of it for the present; that it may be return'd for me to my sister Ranalaugh. To this End I heereby authorize you to receave to my use all Rents or Arreares, to compound & give acquittances for them; & (in short) to dispose of my estate in Connaught as you shal thinke most fitting for my advantage;[1] & I do heereby ratify & confirm whatsoever you shal be pleas'd to do therein in my Behalfe. Sir, I should /fol. 67v/ not presume to be so trublesom to you[2] at this present, if the confidence I have of your obligingness, &[3] your civil profers (the last time I had the happiness to see you) had not invited me thereunto; & truly I am the less unwilling to importunate you, upon the consciousness of my owne vehement desire, to answer your favors with the utmost services of

Sir
Your most faithfull
& obliged Servant
Robert Boyle.

London, this
last of February 1646.

For Mr Arthur / Annesley
these / with my service

Endorsed in an unknown hand: 'From Mr Robert Boyle / Febr. last. 1645/6 / with some papers concerning / his estate in Connaght. / &c 3 in number.' Then in a different hand: 'To Mr Annesley, desiring to / take care of his Affairs in / Ireland.' And, in the same hand as the first endorsement: 'Received Aprill. 12. / 1646. by Jeremy / Tomlins', then in same hand, 'Answered the 14th inclosed / to the Lady Ranalaugh'.

BOYLE to UNKNOWN CORRESPONDENT 25 March 1646

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'Stalbridge March 25 1646'.

[a] These were impropriations of church lands in Rossacke, County Mayo, bequeathed to Boyle by his father, the Earl of Cork; see Dorothea Townshend, *The Life and Letters of the Great Earl of Cork* (London, 1904), p. 479ff.

BOYLE to LADY RANELAGH 30 March 1646[a]

From the printed version in Birch (ed.), *Works* (1744), i, 15–17. Also printed in Birch (ed.), *Works* (1772), i, xxvii–xxx.

SISTER,

If the busy idleness of receiving senseless visits (whose continuance, if otherwise unavoidable, were capable, in my opinion, to justify the retiredness of an hermit) had not so totally taken up my leisure, you should not so long have had a reprieve from the importunity of my letters. But now at last, to make you amends for my fault (if at least /p. 16/ the amends itself be not a fault) I will present you with a piece of a real romance in the story of my peregrination hither. The morning I had the unhappiness to take my leave of you and my lady Molkin,[b] I bid farewel to the city, and began my journey upon a courser. Him I rid to dinner to *Egham*; and at the end of the town, there it was my good fortune (as we are pleased to miscall it) to overtake an express sent from the parliament to the general, making ceremonies with his horse, whether of them two should lead the way.[c] I quickly put an end to their difference, by making *Roger* take the honour upon him;[d] and we had not rid far, before we met with some carriers, that had lately left *Andover*, who assured us, that the way was very secure; though presently after we came to discover, that those youngsters would not have been very sorry, that we had been snapped by some of their party, and been made to take *Oxford* in our way to *Stalbridge*; for we were no sooner come to *Bagshot*, but we met a carrier coming the way we were going, who assured us, that the cavaliers had eased them at *Basingstoke* of all their superfluous moveables, and were advanced as far as *Hartley-row*, the very village, that I had designed for that night's lodging.[e] So believing, that our quarters would be already taken up, we called a council of war to advise and resolve what to do. It was *Roger's* opinion, to stay where we were, till the passage were made secure (strange, that so well-armed an head should be fearful!) but the messenger easily persuaded us to go to *Farnham* (though both that and all the country in the way were smartly alarmed) assuring *Roger*, that in case of danger he could strike into a

[a] This letter appears in Miles's list of letters of 1645–7 (BP 36, fol. 129).

[b] Doubtless a pet name for Boyle's sister Mary (1624–73), who was married to Charles Rich (1616–73), afterwards 4th Earl of Warwick.

[c] This was presumably the messenger taking the letter of thanks sent by Parliament to Sir Thomas Fairfax, the commander of the New Model Army, after the surrender of the royalist army in Cornwall on 12 Mar. 1646; see *Lords Journal*, viii, 231.

[d] i.e., Broghill.

[e] Hartley Row is a village on the main road from Bagshot to Basingstoke in the parish of Hartley Wintney, Odiham Hundred, Hampshire. See W. Paige (ed.), *Victoria County History of Hampshire and the Isle of Wight. Volume Four* (London, 1911), p. 79. The last main royalist army surrendered at Stow on the Wold on 21 Mar., but as this letter indicates travelling was still dangerous even at this late stage in the Civil War.

way, out of the way, to bring us to the place we went to. As we went along, we met divers little parties, with whom we exchanged fears, and found, that the malignant humours, that were then abroad, had frighted the country into a shaking ague, till we came to *Farnham*, which we found empty and unguarded, all the townsmen being gone out to oppose the king's party, and chusing rather to have their houses empty, than replenished with such guests, as otherwise they were necessarily to expect. There invited by the coolness of the evening, and the freshess of the garden I was walking in, I almost lost myself in meditating, how foolishly rash were our controlments of, and repinings at the wise contrivances of that all-swaying providence, whose proceedings should be as far above our censures, as they are above our reach. How apt are we, upon the least thwarting of our designs, to murmur against providence, and in a pettish humour throw the helve after the hatchet, *le manche apres la coignée*,[a] and give ourselves for gone, when, had we had our will in the means, we should have been frustrate in our expectation of the end! Whereas that superlative wisdom, that we grumble at for thwarting us in the means, by crossing us in the way, brings us the sooner to our journey's end. With divers contemplations upon this subject, I went to supper, and thence to bed, not without some little fear of having our quarters beaten up by the cavaliers that night; when lo! to second my apprehensions, about the dead of my sleep, and that night, I heard a thundering at the door, as if they meant to fright it out of the hinges, and us out of our wits. I presently leaped out of my bed, in my stockings and clothes (my usual night-posture, when I travel;) and while *Roger* was lighting a candle, got my bilboa and other instruments from under my pillow: whereupon Roger opening the door, saw it beset with musketeers, who no sooner saw us, but said aloud, that we were not the men they looked for; and being intreated to come into the chamber, refused it, and he, that brought them thither, excused their troubling us, with as transcendent complements as the brown bill could afford.[b] I wondered at their courtesy, till I knew, that it was the town-constable, that, making a search for some suspicious persons, and coming by my chamber, that wanted a lock, either had a mind to make us take notice of so considerable an officer, or no mind that we should sleep, whilst our betters watched; and for his not coming in, some accents of fear, that fell from him, made me suspect I was obliged for that to myself; and I remember, that just at the opening of the door, he peeping in, espied me drawing a pistol out of one of my holsters, which, I believe, made him so niggardly of his company. Well, away went my gentleman in prosecution of his search, and I e'en took my bows and arrows, and went to sleep. The next day we dined at *Winchester*, and ever and anon, by the trembling passengers we met, were as nicely

[a] 'the handle after the axe'. Both the English and the French suggest the same meaning, i.e., to give up in despair.

[b] Boyle refers to a halberd painted brown, known as a 'brown bill', used by foot soldiers and watchmen.

catechized concerning our ways, as if we were to be elected in the number of the new lay elders. From thence we reached *Salisbury* that night, though before we came thither, we were fain to pass in the dark through a wood, where we had warning given us, that about an hundred woodmen (we have got wild English too now) lay leiger, where these night-birds used to exercise their charity in easing weary travellers of such burthensom things as money and portmanteaus. There was nothing in all my journey vext me so much as the gravity of my steed; for though he were none of the freest of his legs, yet he kept my body in a restless agitation, which was none of the pleasantest in the world neither; and if now and then I did solicit his sides, to persuade him to gallop (a dialect, that his feet were utterly unacquainted with) it should be short itself, and both ushered in and epilogized with so long and so jolting a trot, that the trouble of it was far greater than the ease. At *Salisbury* I overtook my trunks I had sent thither before; and the next morning took them along with me over the plain; where when we had gone about half the way, we were suddenly environed with a party of horse (beyond whom we might discover a body of foot) who came poudering[a] so furiously upon us, that they scarce gave us leisure to draw; but coming nearer, and knowing the state's messenger (as he called himself) they durst not /p. 17/ meddle, neither with us, nor with my trunks, which they eyed though very lovingly; and had not we been there, would, I believe, have opened to search for malignant letters, such as use to be about the King's picture in a yellow boy.[b] The foot we saw were poor pressed countrymen, whom this party of horse were sent, not to convey, but to guard. Amongst them I saw one poor rogue, lacqueyed by his wife, and carrying a child upon his shoulders. A pretty device, methinks, to make those, who have no goods, to fight for their wives and children! Good God! that reasonable creatures, that call themselves Christians too, should delight in such an unnatural thing as war, where cruelty at least becomes necessity, and unprocured poverty becomes a crime; and a man with his whole family must be subject to be unavoidably undone, because the violence perhaps of those very soldiers, that press him, had made him poor. At last on Saturday night I arrived, God be praised, at *Stalbridge*, and found by experience the truth of that senseless proverb, the longest way about is the nearest way home.[c] And here the fair weather, that had been my constant companion from *London* hither, as soon as it saw me housed, took leave of me; in whose absence winter weather has always so fully and uninterruptedly domineered, that we all suspect the almanack-maker of a mistake, in setting down March instead of January. It confines me to my chamber, and is so drooping, that it dulls me to all kinds of useful study, and (which is worst of all) it renders me obnoxious to these country visits (or visitations rather) which, you know, use to supply with their length what they

[a] i.e., powdering, falling violently or hastily upon.
[b] A 'yellow boy' was a gold coin.
[c] This proverb first appeared in Francis Quarles, *Emblemes* (London, 1635), iv, emblem 2.

want in their goodness. As soon as the weather will give me leave, I entend to take *Marston Bigot* in my way to *Bristol*, to put some end or other to the business[a] – I am loaded with civil language and fair promises;[b] but I have always observed, that in the troopers dictionary the pages are so close and thick written with promises, that there is no room left for such a word as performance.[c]

My *Ethics* go very slowly on;[d] neither have I been possibly able to do any other business, save to make my brother's sixty trees bear him some golden fruit, of which, (though I did my uttermost endeavour to ripen it) I must gather but one third at May-day next, the other at &c.[e]

My stay here, God willing, shall not be long, this country being generally infected with three epidemical diseases (besides that old leiger sickness, the troop-flux) namely the plague, which now begins to revive again at *Bristol* and *Yeovil* six miles off, fits of the committee, and consumption of the purse;[f] to which so violent expulsives, if so potent an attractive, as a letter from you, were but added, it would both extremely sweeten the stay, and accelerate the departure of,

My dearest sister,
your most affectionate brother,
and humble servant,
ROBERT BOYLE.

Stalbridge, March 30,
1646.

BOYLE to UNKNOWN CORRESPONDENT 14 April 1646

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'Stalbridge Apr. 14 1646'.

BOYLE to UNKNOWN CORRESPONDENT 9 June 1646

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'London June 9 1646'.

[a] There is a lacuna in the printed version at this point.
[b] Marston Bigot, Somerset, was the seat of the Lord Broghill.
[c] An evident colloquialism alluding to the unreliability of the army.
[d] Boyle refers to his *Aretology*. See Harwood, *Essays and Ethics*, pp. 3–134.
[e] Presumably Boyle is here referring to his brother Roger, Baron Broghill.
[f] Boyle is here using a medical metaphor to refer to two of the most unpopular aspects of wartime parliamentary administration, the county committees and high taxation, as well as the fact that the movement of the armies spread diseases such as the plague.

BOYLE to RICHARD BOYLE, SECOND EARL OF CORK 14 July 1646

From the retained copy in Boyle's early hand in BL 1, fol. 135. 4°/2 on gilt-edged paper.
Previously printed in Birch (ed.), *Works* (1744), v, 235. Also printed in Birch (ed.), *Works* (1772), vi, 44.

My dearest Brother.[1]

I thouht I had a very just reason to quarrel with my Sicness, for debarring me the happiness of wayting upon my Sister:[a] but now I am willing to consent to a Reconciliation, since the Enjoyment of her Company must have had so short a Date, as wud have serv'd but to have tauht me the greatness of my Losse. For a late Ordnance of Parliament, (which it seems is very ambitius of the honor of your Companys) depriving all those of the Benefit of the Articles of Oxford, & ranking them with the greatest Enemys of the State; that shal not com hither to prosecute their Compositions by the first of August next;[b] dos seem to exact your very speedy Repaire to London where your presence wil be very longingly expected by, & extreamely welcome to,

Dearest Brother,
Your most faithfull &
humble Servant
Robert Boyle.

London, this
14th of July
1646.[2]

For the Earle of Corke
at Yorke / these
with my service[3]

Endorsed by Miles on fol. 136 'To the E of Corke London July 14 1646.' and with Miles's crayon number '2'.

[a] i.e., Lady Ranelagh.

[b] The 'Ordinance' to which Boyle refers was in fact an order of the House of Commons; see M. A. E. Green (ed.), *Calendar of the Committee for Compounding with Delinquents, 1643–1660*, 5 vols (London, 1889–92), i, 41 and ii, 1474. Parliament sequestered the estates of all royalists during the Civil War but most supporters of the King could redeem their possessions on payment of a fine, known as composition. Under the articles by which Oxford capitulated in June 1646, all royalists in the garrison were allowed six months to compound but the order of the House of Commons stated that royalists who had initiated composition proceedings had to come to come to terms with the committee by 1 Aug. or else be debarred from composition altogether, and presumably forfeit their estates. Boyle's fears appear to have been unfounded, as the 2nd Earl of Cork was allowed to compound in accordance with the Oxford articles on 28 Nov. 1646.

BOYLE to UNKNOWN CORRESPONDENT 22 July 1646

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'London July 22 1646'.

BOYLE to UNKNOWN CORRESPONDENT 25 August 1646

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'London August 25 1646'.

BOYLE to UNKNOWN CORRESPONDENT 19 October 1646

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'London October 19[1] 1646'.

BOYLE to ISAAC MARCOMBES 22 October 1646[a]

From the printed version in Birch (ed.), *Works* (1744), i, 17–20. Also printed in Birch (ed.), *Works* (1772), i, xxx–xxxiv. Two passages omitted from the published versions are marked by asterisks.

MONSIEUR,

SINCE discountenance of the practice of your language has robbed me of that little readiness your converse had taught me in it, I shall take the liberty to make use of mine, which I know you understand equally with your own.

IN my last I promised you a more full account of sundry particulars, I had then the leisure but to touch at;[b] and for my disengagement I shall tell you, that we are in a very doubtful condition for the present, though in all probability a few days will determine either our hopes or our fears. In *England* the great and uninterrupted successes have transcended as well their own hopes, as their opposers fears. In *England* there is not one malignant garison untaken, and in *Wales* but two or three rocky places hold out for the King, and these too so inconsiderable, that they more advantage their enemies forces, by keeping them /p. 18/ from idleness, than

[a] Birch gives this letter as written in London.
[b] This letter is not extant.

they are able to prejudice them by their opposition.[a] The Scots being now to quit the kingdom, the parliament had compounded with them for all their arrears, upon whose payment they are to deliver up their garisons, and retire into their own country. The sum total, being in all 300,000l. is already agreed upon; but the first payment is yet in debate. His majesty is still at *Newcastle*, both discontenting and discontented; and the Scots will now, upon their departure out of *England*, be forced some way or other to dispose of his person, which the houses have here voted to remain at the disposition of both houses of parliament.[b] The greater part of men in these parts are pleased to flatter themselves with the hopes of a speedy settlement of things; but for my part, that have always looked upon sin as the chief incendiary of the war, and yet have by careful experience observed the war to multiply and heighten those sins, to which it owes its being, as water and ice, which by a reciprocal generation beget one another, I cannot without presumption expect a recovery in that body, where the physic, that should cure, but augments the disease. And this opinion of mine is over and above grounded upon such politic considerations, (though known to very few besides my self) that in this I must even wish to have less reason on my side. Those, that appear for the King in *Scotland*, are bodied in an army of above 8000 men; a power so formidable in that country, that certainly, if by the Scots ill usage to his Majesty it be provoked, it will be able, if not to conquer, at least to ruin that beggared kingdom.[c]

AS for *Ireland*, the news of my lord of *Ormonde's* peace with the Irish, together with the articles, upon which it was concluded, have, I am confident, reached *Geneva* long ere this.[d] But our latest intelligence out of those parts informs us, that peace is very likely to produce its contrary amongst them that made it, not only by dividing betwixt the Irish and themselves, for not only the Irish attempted,

[a] Denbigh, Holt, Conway, Chirk and Harlech castles in Wales were still held by the royalists at this date. Harlech, the last to hold out, surrendered in Mar. 1647. See S. R. Gardiner, *History of the Great Civil War*, 3 vols (London, 1886), iii, 139–40.

[b] Charles I surrendered to their forces on 5 May 1646 outside Newark. On withdrawing from Newark to Newcastle-upon-Tyne the Scots took the King with them. On 22 Sept. 1646 the English Parliament voted that the disposal of the King was a matter solely for themselves. Boyle seems to be misinformed as in Sept. the English Parliament agreed to pay the Scots £400,000 in settlement of their arrears, at which point the Scots promised to depart England, leaving the King behind, on receipt of the first half. Accordingly Charles I was handed over on 30 Jan. 1647. See D. Stevenson, *Revolution and Counter-Revolution in Scotland, 1644–51* (London, 1977), pp. 73, 78–80.

[c] Boyle is probably referring to an attempt by Sir Alaster MacDonald and the Earl of Antrim to raise an army from the anti-Campbell Highland clans to march into England and free the King; they were defeated by the covenanter army under David Leslie in the course of 1647. See E. Furgol, 'The Civil Wars in Scotland' in J. P. Kenyon, J. H. Ohlmeyer and J. S. Morrill (eds), *The Civil Wars: A Military History of England, Scotland and Ireland, 1638–1660* (Oxford, 1998), pp. 41–72, on p. 62.

[d] A reference to James Butler (1610–88), 1st Marquis of Ormonde, who commanded royalist forces against Irish rebels during the rebellion. Ormonde's peace treaty with the Irish Confederates was proclaimed in Dublin on 30 July 1646. See J. C. Beckett, *The Cavalier Duke: A Life of James Butler, 1st Duke of Ormonde, 1610–1688* (Belfast, 1990), p. 37. Marcombes was domiciled in Geneva.

though vainly, to surprise my lord of *Ormonde*, and cut off his party, whilst they were in their quarters; but the best general, and most numerous army, together with divers of their greatest towns, have positively declared against the peace; to which the old English or catholic lords of the English pale, (so we call the counties about *Dublin*) with many others, have submitted; so that these two flints are striking such sparks, as are like to kindle a fine bonefire for the English, if they have the wit but to lay hold on the opportunity, and blow these private discontents into a civil war. Now this relation, however it seem not to carry with it any great probability, I am the more apt to believe, because it is credited by the knowledge of the Irish interests; for the lords of the pale, though by manners and inclination Irish, yet being English by descent, do with reason suspect, that if they give way to a total expulsion or extirpation of the English, their turn will come next to drink out of the same cup; and therefore are very willing, by assenting to this peace, to secure themselves from that fear, and from the manifest danger, that threatned them from their nearness to *Dublin*, in the protestants hands, and the most considerable place of the kingdom.[a] On the other side, the mere natives promised themselves for the general, by this rebellion, to exchange the throne of *England* for *St. Peter's* chair; or at least to shake off the *English* yoke for that of some foreign prince of their own religion; and in particular the nobility had already devoured in their greedy hopes all the protestants estates; upon whose presumed accession they built strange and imaginary castles in the air. And the clergy, the main firebrand of this rebellion, expected no less than to be reinstated into their ancient possessions; so that both these latter parties being thus frustrated of their hopes, endeavour to foment among the people (very fit tinder to catch at such a fire) a dislike of the present peace, which the former oppose by their authority, and the latter by thundering out excommunications against all those, that do act; a course, that has a strange influence upon that kind of people, whose superstition makes them believe a reality of force in those scare-crow-thunder-bolts, that derive all their power only from the people's weakness, and are terrible for nothing, but because they are pleased to fear them.

THIS day with kingly state was buried the great earl of *Essex*, having 400 officers, not one so low as a captain, the house of peers, the house of commons, the city, and the assembly of divines, for his mourners, and all the other parting compliments of honour, that ever subject could aspire unto.[b] His sickness was an

[a] Boyle refers to Owen Roe O'Neill (c. 1590–1649), commander of the confederate army in Ulster, who won an overwhelming victory over the Scots at Benburb and supported the Papal Nuncio Giovanni Battista Rinuccini (1592–1653) in condemning the treaty with Ormonde for failing to guarantee Catholic freedom of worship. O'Neill marched south and overthrew the confederate leaders who had negotiated the treaty in Sept. 1646. See J. H. Ohlmeyer, 'The Civil Wars in Ireland' in Kenyon, Ohlmeyer, and Morrill (eds), *The Civil Wars* (above, p. 37), pp. 73–102, on pp. 90–1.

[b] Robert Devereux (1591–1646), 3rd Earl of Essex, parliamentary general, died on 14 Sept. 1646. He received a public funeral by order of Parliament on 22 Oct. in Westminster Abbey, which Boyle appears to have witnessed.

apoplexy, which did not long make him linger; and thus he, that had escaped so many mutinies, as last perished by a mutiny of the humours. But I have usually observed, that in these great funeral solemnities, the pageantry of sorrow has eaten up the reality; and the care of the blaze diverted men from mourning. Besides these costly flatteries of the dead (with neglect of the poor, whom that charge might keep alive) seem to endeavour to make them guilty of prodigality in their very graves, whilst it wastes that upon a senseless carkass, that is to it as useless, as it is needless; whereas it were much better for them to procure the prayers of the living, than their admiration.

MY lord of *Inchiquin's* absence from *Munster*, the greater part of this summer, by leaving my brother *Broghill* the sole command of his army, gave him an opportunity to manifest to the world his gallantry, which he did with an unwonted success; and that no less constant than it was great.[a] But his own wants at home at last reduced him to that starving condition, that when he prayed for his daily bread, his request reached at least as far as his expectation. He is now there soliciting for supplies for distressed *Munster*, which, though /p. 19/ very liberally voted, are so slow in their dispatch, that many think they have just cause to apprehend, that the physic will not get thither, before the patient be dead. His actions have hereby gained him a general esteem; and he has (if he were not my brother, I durst say deservedly) acquired the repute of none of the least wits of the time. He and I within these ten days intend, God willing, for the West, in order to his journey to *Munster*, whither he is now to carry over, under his own command, a gallant brigade of 4000 effective foot and 1500 horse, for the parliament, in that province, till the ensuing spring enable them to transport thither a more considerable power.[b]

THE presbyterian government is at last settled (though I scarce think it will prove long lived) after the great opposition of many, and to their no less dislike;[c] though it seemed very high time unto others, that some established and strict discipline should put a restraint upon the spreading impostures of the sectaries, which have made this distracted city their general rendezvous, which entertains at this present no less than 200 several opinions in point of religion, some digged out of

[a] This is a reference to Murrough O'Brien (1614–74), Baron Inchiquin, who became President of Munster in 1645.

[b] Broghill went to England in July 1646 where he was proposed as the commander of an advance party of the force intended to be sent to Munster under the command of Viscount Lisle. However the scheme fell through and his commission was suspended on 8 Oct. 1646. Boyle may be trying to hide this fact from Marcombes, who was Broghill's former tutor. Broghill returned to Ireland in Jan. 1647. See Patrick Little, 'The Political Career of Roger Boyle, Lord Broghill, 1636–1660', unpublished Ph.D. thesis, University of London (2000), pp. 82–94.

[c] Parliament had agreed to establish a presbyterian system of church government in 1645 but Boyle is probably here referring to the ordinance abolishing episcopacy passed on 9 Oct. 1646. See Firth and Rait, *Acts and Ordinances*, i, 879–83. For Boyle's concern for the proliferation of religious sects which he goes on to speak of, see below, p. 47.

those graves, where the condemning decrees of primitive councils had long since buried them; others newly fashioned in the forge of their own brains; but the most being new editions of old errors, vented with some honourable title and modern disguisements; so that certainly if the truth be any where to be found, it is here sought so many several ways, that one or other must needs light upon it. But others, that justly pretend to a greater moderation, suspect, that our dotage upon our own opinions makes us mistake many for impostures, that are but glimpses and manifestations of obscure or formerly concealed truths, or at least our own pride and self-love make us aggravate very venial errors into dangerous and damnable heresies. The parliament is now upon an ordinance for the punishment of many of these supposed errors; but since their belief of their contrary truths is confessedly a work of divine revelation, why a man should be hanged, because it has not yet pleased God to give him his spirit, I confess, I am yet to understand.[a] Certainly to think by a halter to let new light into the understanding, or by the tortures of the body to heal the errors of the mind, seems to me like the applying a plaister to the heel, to cure a wound in the head; which doth not work upon the seat of the disease.

MY brother *Broghill* continues very much your friend, and, I am confident, will be very ready upon occasion to realize his professions; and the like I dare boldly affirm of my sister *Ranelagh*. An employment fit for you we cannot yet procure, because all our nobility stands at a gaze, to see whether the issue of the treaties now in debate will be either peace or war; in either of which cases it is probable, that a good many of them will make visits to foreign climates.

THE sadness of your condition I very much resent, and would offer you my assistance to sweeten it, if I did not think the proffer superfluous;[b] but truly I believe it would less afflict you, if you were a spectator of our miseries here, where every day presents us with much more unusual dispensations of providence, where I myself have been fain to borrow money of servants, to lend it to men of above 10000l. a year.

I WAS yesterday in company with our *Irish* St. *Austin*, the archbishop of *Armagh*; and having told him, that you unfolded his mystery of *the Incarnation* in *French*, he seemed very willing, that you should publish it, upon the assurance I gave him of the fidelity of its translation.[c] * * * * * *

[a] This ordinance was passed on 2 May 1648. It made heresy a felony punishable by death. See Firth and Rait, *Acts and Ordinances*, i, 1133–6.

[b] Nothing is known of Marcombes's condition: it has been suggested that Boyle's visit to France in 1645 was in order to settle his indebtedness to him. See above, pp. 20, 26n.

[c] Boyle refers to James Ussher (1581–1656), biblical scholar, bishop of Meath and archbishop of Armagh. Ussher was the author of *Immanuel, or The Mystery of the Incarnation of the Son of God* (1638). There is no evidence of any contemporary translation.

AND now it is high time I should give you some account both of myself and of my condition; which truly hath been chequered with a great deal of variety of fortune, and a great many vicissitudes of plenty and want, danger and safety, sickness and health, trouble and ease; wherein I were guilty of an ingratitude great as the favour I have received, if I did not acknowledge a great deal of mercy in God's dispensation towards me; which truly hath been so kind, as oftentimes to work my good out of those things I most feared the consequences of, and changed those very dangers, which were the object of my apprehension, into the motives of my joy. I was once a prisoner here upon some groundless suspicions, but quickly got off with advantage.[a] The roguery of *Tom Murray* gave me a great deal of trouble to discover and prevent;[b] but I thence reaped the benefit of making further discoveries into oeconomical knowledge, than ever otherwise I should have done. I turned him away last year, to let him know, that I could do my business very well without him; but now, having attained to a knowledge of my own small fortune beyond the possibility of being cheated, I am likely to make use of him again, to shew my father's servants, that I wish no hurt to the man, but to the knave.

I HAVE been forced to observe a very great caution, and exact evenness in my carriage, since I saw you last, it being absolutely necessary for the preservation of a person, whom the unfortunate situation of his fortune made obnoxious to the injuries of both parties, and the protection of neither. Besides I have been forced to live at a very high rate, (considering the inconsiderableness of my incomes) and, to furnish out these expences, part with a good share of my land, partly to live here like a gentleman, and partly to perform all that I thought expedient in order to my Irish estate, out of which I never yet received the worth of a farthing. * * *

AS for my studies, I have had the opportunity to prosecute them but by fits and snatches, as my leisure and my occasions would give me leave. Divers little essays, both in verse and /p. 20/ prose, I have taken the pains to scribble upon several subjects; some of the least bad of which I shall venture to send you over, as soon as my next vacation spares me time to lick them into some less imperfect shape.[c]

THE *Ethics* hath been a study, wherein I have of late been very conversant, and desirous to call them from the brain down into the breast, and from the school to the house.[d] I have endeavoured to make it not only a lanthorn, but a guide, in a just, though a brief treatise, that I am writing of it; having already with much trouble in some sixteen chapters travelled through the most difficult part of it, and

[a] No information has come to light concerning this event.

[b] Tom Murray or Murrey was a servant at Stalbridge Manor. See *II Lismore,* v, 180. The nature of his 'roguery' is unclear.

[c] Boyle spent the 1640s writing a broad range of texts. See Harwood, *Essays and Ethics*, p. xx.

[d] Boyle refers to his *Aretology*, begun in 1645, for which see Harwood, *Essays and Ethics*, pp. 3–134.

that wherein I saw others deficient, I believe I shall leave the rest to be compleated by those, who enjoy more leisure.

THE other humane studies I apply myself to, are natural philosophy, the mechanics, and husbandry, according to the principles of our new philosophical college, that values no knowledge, but as it hath a tendency to use.[a] And therefore I shall make it one of my suits to you, that you would take the pains to enquire a little more thoroughly into the ways of husbandry, &c. practised in your parts; and when you intend for *England*, to bring along with you what good receipts or choice books of any of these subjects you can procure; which will make you extremely welcome to our *invisible college*, which I had now designed to give you a description of, but a gentleman, whom I have been forced to keep talk with all the while I was writing this, together with the fear of having too much already trespassed upon your patience, call upon me to end your trouble and this letter together.[b]

BOYLE to BENJAMIN WORSLEY [after 21 November 1646][c]

From the printed version in Birch (ed.), *Works* (1744), v, 232–3. Also printed in Birch (ed.), *Works* (1772), vi, 40–1.

Dear Mr. WORSELEY,

YOUR silence would extremely trouble me, if, as it denied me the happiness to hear from you, I had also missed the contentment of hearing of you. But this last I received in a letter of my sister *Ranelagh*, together with the welcome news, that your propositions had already passed the house of lords (who it seems are at leisure to hear petitions, now they have little or nothing else left them to do) and is retarded only by the universal remora of handsom designs, the want of a little dung-coloured earth.[d] Truly I never found in myself such strong desires for that

[a] This is the first mention in Boyle's correspondence of the group of experimental philosophers identified as the Invisible College. See Charles Webster, 'New Light on the Invisible College: The Social Relations of English Science in the Mid-Seventeenth Century', *Transactions of the Royal Historical Society*, 5th Series, 24 (1974); Webster, *Great Instauration*, pp. 57–67; and Michael Hunter, 'How Boyle Became a Scientist', *History of Science*, 33 (1995), 59–103.

[b] This gentleman has not been identified.

[c] Evidence for this date is provided by Worsley's petition, see note below. The letter is undoubtedly from Stalbridge.

[d] Worsley's petition for letters patent for making saltpetre without all the inconveniences to persons and property described by Boyle was read in the House of Lords on 21 Nov. 1646. Worsley petitioned again in Dec. because, although the House had directed an ordinance to be prepared to grant his petition, the ordinance had never been read. The letter of Lady Ranelagh referred to is not extant.

adored muck, as now, that I see what gallant projects its affluence may promote. And I am apt to believe that a very justifiable avarice, that wishes not the possession of riches, but the employment; and not so much for the pleasure they may reap by it, as for the good they may do with it. But I must confess to you, that, in my wishes for the prosperity of your pious powder-plot, my private interests would needs mingle with more publick considerations, I having been lately so vexed by those undermining two-legged moles, we call saltpeter-men, that my purse, as well as my affection, makes vows for your success. My pigeon-house they are already digging up, (an emblem of the practice of the times, in the ruin of unarmed innocence) and would have done the like to my cellar and stables, if I had not ransomed them with a richer mineral than that they contain. I hoped my retreat to this solitude would have made me master of leisure enough to entertain my own banished thoughts, and perfect some lame discourses I brought hither with me, to that purpose:[a] but the necessary care of ordering my own small mangled fortune, the unruliness of the troopers, my frequent journies, the allowed incendiaries (the saltpeter-men)[b] and (to complete my disasters) the tedious, senseless visits of our country gentlemen, have so shared my hours amongst them, that I find here as great a dearth of time, as there is of corn; and have now less of it at my own disposal, than when I was fain to trifle it away with the ladies: and the plain truth of it is, that (betwixt the injustice of those, that hold the civil sword, and the unruliness of those, that draw the martial) things are carried in so strange a way in the *West*, that these parts can afford little content or safety to any man, that is not either a soldier, a sequestrator, or a committee-man. My grand employment, in my spare hours, is, to catechise my gardner and our ploughmen, concerning the fundamentals of their profession; where I have fortuned upon some observations, that have persuaded me into a paradox in husbandry, as new as any of the religions minted in your heretical [*Coleman*] street.[c] The opinion itself, together with the reasons that led me to it, you shall hear of, God willing, by the next opportunity; I being extremely mindful of my promise, to transmit to you any thoughts or experiments of mine, that I shall judge conducible to the furtherance of your great design, and the enabling you to /p. 233/ do for the great world, what the chairmen of the physicians has done for the little, publish a discourse *de usu partium*.[d] But lest

[a] Boyle had been at Stalbridge earlier in the year (see above, pp. 31–4) and had evidently now returned there. For the writings Boyle produced in the 1640s see Harwood, *Essays and Ethics*, p. xx.

[b] There were numerous ordinances relating to the provision of saltpetre, which gave wide powers to the saltpetre-men. See Firth and Rait (eds), *Acts and Ordinances*, i, 320 (23 Oct. 1643), 418 (3 Apr. 1644), 578 (7 Dec. 1644), and others of later date.

[c] '[*Coleman*]' is an editorial interpolation in the Birch edition of Boyle's *Works*, and refers to a conventicle in Coleman Street, London, which was notorious for the preaching of Anabaptists. This group was well established in London at this time and gave considerable help to the parliamentary party during the Civil War.

[d] A reference to *De usu partium corporis humani* by the medical writer Galen (AD 129–99).

the tediousness of this letter should fright you from the lecture of those others, that are destined to attend it, I will hasten to a conclusion; which though custom enjoin me to make with a compliment, yet I am resolved to continue so obsequious to our late decrees against that useless ceremony, that, to be sure to keep far enough, not only from the guilt, but from the very suspicion, of that crime, I will content myself with as naked, as true a profession of my being very really,

SIR, &c.

BOYLE to UNKNOWN CORRESPONDENT 18 December 1646

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'Stalbr December 18 1646 In London at short time *at* Christmas see Letter March 8th following to Mr Strowd'.[a]

[a] For 'Mr Strowd' see below, p. 52n.

— 1647 —

Lost letters from 1647 referred to in surviving letters are as follows:

Hartlib to Boyle, before 19 March 1647 (below, p. 52).

Boyle to Hall, 8 May 1647. Presumably this is Boyle's reply to John Hall's lost letter of 26 April (below, p. 57).[a]

Boyle to Dury, 8 May 1647 (below, p. 60).

For other lost letters that have been placed by date, see below and pp. 52–4, 56–7, 61–2.

BOYLE to UNKNOWN CORRESPONDENT 22 January 1647

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'London Jan 22 1646[/7?]'.

BOYLE to UNKNOWN CORRESPONDENT 5 February 1647

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'Stalb Feb. 5 1646'.

BOYLE to FRANCIS TALLENTS[b] 20 February 1647

From the printed version in Birch (ed.), *Works* (1744), i, 20–1. Also printed in Birch (ed.), *Works* (1772), i, xxxiv–xxxv.

[a] For John Hall see below, p. 54n.

[b] Francis Tallents (1619–1708), Fellow of Magdalene College, Cambridge, D.D. 1648, and writer of religious works. See H. Owen and J. B. Blakeway, *A History of Shrewsbury*, 2 vols (London, 1825), ii, 379–83. According to Birch, this letter was written by Boyle in London to Tallents in Cambridge.

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SIR,

I SHOULD venture to apologize for my silence, if I thought it not less guilty than meritorious; since to reprieve you from the importunity of my letter, I have hitherto denied myself that happiness, that your civility makes me confident I might have enjoyed by the receiving of yours. I have been every day these two months upon visiting my own ruined cottage in the country; but it is such a labyrinth this *London,* that all my diligence could never yet find the way out on't, and hath but just now put me in a probability of leaving it within these two days or three days.[a] The best on't is, that the corner-stones of the *invisible*, or (as they term themselves) the *philosophical college*, do now and then honour me with their company,[b] which makes me as sorry for those pressing occasions, that urge my departure, as I am at other times angry with that solicitous idleness, that I am necessitated to during my stay; men of so capacious and searching spirits, that school-philosophy is but the lowest region of their knowledge; and yet, though ambitious to lead the way to any generous design, of so humble and teachable a genius, as they disdain not to be directed to the meanest, so he can but plead reason for his opinion; persons, that endeavour to put narrow-mindedness out of countenance, by the practice of so extensive a charity, that it reaches unto every thing called man, and nothing less than an universal good-will can content it. And indeed they are so apprehensive of the want of good employment, that they take the whole body of mankind for their care.

BUT lest my seeming hyperbolical expressions should more prejudice my reputation than it is able any ways to advantage theirs, and I be thought a liar for telling so much truth, I will conclude their praises with the recital of their chiefest fault, which is very incident to almost all good things; and that is, that there is not enough of them.

FOR news, I believe you do not ignore, what a stream of success the parliament, since I had the honour to see you, has had.[c] I will only now take the freedom to tell you, that I am greatly afraid, most men flatter themselves in their prognostications of peace, which are calculated rather to the meridian of their desires, than to that of their reason. And though I must confess, the traveller seems to be very near the inn, yet I know not why the horse may not stumble at the threshold; for I am somewhat unapt to persuade myself, that the judgement will cease, while the cause continues; but am rather very ready to apprehend, that while adversity makes some obstinate, and others wanton, though the war perhaps may die, the judgment will be kept alive. The pulpits were never more adorned with excellent

[a] Presumably Boyle refers to his estate at Stalbridge in Dorset. The county was repeatedly fought over during the Civil War.

[b] For the Invisible College see above, p. 42n.

[c] By this date the Scots had left England and handed Charles I over to Parliament. Only Chirk and Harlech castles were still held by the royalists in Wales. See above, pp. 36–7.

divines, than they now are here, but with so unsuitable a success in many of the people, that I can sometimes think it no breach of charity to believe, that the small-pox has stricken inward, and many of them have but banished their vices from the body into the heart. For my part, the excellency of the ministry, since waited on by such an improficiency, increases my presaging fears of the approaching misery of the people; for I shall easily be drawn to suspect that horse to be very sick, that thrives not in so plentiful a pasture. And truly, methinks, it is but a very sad symptom, when the physic augments the disease. For matter of sects, it seems, that most of those at *Amsterdam* have been returned us over by bill of exchange, which our English searchers have been so industrious to improve, that there are few days pass here, that may not justly be accused of the brewing or broaching of some new opinion. Nay, some are so studiously changling in that particular, they esteem an opinion as a diurnal, after a day or two scarce worth /p. 21/ the keeping. If any man have lost his religion, let him repair to *London*, and I'll warrant him, he shall find it: I had almost said too, and if any man has a religion, let him but come hither now, and he shall go near to lose it. Pray God, it fare not with religion amongst those novelties, as it does sometimes with a great commander, when he is taken prisoner by a company of common soldiers, who every one tugging to have him for himself, at last pull him to pieces, and so each get a limb, but none enjoys him whole. For my part, I shall always pray to God to give us *the unity of the spirit in the bond of peace*,[a] and desire you to believe, that, amongst all the apostasies of the time, I shall be the least capable of being seduced by that, that may oppose my being and continuing so,

Your most affectionate friend and faithful servant,
ROBERT BOYLE.

[BOYLE] to [?WORSLEY] [late February 1647][b]

From the retained copy in Boyle's early hand in BL 1, fols 162–3. Fol/2.
Previously printed in Birch (ed.), *Works* (1744), v, 231–2, and Birch (ed.), *Works* (1772), vi, 39–40.

[a] Boyle cites Ephesians 4, 3.

[b] In view of its tone and Boyle's known circle of acquaintance about this time, this letter was probably written to Benjamin Worsley. The date is assumed from the fact that Boyle was in London on 20 Feb. (see above, p. 45n.) and at Stalbridge on 27 Feb. and 6 Mar. (see below, p. 47n.); by the latter date some of the chemical apparatus that he ordered had arrived.

The Permission You were pleas'd to vouchsafe me of begging in Your Letters, some part of that Satisfaction I am necessitated to relinquish with Your Company; ‹is that which› gives You the Trouble of this Letter, & me the Confidence of giving You this Trouble. which I do with the lesse Scruple, because Your Conversation hath ascertaind me; that what I ‹most doe›[1] want, You can as easily spare. For I desire not to put You to the Trouble of gadding to Whitehall or Westminster, to send me the Intelligence of what Resolv'd or Voted there. ‹No;› without stirring out of Your Laboratory, You may give me all the Information I sue for; since I begge no Account ‹of any thing› but of what's done there; & shall desire no Mercurius to march on any other then on Vulcan's Errands. And I know Your Letters (aswel as Your Discourses) are as Naturally more fertile in Philosophy then Newes, as Oysters are in Pearles then in ‹Rattles›.[2a] I need not mind You of the Observation that Chymist's Acquaintance is of age at a Day-old. (‹As› The Needle & the Loadstone at their first meeting Cloze, as if they did so upon an Ages Friendship.) ‹For You know that› Vulcan is a quicquer Mediator of Amitys then even Virtue hir selfe: & those Mettals that grew in (never so) distant Mines, he ‹can›[3] in a few minits, perfectly & exactly associate & unite.[b] Nor[4] should I regret the Time & Paines I have spent in Chimistry, tho I had never deriv'd from them any other Benefit, then their having ‹thus›[5] early ‹radicated› my Acquaintance with You. From whom I must now earnestly begge the Favor of that Correspondence, with whose Promise You[6] /fol. 162v/ had the Charity to sweeten my ‹unwelcome› Separation from You. But I shall not only Consent but ‹article›,[7] that not alone all Ceremony & Complement, but ev'n all Rhetoricke & Care of Language, may be ‹severely› banisht from our Commerce: as things yet ‹lesse›[8] consistent with Chymistry & Employ'dnesse then with ‹Freedome or with› Truth: & for my Part; so Your ‹Letters› be but as[9] fraught as Your Discourses with Gold of Ophir I shall very willingly bate You the Apes & the Peacockes:[c] which I know too ‹that one so rich in all but ‹Trifles as›[10]› You would find as much a more ‹unobvious› as a lesse Valu'd fraight. That which would most trouble me in this Philosophicall Trafficke would be; that[11] it's Advantages will be too entirely mine; (since I feare my Retributions will be so trifling as to amount but to Acknowledgments not ‹Exhanges›)[12] but that I consider that in Knowledge 'tis as much more Glorious as more Blessed to Give then to Receive; since where[13] our Returnes cannot encrease Your Knowledge, they argue it; ‹&› in as celebrating a Way as the Starres do the Sunne's transcendent Brightnesse; by their Disability to highten it by all their's. And since the Minde's Intellectuall Splendor, Knowledge, both as a Good & as a Light,[14] must doubly Joy in that kind Property Diffusion, I shall not despaire of making You ‹at least such an›[15]

[a] Worsley's discourses have not been further identified.

[b] On these chemical metaphors see W. R. Newman, *Gehennical Fire: The Lives of George Starkey, an American Alchemist in the Scientific Revolution* (Cambridge, MA, 1994), pp. 138, 230–2.

[c] An allusion to 1 Kings 10, 11 and 22.

Acknowledgement as the Moone ‹makes› the Sunne by her Reflections encreasing Light tho she encrease not His. For I intend to court Nature as eagerly as ‹such a›[16] disaccomodated Solitude will permit me; & give You a Faythfull Account of my Proficiency ‹in hir Favor by Your Mediation &›[17] Influence; but at Present the unluckly ‹& unexpected›[18] lingring of the Waggon which is to bring me all my ‹Vulcanian› Implements; ‹& my necessitated Idlenesse till they come,›[19] makes me wish it drawne by Pegasuses & thinke it drawne by Snayles; & makes me ‹sadly› walke up & downe in my Laboratory[20] like an impatient Lutanist who has his songbooke & his Instrument[21] ready; but ‹is altogether disprovided of› strings. This unseasonable Disaster, by[22] enforcing an ‹unlook't for› Backwardwardnesse [*sic*] in my Preparations, dos also constraine me to mind You of those Remedyes You were pleas'd to promise me the[23] Mayden-head of, (&[24] pricipally [*sic*] those against the Stone & the small Pox the Former of which dos now disquiet me, & ‹of which› the Latter is very rife in these Parts) & to begge that as soone as You have made them; a Proportion of them may be conveight to him, who will not fayle at his ‹next›[25] Remove to London to make Your Favors all the acknowledgments & the Returnes, that may[26] become the Gratitude & manifest the Friendship of

Sir

Endorsed on fol. 163v by Miles: 'This Letter must be written not late in life by the hand, when or near what time I can't Conjecture H.M.' Also '6' (in whose hand it is not clear).

BOYLE to LADY RANELAGH — 27 February 1647[a]

From the fragment printed in Birch (ed.), *Works* (1744), i, 21. Also printed in Birch (ed.), *Works* (1772), i, xxxvi.

* * * As to my *Dublin* business, I must expect from your speedy information (I now beg of you) of their names, to whom the parliament has given power to oblige me there, directions both how to frame, and to whom to address my request.[b] I must acknowledge to you, amongst God's mercies of the first magnitude, both my lord of *Ormonde*'s unexpected coming in, and the parliament's less expected dispatch;[c]

[a] Birch gives this letter as being written from Stalbridge.

[b] Possibly linked to matters mentioned in Boyle to Annesley, 28 Feb. 1646, above, pp. 29–30.

[c] For James Butler, 1st Marquis of Ormonde, see above, p. 37n. In Feb. 1647 Ormonde made a formal offer to Parliament to surrender Dublin and the other garrisons under his command to their forces. The first parliamentarian soldiers arrived in Dublin at the end of Mar. and Ormonde formally handed over his command in June. See J. C. Beckett, *The Cavalier Duke* (above, p. 37), pp. 41–2.

though both very consonant to the wonted method of that gracious providence, that we find then oftentimes the nearest for our rescue, when that is furthest from our expectations. For my part, I am bold to believe, had we no other arguments to prove a providence, yet the strange revolutions, of which in so short a time our ruined country has been the unhappy scene, were more than sufficient to demonstrate that truth, to which alone I shall allow a greater infallibility, than to that other most certain one of my being,

Sister, your most truly affectionate
brother and humblest servant,
ROBERT BOYLE.

BOYLE to LADY RANELAGH — 6 March 1647[a]

From the fragment printed in Birch (ed.), *Works* (1744), i, 21. Also printed in Birch (ed.), *Works* (1772), i, xxxvi–xxxvii.

* * * THAT great earthen furnace, whose conveying hither has taken up so much of my care, and concerning which I made bold very lately to trouble you, since I last did so, has been brought to my hands crumbled into as many pieces, as we into sects; and all the fine experiments, and castles in the air, I had built upon its safe arrival, have felt the fate of their foundation.[b] Well, I see I am not designed to the finding out the philosophers stone, I have been so unlucky in my first attempts in chemistry. My limbecks,[c] recipients, and other glasses have escaped indeed the misfortune of their incendiary, but are now, through the miscarriage of that grand implement of *Vulcan*, as useless to me, as good parts to salvation without the fire of zeal. Seriously, madam, after all the pains I have taken, and the precautions I have used, to prevent this furnace the disaster of its predecessors, to have it transported a thousand miles by land, that I may after all this receive it broken, is a defeat, that nothing could recompence but that rare lesson it teaches me, how brittle that happiness is, that we build upon earth.

[a] According to Birch this letter is dated from Stalbridge. This letter appears in Miles's list of letters of 1645–7 (BP 36, fol. 129), where Miles records 'March 6 1646/7 then his earthen furnace was broke in coming therefore he begun Chemistry at Stalbridge'.

[b] Boyle talks of waiting for this item in [Boyle] to [?Worsley], [late Feb. 1647], above, p. 49.

[c] i.e., alembics.

BOYLE to SAMUEL HARTLIB[a] [early 1647]

From the printed version Birch (ed.), *Works* (1744), i, 28. Also printed in Birch (ed.), *Works* (1772), i, xlvi–xlvii.

Dear Mr. *Hartlib*,

I AM sure, that you have too much charity to want justice; and therefore on the score of your serious promise I am bold, not only to desire, but to expect at your hands a *Mercurius Philosophicus*, in an account of the projects and successes of that *college*, whereof God has made you hitherto the midwife and nurse.[b] I shall not beg any information from you of that *diurnal* news, of which a whole sheet may be had for a peny, and yet be over-bought. No, I will stint my requests to your *Utopian* intelligence, as the only way to keep me in charity with men, by letting me see, that the degenerate world yet harbours some, that do not undeserve the name. As for me, knowing, that my letters will be guilty of faults enough in rhetoric, without loading themselves with any needless crimes in morality, I here openly disclaim all compliments, and solemnly engage myself (as to me) to give them a perfect banishment from our converse, wherein I am confident I shall have but a very easy office to surmount; since for my part I ever esteemed them at best but the froth (not to say the scum) of civility; and for yours, I know the gallantry of your principles leads you to the noblest way of putting them out of countenance, by carrying you to doing men really more good than they dare promise. And since you do not disdain the meanest workman, that is but willing to lay some few stones towards the building of your *college*, I shall in my following epistles (if this procure them a pass) take the liberty to acquaint you with what thoughts and observations of mine I shall judge useful in reference to so glorious a design; to which I shall think it very much my happiness, if any endeavours of mine can have the honour in the least measure to contribute, not only as they owe a duty to the public (though, I must confess, that of itself a very prevalent motive) but because I know you so vastly affectionate to that public, that my invention will furnish me with no fitter way, than that of my services to it, to give you real and accepted testimonies of my being, &c.

[a] This letter has been assigned to Apr. 1647 by R. H. Syfret (*NRRS*, 5 (1947), 120), and to some date after 1647 by G. H. Turnbull (*NRRS*, 10 (1953), 103). The editors are inclined to follow Syfret.

[b] *Mercurius Philosophicus*, 'philosophical Mercury', i.e., Boyle evidently hoped that Hartlib would provide him with philosophical news. In particular, Boyle refers to Hartlib's plans for an 'Office of Address', and institution for the advancement of learning. It was common for the 'Office' to be called a 'College'. On the 'Office of Address' see Webster, *Great Instauration*, pp. 67–77.

BOYLE to MR STROWD[a] 8 March 1646

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '8 [March] 1646/7'. An earlier entry in the list refers to a letter of 8 March 1647 as 'to Mr Strowd', and this is almost certainly the same letter.

BOYLE to UNKNOWN CORRESPONDENT 15 March 1647

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '15 [March] 1646/7'.

BOYLE to HARTLIB 19 March 1647[b]

From the printed version in Birch (ed.), *Works* (1744) i, 22. Also printed in Birch (ed.), *Works* (1772), i, xxxvii–xxxviii.

Dear Mr. *Hartlib*,

I NEED a great deal of rhetoric to express to you, how great a satisfaction I received in the favour of your letter, both for the sake of the theme, and more for that of the author.[c] But my contentment was greatly qualified by the miscarriage of the general writing (which should be stiled the Universal Truchman, or General Interpreter, if I were to be godfather) you were pleased to send me; for the commendations you give it are too great not to make me very sensible of its loss. If the design of *the Real Character* take effect, it will in good part make amends to mankind for what their pride lost them at the tower of *Babel*.[d] And truly, since our arithmetical characters are understood by all the nations of *Europe* the same way, though every several people express that comprehension with its own particular language, I conceive no impossibility, that opposes the doing that in words, that

[a] If this is the 'Col. Stroude' referred to later in the list (below, p. 56), then it is probably William Strode (c. 1589–1666) of Barrington in Somerset, a colonel in Parliament's forces.

[b] This letter appears in Miles's list of letters of 1645–7 (BP 36, fol. 129), where Miles records: '19 1646 to Mr Hartlib'. Birch gives this letter as being written from Stalbridge.

[c] This letter is not extant.

[d] A reference to the work of Francis Lodowick, merchant and member of the Protestant refugee community in London, entitled *A Common Writing* (1647). See M. M. Slaughter, *Universal Languages and Scientific Taxonomy in the Seventeenth-Century* (Cambridge, 1982), pp. 116-19. Boyle contrasts the division of one language into many at the building of the Tower of Babel in Genesis 11 with the plan for communication between different languages based on the 'Radical character' of verbs and nouns in *A Common Writing*.

we see already done in numbers. As for the pneumatical engine, that I use to call a wind-gun, which you mention in your letter as presented to the king, and forbidden by him to have any companions, sure the artist, that received the command, was more ingenious than obedient;[a] for I remember very well to have seen one of them not exceeding in bigness, nor differing much in shape from an ordinary carabine, which being charged by the sole impression of the air, would, by violence of the contracted Boreas, send forth a leaden bullet, just the caliber, with force to kill a man at twenty five or thirty paces distance from him.[b] This wind-gun I saw both charged and discharged; and now it comes into my mind, I read, not long since, in a late mechanical treatise of the excellent *Mersennus*, both the construction and the use of this engine;[c] and amongst the uses one, whose stratagem obliged me to take of it particular notice; and it was, how by the help of this instrument to discover the weight of the air; which, for all the prattling of our book-philosophers, we must believe to be both heavy and ponderable, if we will not refuse belief to our senses. Your *Imago Societatis*, and your *Dextera Amoris*, I have great longings to peruse;[d] and though with a deep sense of my insufficiency, I shall very freely express my obedience in delivering the opinion of

Your humble servant,
ROBERT BOYLE.

BOYLE to UNKNOWN CORRESPONDENT 22 March 1647

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[March] 22'.

[a] For a description of the wind-gun see Boyle's *Spring of the Air* (1660), in *Works*, vol. 1, pp. 167–9. A wind-gun was presented to the Royal Society on 4 Nov. 1663; see Birch, *Royal Society*, i, 324. Hartlib's letter to Boyle is not extant.

[b] An allusion to Boreas, the north wind.

[c] Boyle refers to Marin Mersenne (1588–1648), natural philosopher, *Hydraulica, pneumatica, arsque navigandi. Harmonica, theorica, practica, et mechanica phaenomena*, published as part of *Cogitata physico-mathematica* (1644), p. 149.

[d] The full titles of these works, by the Lutheran theologian Johann Valentin Andreae (1586–1654), are *Christianae societatis imago* and *Christiani amoris dextera porrecta* (1620); see J. W. Montgomery, *Cross and Crucible: Johann Valentin Andreae*, 2 vols (The Hague, 1973), ii, 497–8. Hartlib sent these texts to John Hall at Cambridge for translation; see below, p. 54. The Latin original and John Hall's English translation circulated in the Hartlib circle.

BOYLE to UNKNOWN CORRESPONDENT 2 April 1647

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'April 2'.

BOYLE to UNKNOWN CORRESPONDENT 7 April 1647

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[April] 7'.

BOYLE to HARTLIB 8 April 1647

From the printed version in Birch (ed.), *Works* (1744), i, 22–3. Also printed in Birch (ed.), *Works* (1772), i, xviii–xix.

Dear Mr *Hartlib*,

I HOPE I shall need none other apologies for my last week's silence, than my absence hence, when your letters arrived here. Your *Imago Societatis* with a great deal of delight I have perused, but must beg some leisure to acquaint you with my opinion of it, which now were almost impossible for me to do, I having already presented it to a person of quality,[a] with whom if it take suitably to my wishes, it may thence have no obscure influence upon the public good, concerning which I have lately traced a little dialogue in my thoughts, which my unceasing domestic distractions will by no means as yet permit me to blot paper with.[b] The epistle prefixed to the *Imago* is both pithy and to the purpose.[c] And truly I am extremely glad to see a person of Mr *Hall*'s years employ, in attempts of this nature, that /p. 23/ youth, which the most of those, that are as little indebted to time as he, think too good for their Maker, though they think it not too good to be squandered away. *Campanella*'s *Civitas Solis*, and that same *Respublica Christianopolitana*, which he mentions, will both of them deserve to be taught in our language.[d] Of the *Utopia*

[a] For this text see above, p. 53n. The person Boyle presented the work to has not been identified.

[b] i.e., Boyle's *Free Invitation*, published by Hartlib in 1655; see *Works*, vol. 1, pp. 1–12.

[c] Possibly the 'Epistle to the Reader', written by John Hall for his translation of *Imago societatis*, entitled *A Modell of a Christian Society* (1647). See also above, p. 53n. For John Hall (1627–56), poet and pamphleteer, see G. H. Turnbull, 'John Hall's Letters to Samuel Hartlib', *Review of English Studies*, n.s., 4 (1953), 221–33, on p. 221.

[d] This is a reference to Tommaso Campanella (1568–1639), natural philosopher, author of *La città del Sole*, written in Italian in 1602 and published in Latin as part of *Thomae Campanellae Calabri realis philosophiae epilogisticae partes quatuor* (1623). John Hall had persuaded Collier, possibly Jeremy Collier, Fellow of St John's College, Cambridge, to translate this work. See Turnbull, *H. D. & C.*, p. 226. The second text mentioned is another by Johann Valentin Andreae, *Reipublicae christianopolitanae descriptio* (1619). For Andreae see above, p. 53n. The translation seems not to have been made.

he is modelling, though I cannot judge, before it sees the light, yet my expectations will be none of the smallest, if I proportion them to the ingenuity of the author. [a] And for the Divine Emblems, that he makes us hope for, I must reserve my sense of them for their perusal, since the opinions I embrace, both about the nature and the teaching of virtue, will doubtless appear as paradoxical to others, as they seem probable to me.[b] For those designs of Mr *Hall*'s Tutor, which you have so appropriatingly christened, I believe the requests of the excommunicated petition, now on foot in the army will scarce receive a slower satisfaction;[c] for the particulars, in which he requires it, do not only ask a profound knowledge and solid judgment (qualities of themselves not very epidemical) but likewise a leisured and a great multiplicity of reading, and so an intimacy as well with authors as with things; qualities, that in this stirring and necessitous age (where men are forced to court don *Plutus* and my lady *Fortune* with more assiduity than the Muses) make very unfrequent matches in the self-same person:[d] besides that the dissenting opinions of the *Ptolemeans,* the *Tychonians*, the *Copernicans*, (to which I was once very much inclined,) and the other novelists, are both so irreconcilable among themselves, and leave a man so little latitude of neutrality, that it will be perhaps but one remove from impossible, precisely to declare, what has been hitherto both perfectly demonstrated and confessedly on all sides; the one taking that (as I have known by experience, when I studied that problem of the earth's peregrination) for an undeniable demonstration, which the other will either absolutely reject as a paralogism, or at least call in question, as no more than a bare probability.[e]

Your *Common Writing* (for which you have my humble thanks) is at last come safe to my hands;[f] but my occasions have not yet allowed the leisure to fix my thoughts upon it: only if the dictionary (whose edition, had my wishes the power to swiften it, should be very sudden)[g] do not over-swell and disease it of a tympany, methinks the bulk of the grammar is very reasonable in reference to what the title promises, which I was well pleased to see so, apprehending (nor are my fears yet entirely suppressed) lest that this way of saving the labour of learning a language should prove like a new device, I have lately seen, to perform all the operations of arithmetic by

[a] Hall's *Utopia* seems not to have been finished; see Turnbull, *H. D. & C.*, p. 224.

[b] Boyle refers to John Hall's *Emblems with Elegant Figures* (1648). Hall wanted to dedicate this work to Boyle, who, as this letter shows, was cautious of giving his approval. The 'opinions' Boyle alludes to are possibly those contained in his tract *Aretology.* See Harwood, *Essays and Ethics*, pp. 3–134.

[c] Hall's tutor was John Pawson (c. 1620–c. 1654), Fellow of St John's College, Cambridge. Boyle also alludes to the soldiers' petition of Mar. 1647 and Parliament's reaction to it.

[d] Plutus was the ancient god of riches, whose fickleness (like that of Fortuna) was notorious.

[e] Boyle comments on the main astronomical systems, citing the astronomers Ptolemy (c. AD 100–70), Tycho Brahe (1546–1601) and Nicholas Copernicus (1473–1543).

[f] For *A Common Writing* see above, p. 52n.

[g] Presumably an allusion to Hartlib's *The true and readie way to learne the Latin tongue*, which appeared in 1654.

the help of an instrument, where I found it much more difficult to learn the uses of the instrument, than the rules of the art.

THAT in my last I took no notice of Mr *Dury*'s excellent discourse of teaching logic, was not at all my neglect, but the treacherousness of my memory;[a] for which meaning to apologise to the author himself, I shall for this time add no more to your trouble, but an humble request to assure him, that I am his, and yourself, that I am

Your most really affectionate friend and humble servant,
ROBERT BOYLE.

BOYLE to UNKNOWN CORRESPONDENT 20 April 1647

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[April] 20'.

BOYLE to UNKNOWN CORRESPONDENT 22 April 1647

Miles's list of letters of 1645–7, (BP 36, fol. 129) records the following: '[April] 22'.

BOYLE to WORSLEY 24 April 1647

Miles's list of letters 1645–7 (BP 36, fol. 129) records the following: [April] '24 to Mr Worsley'. In left-hand margin beside this and the previous entry: 'Q. *concerning* Col. Stroude'.[b]

[a] Boyle refers to John Dury (1596–1680), Protestant divine. Turnbull, *H. D. & C.*, pp. 300–1, mentions three manuscripts by Dury dealing with logic, and there are other writings on this subject. Turnbull suggests that the work in question is 'Of Teaching Logic', published by Hartlib as an addendum to Dury's *The Reformed School* (Turnbull, 'John Hall's Letters' (above, p. 54), p. 225, n. 6).

[b] For Strode, see above, p. 52n.

JOHN HALL to BOYLE 26 April 1647

This is referred to in a letter Hall wrote to Hartlib on the same day. The letter to Boyle was probably enclosed with Hartlib's; see Turnbull, 'John Hall's Letters' (above, p. 54), p. 225.

BOYLE to UNKNOWN CORRESPONDENT 30 April 1647

Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[April] ult'.

BOYLE to JOHN DURY 3 May 1647[a]

From the printed version in Birch (ed.), *Works* (1744), i, 23. Also printed in Birch (ed.), *Works* (1772), i, xxxix–xl.[b]

IT has been long, as well my wonder, as my grief, to see such comparatively petty differences in judgment make such wide breaches and vast divisions in affection. It is strange, that men should rather be quarrelling for a few trifling opinions, wherein they dissent, than to embrace one another for those many fundamental truths, wherein they agree. For my own part, in some two or three and forty months, that I spent in the very town of *Geneva*,[c] as I never found that people discontented with their own church-government, (the gallingness of whose yoke is the grand scare-crow, that frights us here;) so could I never observe in it any such transcendent excellency, as could oblige me either to bolt heaven against, or open *Newgate* for all those, that believe they may be saved under another. Wherefore I must confess, it would be extremely my satisfaction, if I could see, by God's blessing, your pious endeavours of twisting our froward parties into a moderate and satisfactory reconcilement, as successful, as I am confident they will be prudent and unwearied. As for our upstart sectaries (mushrooms of the last night's springing up) the worst part of them, if not exasperated by, instead of lighting them into

[a] This letter appears in Miles's list of letters of 1645–7 (BP 36, fol. 129), where Miles records 'May 3 says he had seen 2 or 3 & 40 months at Geneva'.

[b] This letter was quoted by Birch to show Boyle's moderation in matters concerning religious differences. This letter is undoubtedly incomplete.

[c] Boyle was in Geneva as part of his European tour from 28 Nov. 1639 to the middle of Sept. 1641, and from Aug. 1642 to the summer of 1644. See above, Boyle to 1st Earl of Cork, 16 Nov. 1640.

the right way with the candle, flinging the candlestick at their heads, like *Jonah*'s gourd, smitten at the root with the worm of their irrationality, will be as sudden in their decay, as they were hasty in their growth;[a] and indeed perhaps the safest way to destroy them is rather to let them die, than attempt to kill them.

BOYLE to HARTLIB 8 May 1647[b]

From the printed version in Birch (ed.), *Works* (1744), i, 24–5. Also printed in Birch (ed.), *Works* (1772), i, xl–xlii.

Dear Mr. *Hartlib*,

IT was very needless in your last to make apologies for the glad parliamentary news you began your letter with;[c] for besides that its goodness authorises its nature, and were able to prefer so pleasing a disobedience to the most exact compliance with my desires; besides this, I say, you interest yourself so much in the *Invisible College*, and that whole society is so highly concerned in all the accidents of your life, that you can send me no intelligence of your own affairs, that does not (at least relationally) assume the nature of *Utopian*.[d] And truly, Sir, for my particular, had you been to coin and shape news, not so much to inform, as to delight me, you could scarce have made choice of any, that were more welcome, either to my wishes for their own particular satisfaction, or for those, that I dedicate to the good of the public, which can acknowledge your merits with no advantage, that has not a direct tendency to its own, and which, by the highest expressions of gratitude for your service to it, does but enable your zeal to multiply and continue them. The phrases of the ordinances (which these alone of yours have brought me into charity with again) were indeed extremely civil in respect of those, that framed them; and yet but barely just in regard of him, for whom they were designed.[e] Certainly the taking notice of, and countenancing men of rare industry and publick spirit, is a piece of policy as vastly advantageous to all states, as it is ruinously neglected by the most. And therefore we may evidently observe those commonwealths (as the *Hollanders* and the *Venetian*) to be the most happy and the most

[a] A reference to Jonah 4, 6–10.

[b] This letter appears in Miles's list of letters of 1645–7 (BP 36, fol. 129), recorded as 'May 8'.

[c] Hartlib's letter to Boyle is not extant. A reference to the vote by Parliament (31 Mar. 1647) of £300 to Hartlib 'in consideration of his good deserts and great services to the Parliament'. The Committee for the University of Oxford was ordered to consider him 'to some Place of Benefit in the University of Oxon'. See Webster, *Great Instauration*, pp. 73–4.

[d] On the Invisible College see above, p. 42n.

[e] For the 'ordinances', or orders of the House of Commons, see above, p. 35n.

flourishing, where ingenuity is courted with the greatest encouragements. Mr *Hall*'s unmerited elogium of me I must in justice ascribe rather to his civility, than to his opinion; to the former of which I am also redevable for a very handsom complimental letter, he was lately pleased to honour me with, to which I shall request a speedy conveyance of the inclosed (though unsuitable) answer,[a] and a belief, that I list it not amongst the least of your favours, to procure me the acquaintance of a person, that treading antipodes to the strain of his contemporaries, has September in his judgement, whilst we can scarce find April upon his chin.[b]

MY sense of his propositions concerning the College I must necessarily suspend, till a more exquisite information of the particulars of his whole design.[c] Only by the by I shall take the freedom to tell you, that though I esteem Mr. *Hall* very moderate in the point of pecuniary duties, you can scarce be too tender in tasking young collegiates as to the duties of the brain, since they being all of them to be persons of quality and voluntiers, will hardly support with alacrity any thing, that savours of constraint; besides that the gallantry and nobleness of their own principles will carry them on unimposedly to do much more, than your strictest constitutions can reasonably enjoin them. The expedients you propose to Mr. *Hall*'s tutor are not at all likely to take;[d] and the applications you counsel him to make to those three famous mathematicians, can promise a great deal of probability for their success: especially *Gassendus*, a great favourite of mine, I take to be a very profound mathematican, as well as an excellent astronomer, and one, that has collected a very ample treasury of numerous and accurate observations of all, that belongs to the abstruse science of those sublimer bodies.[e] I find you very happy, or rather very judicious, in the nominating of the persons, Mr. *Hall*'s Tutor is by you addressed to; and am confident, as well as you, that those elevated spirits will not prove half so costive and so pedantical, as the great scholarians of our colleges, whom yet I am apt enough to pardon, in consideration of the usefulness (for the most part) of the knowledge they conceal, which perhaps being admired but as long as kept in a mystery, an imparting discovery would depreciate.

THE rise you have now to resume your former correspondencies with the great *Mersennus*, I hope you will greedily embrace, he being a man truly incomparable in his own way, and the mechanics he transcends in as greatly beneficial as little

[a] This letter does not survive; see above, p. 57.

[b] For Boyle's reluctance to appear as the dedicatee of a work by John Hall see above, p. 55n. The months of the calendar were a popular device for alluding to maturity and immaturity.

[c] This is not the Invisible College, but a proposal of John Hall, concerning which see Turnbull, 'John Hall's Letters' (above, p. 54n.), p. 230.

[d] Hall's tutor was John Pawson, for whom see above, p. 55n. Pawson seems to have asked Hartlib's advice on some mathematical problem, and the latter seems to have referred it to Boyle. See Turnbull, 'John Hall's Letters', pp. 225–6.

[e] A reference to Pierre Gassendi (1592–1655), astronomer and philosopher.

understood.[a] The Englishing of, and additions to *Oughtred*'s *Clavis Mathematica* does much content me, I having formerly spent much study on the original of that algebra, which I have long since esteemed a much more instructive way of logic, than that of *Aristotle*.[b] No body has yet been charitable enough to send me either the long desired *Office of Address*, or Mr. *Dury*'s wished for discourse concerning Accommodation, though my longings for their sight have been very suitable to the contentments I expect from their perusal.[c] I have written a long letter to Mr. *Dury*, by the same post, that is to deliver you this;[d] and it shall not be the neglect of my improving my rhetoric to the uttermost, that shall impede my prevailing with him, by exemplifying his rules, to clothe with flesh and skin his excellent sceleton of the Art of Reasoning.[e]

FOR your bedfellow's receipt for the stone (which certainly wants a parallel, if it be not more easy than effectual) I beseech to return her (together with the present of my humble service) most humble thanks, which I mean very shortly, God willing, to pay you in an epistle I have drawn up to persuade men to communicate all those successful receipts, that relate either to the preservation or recovery of our health;[f] to which (if you will pardon me a clinch) I shall add, as to the disease last named (so cruel in its tortures, and so fatal in its catastrophe) that they must have their hearts more hard than a very stone, that can refuse a sanative remedy for the stone. /p. 25/

AS for me, during my confinement to this melancholy solitude, I often divert myself at leisure moments in trying such experiments, as the unfurnishedness of the place, and the present distractedness of my mind, will permit me;[g] which when once my vacant intervals of time will give me leave to blot paper with, and make

[a] For Marin Mersenne see above, p. 53n. Mersenne corresponded with Theodore Haak and other members of the Hartlib circle in the 1640s. See Pamela R. Barnett, *Theodore Haak, F.R.S. (1605–1690)* (The Hague, 1962), pp. 34–5.

[b] William Oughtred (c. 1574–1660), Fellow of King's College, Cambridge, mathematician. His *Arithmeticae in numeris et speciebus institutio: quae quasi clavis mathematicae est* (1631), was one of the best and most influential mathematics textbooks of the first half of the 17th century. See Webster, *Great Instauration*, pp. 119, 415–16.

[c] The first work mentioned here is doubtless Hartlib's 'Office of Address'. Boyle also refers to John Dury's unpublished 'A brief discourse concerning the accomplishment of our Reformation, shewing that by an Office of Addresse in spirituall and temporall matters the glory of God and the happines of this nation may bee highly advanced', possibly written in 1646. See Turnbull, *H. D. & C.*, p. 311.

[d] This letter is not extant.

[e] The 'Art of Reasoning' is undoubtedly the same as the 'excellent discourse of teaching logic' mentioned above, p. 56n.

[f] Boyle refers to Hartlib's wife Mary Burningham, whom Hartlib had married in 1629. Boyle's epistle was published as *Free Invitation* (1655). See *Works*, vol. 1, pp. 1–12.

[g] At this point Boyle was at Stalbridge.

some short discourses and reflections upon, you may (with all the services you shall be pleased to command their author) confidently expect from,

Sir, your most affectionate friend and humble servant,
ROBERT BOYLE.

BOYLE to UNKNOWN CORRESPONDENT 15 May 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[May] 15'.

BOYLE to UNKNOWN CORRESPONDENT 17 May 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'May 17'.

BOYLE to UNKNOWN CORRESPONDENT 18 and 19 May 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[May] 18, 19 1647'.

BOYLE to UNKNOWN CORRESPONDENT 1 June 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'London June 1 1647'.

BOYLE to UNKNOWN CORRESPONDENT 8 June 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[June] 8'.

BOYLE to UNKNOWN CORRESPONDENT 22 June 1647
Miles's list of letters of 1645–7 (BP 36, fol.129) records the following: '[June] 22'.

BOYLE to HIS BROTHER 6 July 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: 'July 6 1647 about this time had a fit of the Stone see a drolling[1] L[ette]r to his Brother – without any Superscription'.

BOYLE to UNKNOWN CORRESPONDENT 14 July 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[July] 14'.

HARTLIB to BOYLE 15 July 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '15 NB Mr Hartlib wrote to him at Stalbr May 9 1648'.

BOYLE to UNKNOWN CORRESPONDENTt 24 July 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following: '[July] 24'.

BOYLE to UNKNOWN CORRESPONDENT 25 July 1647
Miles's list of letters of 1645–7 (BP 36, fol. 129) records the following:' [July] 25'.

HARTLIB to BOYLE 16 November 1647

From the printed version in Birch (ed.), *Works* (1744), v, 256. Also printed in Birch (ed.), *Works* (1772), vi, 76–7.

Most honoured SIR,

I WENT yesterday to wait upon my excellent lady, who was pleased to shew me a certain letter making mention of me, which I had no sooner perused, but the expressions of your very great love were delivered into my hands.[a] Sir, this gave such an alarm (for we are nothing almost but alarms) to my affections, that I must needs convey the sound of it to your ears by those paper-wings, which carry also along with them a further discovery of the office of publick address for accommodations.[b] The office of communications is to follow very shortly, God willing, especially in reference to universal learning.[c] And if then the trustees of the kingdom shall vouchsafe to look after such small and trivial by-matters, I shall assuredly be mindful of your kindnesses, and be perhaps as well in an offering, as in a receiving condition. If they do not, I fear, that my lord *Cottington*, who, as I am certainly informed, was, with a French doctor in *London*, before those troubles began, fully resolved to have erected such an office, [will] rise once in judgment against them.[d] However, I am more than resolved to continue in this kind of folly to serve the good of many; and worthy Sir *Cheny* professes himself to be one, that will join with me in running this race.[e] For in his last he used these very words unto me. – 'I offer, if others of our acquaintance will come in, and according as my condition in these tottering times shall prove, to allow towards the maintaining of one clerk, the sum of 20l. *per ann.* and shall (as God shall bless me) be ready to encrease it, till we can invite the publick to take notice of its own interest in the business.'[f] Thus far Sir *Cheny*, which I mention the rather, that it may be some incentive to others by your means in your quarters, if any burn with such inflammations. And that you may have the more fuel to put into the fire, I cannot but tender to your favourable hands the other writings here adjoined, especially the design of the *His-*

[a] This is undoubtedly a reference to Boyle's sister, Lady Ranelagh. The letter referred to has not been found.

[b] A reference to Hartlib's *A Further Discoverie of the Office of Publick Addresse for Accommodations* (1648).

[c] Two copies of this document dealing with the 'Office of Address' survive. One is among the Hartlib Papers, printed in Webster, *Great Instauration*, appendix viii, pp. 551–3. The other is among the Worthington papers, British Library, Add. MS 6269, fols 23–5.

[d] Hartlib refers to Francis Cottington (c. 1578–1652), 1st Baron Cottington, courtier and statesman. The square brackets appear in Birch's text.

[e] Hartlib refers to Sir Cheney Culpeper (1601–63), friend and correspondent of Hartlib's. See Stephen Clucas, 'The Correspondence of a XVII-Century "Chymical Gentleman": Sir Cheney Culpeper and the Chemical Interests of the Hartlib Circle', *Ambix,* 40 (1993), 147–70.

[f] This letter is not extant.

tory of Trades. The author of them is one *Petty*, of twenty four years of age, not altogether a very dear *Worsley*, but a perfect Frenchman, and good linguist in other vulgar languages besides Latin and Greek, a most rare and exact anatomist, and excelling in all mathematical and mechanical learning; of a sweet natural disposition and moral comportment. As for solid judgment and industry altogether masculine.[a] This is the meat or banquet, to which I desire to invite mainly all ingenious spirits and discerning palates at this time. I know not how the sauce of it, (which must be at least a hundred and twenty pound *per ann*.) will be relished; but when he hath perfected the specimen, which I have required of him, in one trade, (which also is near done) and set down all the terms and conditions, upon which he desires that annual assistance, I suppose no right taste will nauseate it; nay, I am confident to your sense it will be delicacy, and the best venison, that ever I could have hunted out for you in this populous wilderness. Sir, may I be so happy as to see again some lines from your hands, to continue or rather begin a correspondence, as to the cosmetical (but to my aims truly vital) parts of it; and I shall study to approve myself in all those, and all other profitable and real respects and observances,

Most honoured Sir,
your entirely affectionate,
and most willing, and obliged
friend to serve you,
S. HARTLIB.

Lond. Duke's-place,
Nov. 16, 1647.

SIR,

I BEG the sending of Mr. *Dury*'s Exercitation how to travel profitably in the law.[b] You shall have back this money with interest, if you dare give me credit for so much.

Farewel, dear Sir.

[a] This is a reference to William Petty (1623–87), political economist and inventor. Plans for his 'History of Trades' survive in *The Petty Papers*, ed. the Marquis of Lansdowne, 2 vols, (London, 1927), i, 205–7. Hartlib's comparison of Petty with Worsley foreshadows the later rivalry between the two men; see below, p. 240n.

[b] Perhaps item no. 39 in the list of Dury's writings given by Turnbull, *H. D & C.*, p. 303.

— 1648 —

Lost letters dating from 1648 referred to in surviving letters are as follows:
Lady Ranelagh to Boyle, prior to 13 May 1648 (below, p. 67).
Lady Elizabeth Hussey to Boyle, before 6 June 1648 (below, p. 69).

For other lost letters that have been placed by date, see below and p. 75.

BOYLE to MARCOMBES — 22 February 1648

Birch in his 'Life' of Boyle (*Works*, i, p. 26n.), refers to 'Mr. *Boyle*'s letter to Mr *Marcombes*, dated from *London*, February 22, 1647–8, in which he mentions his intentions of setting out for *Holland* the next day'. This letter no longer survives.

BOYLE to UNKNOWN CORRESPONDENT — 15 April 1648

Birch in his 'Life' of Boyle (*Works*, i, p. 26), notes that 'on 15th of April 1648, he was at *London*'. This is probably because a letter of this date survived at that point, though it is no longer extant; see above, p. xxx.

HARTLIB to BOYLE — 9 May 1648

From the printed version in Birch (ed.), *Works* (1744), v, 256–7. Also printed in Birch (ed.), *Works* (1772), vi, 77–8.

Right worthy Sir and truly honoured,

THE enclosed from Mr. *Worsley* I received on Saturday last.[1] The extracts he wrote confidingly to myself, but I thought it my duty not to conceal them from your eyes in the very formalia of his words. If I were not very confident, that you would

[1] This enclosure is not extant.

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take all in good part, I would never have made over those adventures of my freedom unto you; but owing so much to the nobleness of your disposition, /p. 257/ your special services, and to the most faithful friendships both of Mr. *Morian* and Mr. *Worsley*, I could truly do no less.[2] Sir, I could enlarge myself upon many other particulars full of variety, and of a spring of pleasure; but I suppose Mr. *Worsley* hath presented to your curiosity a large field to walk in at this time: yet give me leave to present you with a posy of additional lines in the following words. I thank you for your new discoveries in anatomy, and enquiries of other useful and ingenious knowledges.[3] I shewed Mr. *Hobbes* your letter, who liked it so well, that he desired me to lend it him, which I did.[4] Your worthy friend and mine Mr. *Gassend* is reasonable well, and hath printed a book of the life and manners of *Epicurus* since your going from hence. He hath now in the press at *Lyons* the philosophy of *Epicurus*, in which I believe we shall have much of his own philosophy, which doubtless will be an excellent work.[5] There is an experiment how to shew, as they suppose, that there is or may be vacuum.[6] It were too long to write all the particulars, but in brief thus. They prepare a long tube like a weather-glass, which is filled with quicksilver; and being stopped as close as may be with one's finger, the tube is inverted and plunged in a vessel half, or more, full of quicksilver. The quicksilver in the tube will force the quicksilver in the vessel to rise, by adding more quicksilver to it, and so leaves a space in the top of the tube vacuum, as is supposed. But a bladder being hung in that vacuum was as perfectly seen as could be, so that there must be somebody there to convey the action of sight to the eye, as I suppose and divers others here. That bladder was made as flat as they could, when they put it in; and when the quicksilver left it, it swelled in that supposed vacuum like a little foot-ball. Thus far Sir *Charles Cavendish* to Mr. *Petty*, who honours and loves you, but not in those dimensions, as he, who subscribes himself always,

Right worthy Sir and truly honoured,
your most entirely
respective and
faithfully devoted,
SAM. HARTLIB.

Lond. Duke's-place,
in the great open
Court, May 9,
1648.

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[2] This is a reference to Johannes Moriaen (c.1591–c.1668), German natural philosopher. For Moriaen see J. T. Young, *Faith, Medical Alchemy and Natural Philosophy. Johann Moriaen, Reformed Intelligencer, and the Hartlib Circle* (Aldershot, 1998). Moriaen is the author of a large collection of letters in the Hartlib Papers.

[3] This extract, beginning at 'I thank you', is from a letter from Charles Cavendish (1591– 1654), mathematician, to William Petty from Paris. See R. G. Frank, *Harvey and the Oxford Physiologists* (Berkeley and Los Angeles, 1980), p. 92. For Petty's anatomical studies see above, p. 64.

[4] The Cavendishes patronised the philosopher Thomas Hobbes (1588–1679).

[5] Hartlib's reference is to Pierre Gassendi, for whom see above, p. 59n. Gassendi's *De vita et moribus Epicuri libri octo* (1647) and *Philosophiae Epicuri syntagma*, published as an appendix to *Animadversiones in decimum librum Diogenis Laërtii*, 3 parts (Lyons, 1649).

[6] The description of this experiment is in ibid., appendix 1, pp. iii–x.

BOYLE to LADY RANELAGH 13 May 1648

From the scribal copy in BL 1, fols 124–5. Fol/2.
Previously printed in Birch (ed.), *Works* (1744), v, 235 and Birch (ed.), *Works* (1772), vi, 45.

My Dearest Sister

I received your letter with a huge deale of satisfaction, not only as an Effect of your kindnes, but an Evidence of your Recoverie.[7] which latter propertie more endear'd your ‹neat›[1] lines to mee then the former did; since the one relates to you; the other reflects only on my selfe; who must ever as much preferre the blessinge of your Happines, before the Happines of your Affection, as I value this latter above all other goods. I perceive by your Intelligence, that wee owe our Condiscentions to our Brethren, rather to our feare then hatred of a warre;[8] & am very sorry to finde by the story, that the faculties of our minds stand in soe inverted a Relation, that 'tis our Passions that brings us to Reason, rather then wee them. 'Tis not alone upon the score of it's beinge soe lately hapned, that I esteeme that ‹to be› newes, you are pleased to informe mee, concerninge the Lords Rejected Motion to the Commons, to have the Lieutenancy of the Tower confirm'd to the Generall, & the trust of the Kingdomes Militia confer'd upon him: for I imagine that desire of the Lords, to bee a peece of Greate (to which Epithete you will perhapps thinke itt needles to add that of unusuall) discretion; for if (by Miracle) the motion past, they had gott the thankes of itt; & theire dessein beinge to have itt throwne out, they could not devise a likelyer[2] way in order to ‹that› end, then to make itt theire Motion: soe that deriveinge a dubble advantage from a single act; they gain'd Sir Tho[mas] Fairefaxe's Affection, by ruining his busines.[9] The ordinance you mention against Heresies and Blasphemies, appeares to mee a greater argument of your fright att London, then the buildinge of that new officious house soe ominously & foreseeingly erected by the members att Westminster.[10] Butt concerninge this pointe of Tolleration I may possibly ere longe

[7] This letter is a reply to the lost letter from Lady Ranelagh to Boyle, prior to 13 May.

[8] 'Brethren' here means the Scots, whose parliament on 4 May 1648 voted to raise an army to support the King. This prompted the English parliament on 6 May to promise not to alter the fundamental government of the kingdom, to uphold their previous agreements with the Scots and to join with the Scots in jointly re-offering the King the terms which had previously been put to him at Hampton Court in Sept. 1647. These were presumably the 'Condiscentions' to which Boyle refers. See Stevenson, *Revolution and Counter-Revolution* (above, p. 37), pp. 105, 109.

[9] On 9 May 1648 the House of Commons invited the City to nominate a new commander of the Tower although the Lords had proposed confirming Sir Thomas Fairfax (1612–71), supreme commander of Parliament's armies, in the office indefinitely. He had been appointed Constable of the Tower for one year from 6 Aug. 1647. See *Lords Journal*, ix, 379.

[10] For this ordinance, see above, p. 58n. The 'new officious house' is presumably a reference to the Presbyterian church system approved by Parliament.

give you the trouble of perusinge my thoughts in an Essay, entitled, of Divinitie.[11] It seemes by what you relate of the underhand Treaty att Chelsy, that Jugline is still as much in fassion with you amongst the men, as paintinge is amongst the women: & I am confident that if the statute against Juglers, & Hocus pocus blades, were extended to state-affaires, & strictly putt in execution, att this instante; some (namelesse) places of very great resorte, wud bee as perfect Hermitages, as that your servant lives in.[12] What all these confusions will resolve into att last, God only that disposes of Events, (I thinke) do's know: & from[3] our knowledge that hee disposes of them, wee ought to[4] derive our consolation.[5] /fol. 124v/

Now for my owne particular, I have been in perpetuall motion ever since I last saw you; partly to comply with the necessitie of my little Domesticke affaires, which exacte my beinge active; & partly, by lawfull recreations, to divert as much as may bee, that drowsie Melancholy, which (besides other crosses) the ficklenes of my health does dayly endeavour to encrease. But beleeve not my Melancholy shall drive mee to any diversion,[6] that may make mee deserve itt: & for the Knights companie you soe feircely disadvise, I must assure you that for this somer I am very unlike to have itt;[13] & att all times thinke my selfe very much above the beinge perverted by itt. But my present irresolution[7] what course to take, makes mee spare the now giveinge you any further trouble; then that of desiringe you if you can, to gett the disposinge of those chambers att St. Jameses respited, till you here from mee next post:[14] by which I hope to give you a full accompte of his intentions, who by this day fortenighte expects (God willinge) the happines of assuring you by word of mouth how really hee is

My Sister
Your most faithfull & humble
Servante

Stalbridge 13th May
1648

Endorsed on fol. 125v by Miles 'Stalbridge 13 May 1648 / To his sister *Lady R*' and with Miles's crayon number 'no.3'.

[11] This essay *Of Divinity* is not mentioned in Boyle's list of works dated 1 Jan. 1649/50. It may never have been written. See *Works*, vol. 14, p. 329.

[12] Boyle may be referring to some of the behind-the-scenes contacts between prominent parliamentarians and the royalists in late Mar. and Apr. intended to restart negotiations for a political settlement and avert war with the Scots; see D. Underdown, *Pride's Purge: Politics in the Puritan Revolution* (Oxford, 1971), pp. 95–7. Boyle's views on women and painting were contained in one of his moral epistles; see *Works,* vol. 13, p. 49ff. Boyle's word 'juglers' presents the politics of the day in terms of the fraudulent activities of magicians and tricksters. He may possibly allude to 'An Ordinance for utter suppression and abolishing of Stage-Plays and Interludes', 11 Feb. 1648 (Firth and Raitt, *Acts and Ordinances,* i, 1070–2). The 'Hermitage' referred to is Boyle's estate at Stalbridge.

[13] Conceivably a reference to Sir John Clotworthy (d. 1665), Lady Ranelagh's brother-in-law; see *Works*, vol. 13, pp. xxxii–xxxiii.

[14] This is probably a reference to the laboratory at St James's Palace. See Maddison, *Life*, pp. 78–9.

BOYLE to LADY ELIZABETH HUSSEY[15] 6 June 1648

From the copy in John Jay's hand in BL 6, fols 1–2. Fol/2.
Previously printed in Birch (ed.), *Works* (1744), v, 236–7. Also printed in Birch (ed.), *Works* (1772), vi, 46–7.

Madam

When I[1] found a Transcripte of my letter enclozed in your Ladyships: the Disparitie[2] both of theire stiles & contents obliged mee to resemble the whole Pacquett to most of our young Gallants, & theire clothes; where the coveringe is soe much better then that which itt enfolds.[16] For seriously Madam I was extreamely ashamed to finde that I had putt your Ladyship to the trouble of a coppie, of my last dull scrible; since I desired the retourne of the Originall not more to satisfie (or rather disabuse) the younge gents Curiositie;[17] then to abolishe soe tedious an Instance of my bad secretaryship; The Intelligence here is both lesse, & worse, then possibly your Ladyship's Expectation presumes, the *Kentishe*[3] busines has hurt us noe otherwise, then by makinge us feare, that itt might doe soe: *Victorie* is as obediente, as the very Parliament to the Armie: my last weekes *Astrologie* has not att all deceived mee; & though since that time divers successes of the *Kentishe* men have extreamely frown'd upon my predictions; yet the Event has very much conformed, to my conjectures; the *Kentish* being almost wholly reduc'd to the Discretion of the Parliament: who itt is thought will in this nice particular, much consult the lawes of Politie then those of Charitie.[18]

The *Essex* men had yesternight granted them an Act of Indemnitie; which is like to attempt *Bow* bridge with much better successe then they say our forces have had there.[19] The *Surrey* men seeme by the fate of theire Companions, deterr'd from enterprisinge any noveltie & after all theire threatonings and complaints: seem content with puttinge this complement upon theire patience to lett the world know, that they Ignore nott the Extent, and the Dimensions of the wrongs that they forgive. My Lord of *Warwicke* was pleased to give mee a very full accompte with his owne mouthe, of his whole negotiation with the *fleet*: but the printed paper will bee soe sure to relate at

[15] Elizabeth Hussey (1591–1658), daughter of George Anton, married Edward Hussey (1585–1648), 1st Baronet, not later than 1610.

[16] This letter is not extant.

[17] This figure has not been identified.

[18] Boyle refers to the royalist rising in Kent which began on 21 May 1648 and was defeated by the New Model Army at Maidstone on 1 June. See I. Gentles, *The New Model Army in England, Ireland and Scotland, 1645–1653* (Oxford, 1992), pp. 247–8.

[19] Boyle refers to the rising in Essex where the militiamen mustered at Bow. Kentish royalists fleeing from Fairfax crossed the Thames and came to Bow where the Essex militiamen fired on their pursuers. In response Parliament offered an indemnity to all Essex men who were willing to disband and go home. See B. Lyndon, 'Essex and the King's Cause in 1648', *Historical Journal*, 29 (1986), 17–39, on pp. 25–6.

least as much as is true of that Transaction, that I shall purposly decline itt.[20] hee is now gone to *Portsmouth*, with the shipping hee finds there, to endeavour the reducing of those 6 shipps that show themselves refractory; of which hee assured mee secretly att his departure that the Officers of fower were att his devotion. I sup't last night att *Warwicke* house, with my Ladies daughters only; & finde by the story that *Charles Rich* is the Grand Agitator in this *Essex* busines.[21] One of our Masters tould mee this afternoone att *Westminster*, that they had voted the propositions to bee treated one with the Kinge, the same that were presented to him att *Hamton courte*;[22] to bee sent away immediately to the *Scotts* for theire concurrence with a desire, that they send such further particular addresses to his Majestie, as they have resolved on in Order to theire owne Nations peculiar Interests. Our brethren are not like to visitt us soe soone as wee /fol. 1v/ expected: but our divertion in these parts of the Kingdome have as tis boasted given the Royalists the libertie of a quiet, and almost undisturbed encrease in the North. The disobeidient shipps have chosen for their *Admirall* one *Major Kemb*, a Minister, & a mad wittie fellow, whom I have sometimes beene very merry with; his wife being sister that honest red nosed blade that waits now upon mee.[23] But a person of Qualitie,[4] and one that pretends to be noe petty *Cabalist* gave mee the honour of a visitt this morneinge, & assured mee that hee knew from both parties, the[5] probabilitie of a speedie peace to bee soe greate, that itt is expected even by those persons by whom itt is not wished for.[24] But *Madam* since I began to write this letter, I had unexpectedly the happines of a longe conversation with the faire Lady that people are pleased to thinke my *Mistress*:[25] & truly *Madam* tho I am as farre from being in Love,

[20] Boyle refers to the mutiny in Parliament's fleet on the Downs which began on 27 May 1648. Two days later Robert Rich (1587–1658), 2nd Earl of Warwick, was re-appointed Lord Admiral, a post he had previously held from 1643 to 1645; Rich unsuccessfully tried to persuade the sailors to return to Parliament's service. See B. Capp, *Cromwell's Navy: The Fleet and the English Revolution, 1648–1660* (Oxford, 1989), pp. 21–2. For the printed account of Warwick's negotiations see 'A Representation of the Proceedings of the Earl of Warwick', in *The Parliamentary or Constitutional History of England from the Earliest Times, to the Restoration of King Charles II* (2nd edn, 24 vols, London, 1763), xvii, 199–208.

[21] Presumably these are the daughters of Eleanor, Countess of Warwick, by her first husband Sir Henry Lee. There was also one surviving daughter from the Earl's first marriage. For Charles Rich, who married Boyle's sister Mary in 1641, see above, p. 31n. Charles Rich supported Parliament during the Civil War and was elected MP for Sandwich in 1645. He was a member of the committee of the House of Commons appointed to draft the indemnity offered to the Essex rebels. See *Commons Journal*, v, 585.

[22] The Hampton Court Propositions were proposals drawn up by Parliament for a constitutional settlement with the King, originally presented to Charles I in Sept. 1647.

[23] 'Major Kemb' is probably Samuel Kem (1604–70), Puritan divine and active for Parliament in the Civil War. He was said to have been 'chaplain at sea' to the Lord Admiral, the Earl of Warwick. Kem was married four times. His first wife was an only daughter so this must be a reference either to Jemima, eldest daughter of Herbert Pelham of Lincolnshire; to Mary, 2nd daughter of Samuel Bridger of Dursley in Gloucestershire; or to Kem's eventual widow, Elizabeth.

[24] Conceivably a reference to Broghill.

[25] The lady Boyle refers to is possibly Elizabeth Carey (1631–76), daughter of the 2nd Earl of Monmouth. See Maddison, *Life*, p. 73.

as most that are soe are from beinge wise, yett my hast makes mee gladly imbrace the old excuse of

Then to speake sence
were an offence

to extenuate my haveing hitherto written soe dully & my now concludinge so abruptly: for whilst this amorous rapture does possesse, I neither could write sence without being injurious to my passion, nor can any longer continue to write nonsence, without some violation of that profound respect which is both due to you from & vow'd you by

Madam

London 6 June 1648 Your Ladyship[s] most faithfull & most humble servant

Endorsed on fol. 1v by John Jay 'A Coppie of a letter sent to Mrs Elizabeth Hussy'. Endorsed on fol. 2v by Miles: '6 June 1648 To Mrs Hussey of public affairs' and with Miles's red crayon number '4'. The manuscript has printers' marks

WILLIAM PETTY[26] to BOYLE 21 June 1648

From the printed version in Birch (ed.), *Works* (1744), v, 296–7. Also printed in Birch (ed.), *Works* (1772), vi, 136–7.

SIR,

MEN dedicate their books to the patrons of the subjects, whereof they write, and I dedicate an useful and new invention to you, who (scorning the airy vanities, wherewith the greater part of men are as yet delighted) do not only profess yourself a Mæcenas of such things, but can descend (or rather ascend) to the practice of them yourself.[27]

IT is not to tickle your fancy with a fine, curious, or intricate conceit or notion, nor to puzzle you with the sight of a complexure of almost an infinite number of various mechaniments cunningly set together, that I have presented you this discovery; for I have always professed to the whole world, that I feared, that only the meanness of the means, whereby I performed this unheard of effect, would make it contemptible.

NEITHER is it, that I think hereby to have given you a present of great value (as to yourself) for had you paid me but 5*s*. you might (as well as others) within some few months have been partaker of the benefit; nor do I believe, that you use

[26] For Petty see above, p. 64.

[27] Petty dedicated to Boyle the invention of his double writing instrument, described in the pamphlet *The Advice of W. P. to Mr Samuel Hartlib. For the Advancement of some particular Parts of Learning* (1648). Petty was granted a patent by Parliament for his invention on 8 Mar. 1648.

copying so much, as that in those few months of concealment, it should be worth you ten shillings more; only, if in matters of privacy it may save some hours of your own time, I shall think the world obliged to the invention.

IT is not to give you the means of ingratiating yourself with other great personages by the communication of this rarity unto them, before it come to vulgar hands; for /p. 297/ you are pleased to promise upon your honour a deep and absolute silence to all enquiries after it.

NEITHER is it to engage you to be earnest in stirring up men to contribute towards my reward; for I consider, that your fortune and dignity have placed you above the condition of soliciting merchants, scriveners, lawyers clerks, and such other your inferiors, from whom I must expect my recompence.

LASTLY, I do not reveal this secret, because I know not what else to do with it, nor (like those, who give away their meat not before it stinks) employ it to buy your favour, when it will serve for nothing else: for now it is, that men begin to put off the apprehension of a cheat, and to hear generally of it, and consequently, that the impossibility of raising some considerable benefit by it begins to disappear.

BUT why then, since it is not in your way to do me much good in promoting the design of raising a reward, do I discover unto you the art itself, thereby giving you power to do me much more harm? It is only, because I hope hereby to oblige your noble and ingenuous spirit so much the faster to continue your love and assistance to inventions, and other real fruits of learning and arts. For if the world embrace the use of this invention, you may, by God's ordinary providence, live to see a thing, whereof you have the very maidenhead and patronage, to be of daily and almost hourly use to most men in most countries of the whole earth, and that to perpetuity; and consequently your own name made equally universal and known, although bright and glorious by your own better deserving actions.

AND this is the reason, why I both dedicate and intrust the invention unto you, a mere dedication unto real men (as yourself) being little better than a mere and that a begging compliment. There is yet another, why I have entrusted you with it, which is, because I, having concredited unto you all my treasure of this nature, may hope for some of your experiments to be entrusted unto me. For my study and ends being enquiries into nature, and useful arts, and finding how ill my abilities to make experiments answer my inclinations thereto, I knew no readier way to become fat in that kind of knowledge, than by being fed with the crumbs, that fall from your table: which happiness and honour if I may obtain, I shall labour to merit them, by the most serious and hearty endeavours within the power of me,

SIR,
your most humble, and
affectionate servant,
WILLIAM PETTY.

Lond. June 21, 1648.

BOYLE to MARTHA CAREY, COUNTESS OF MONMOUTH[28] 7 July 1648

From the retained copy in Boyle's early hand in BL 1, fols 118–19.
Fol/2. Spaced so that signature appears at bottom of page.
Previously printed in Birch (ed.), *Works* (1744), v, 237 and Birch (ed.), *Works* (1772), vi, 47.

Madam,

In your Ladyship's, (imparted to me by my Sister Ranalo,)[29] I find my selfe so confounded with Civilitys, that if she that blesst me with the Sight of Your Letter, had not (for her owne Discharge,) exacted of me this Acknowledgement of my having seene it; I must confesse I shud scarce have ventur'd to returne a verball answer: deterr'd by the Impossibility of Writing without Wronging a Resentment; which I can expresse, as little as I deserv'd, the Prayses & the Favors that have produc't it. To be commended by Y[our] L[adyship] & that for such a Quality as that, which You are pleas'd to thinke my Desires give me a Title to; would possibly both Create Pride in me, & (in some Sort) excuse it: if I did not consider my selfe extoll'd for an Attribute which owes more of it's Price to it's Rarenesse then it's Value; & argues much more the Degeneratenesse of those Young men that Want it; then any greate Vertue in them that do Possesse it: that Earlynesse of Piety which is made my Meritt, being so much my Duty, that 'tis the Faults of others that must make it my Commendation. As for my Pamphlet, Madam, had it expected the Glory of entertaining You, it shud certainely have appear'd in a lesse Carelesse Dresse;[30] but Madam, tho after Your Ladyship's Approbation, to doubt a Generall one, were to beleeve the latter not worth the Caring for; yet my just Sence of the Smallnesse of the Accession the Presse can be to the Honor of Your Ladyship's Perusall, makes me decline it's Publication. And as that Paper cannot have either a higher Applause or nobler End then the being Lik'd & Practis'd at Moore-parke;[31] so if it have either any way diverted Y[our] L[adyship] or had the least Influence upon my Lord; I have reach't my Desires, & gon beyond my Hopes. However, Madam, I am richly rewarded for writing such a booke, by being enjoyn'd to fetch it where You are: So welcom a Command is very unlikely to be[l] disobey'd: but, my Obedience (Madam) must be pay'd to the Order, not the Motive: the fetching of my booke may be one Effect of my /fol. 118v/ Remove, but not the Errand of it: for

[28] Martha Carey (1601–77), eldest daughter of Lionel Cranfield, 1st Earl of Middlesex. She married Henry Carey, 2nd Earl of Monmouth, in 1620.

[29] i.e., Lady Ranelagh. The Countess's letter to Boyle is not extant.

[30] From Boyle's comments it seems likely that the work in question was one of the moral or devotional treatises that he composed at this time; see *Works*, vol. 13.

[31] Moor Park, near Rickmansworth in Hertfordshire. The gardens had been laid out by the Countess of Bedford early in the 17th century. At the time of this letter, the house was occupied by the Countess of Monmouth.

sure, Madam, Your Modesty cannot be so injurious both to Your selfe & me, as to persuade You, that any inferior, (that is, other) Motive, can be look't upon by me as an Invitation to a Journey, which will blesse me with so greate a Happynesse, as that of Your Ladyship's Conversation; & give me the Opportunitys of assuring You better then my present hast & my Disorder will ‹now› permit me, in how transcendent a Degree I am,

Madam,
Your Ladyships humble & obliged
Servant
Robert Boyle.

London, this Seaventh
of July 48

[2]To the Countesse of Monmouth
at Moore-parke

Seal: paper impression of seal from another letter.
Endorsed on fol. 119v by Miles: 'a Polite Letter July 7 1648 / To the Countess of Monmouth on her Commending his Piety & one of his books' and with Miles's crayon number '5'.

BOYLE to UNKNOWN CORRESPONDENT — 9 September 1648

Birch in his 'Life' of Boyle (*Works*, i, 26), notes that 'he was returned to *Stalbridge* on the 9th of September following'. This is probably because a letter of this date survived at that point, though it is no longer extant; see above, p. xxx.

BOYLE to {LADY RANELAGH} — 13 November {1648?}[32]

From the scribal version in BL 1, fols 103–4. Fol/2.
Previously printed in Birch (ed.) *Works* (1744), v, 234–5, and Birch (ed.), *Works* (1772), vi, 43–4.

My deare Sister

If I were of those Scribler's humor, who love to put themselves to one Trouble to put their Freinds to another; & who weekely breake their Silence only to acquaint us with their unwillingnesse to keepe it; I must confesse I had much oftner written

[32] The year of this letter has been postulated on the basis of its similarity to other letters from Boyle to Lady Ranelagh in 1648–9.

You, Letters not worth the Reading. But having ever look't upon Silence & Respect as things as neere of Kinne as Importunity & Affection, I elected rather to trust Your Good Opinion to Your Good-nature, then Your Patience with my Letters: for which to suppose a Welcome must have Presum'd a greater Kindnesse then they could have Express't. For I am growne soe ‹perfect›[1] a Villager, & live soe remov'd, not onely from the Roades, but from the very By-pathes of Intelligence; that to entertaine You with our Countrey-Discourse would have extreamely puzzled mee, since Your Children have not the Ricketts nor the Measles;[33] & as for Newes, I could not have sent You so much as that of my being Well. To beseich You not to Forgett me, were ‹but a Bad›[2] Complement to your Constancy; & to tell You I remember You were a worse to my owne Judgement: & Complements of the other Nature, 'twere not easy for me to write From Stalbridge, & lesse easy to write To You. So that wanting all Theames & Straines that might enable me to fill my Letters with any thing that might pay the Patience of reading them; I thought it pardonabler to say Nothing by a respectuous Silence then by Idle Words. But the Causes being just so many[3] Excuses of that Silence, I should have more need to apologize for my Letters, if these seem'd not necessary to prevent the Misconstruction of their Unfrequency; & if I did not send[4] up the Antidote, with them; in the Company of my Brother Franke;[34] by whome it were equally incongruous & unseasonable to send You No Epistle & to send You a Long one: which (latter) that this may not prove, I must hasten to assure You, that tho I have not very lately written You any common Letters, 'tis not long since I was writing You a Dedicatorie one, which may (possibly) have the Happynesse[5] to conveigh Your Name to Posterity;[35] & having told You this, I shall next take post to beseeich You to beleive, that whensoever You shall please to Vouchsafe me the Honour of Your Commands, my glad & exact Obedience shall convince You, that tho many others may oftner renew their Bonds, I can esteeme my selfe by a single Note under my Hand, equally engag'd to You for all the Services that may become[6] the Relation & ‹justify›[7] the Professions that Stile me

My deare Sister
Your most affectionate Brother
& faythfull humble Servant
R.B.

Stalbridge this
13th of November.

Seal: Faint paper impression of seal from another letter.
Endorsed on fol. 104v by Miles 'To Lady Ranelaugh 13 Nov^r. no year refers to his Treatise which he intended to dedicate to her' and with Miles's crayon number 'I'.

[33] Lady Ranelagh had three daughters: Catherine (1633–75); Elizabeth (dates unknown); and Frances (1639–72); and a son, Richard (1641–1712).

[34] For Francis Boyle see above, p. 23n.

[35] Perhaps one of the moral epistles composed at this time, for which see *Works*, vol. 13, p. 43ff.

— 1649 —

Lost letters dating from 1649, referred to in surviving letters, are as follows:

Hartlib to Boyle, 26 June 1649 (below, p. 78).

Boyle to Lady Ranelagh, after 13 May 1648 but before 2 August 1649 (below, p. 80). The same letter also contains reference to a lost letter from Lady Ranelagh to Boyle, dating from before 2 August 1649.

For other lost letters that have been placed by date, see below, p. 83.

BOYLE to UNKNOWN CORRESPONDENT 26 March 1649[36]

From the holograph version, now in the Cushing/Whitney Medical Library, Yale University, New Haven, Connecticut, USA. Fol/1. The subscription is significantly spaced with the signature at the bottom of a largely blank page.
Not previously printed.[37]

Madam,

I shud be extreamely both troubled & asham'd to make my first addresses of this Nature not ‹upon the score of›[1] my services but my Requests; if my Barrennesse in the former were not due to my want of opportunitys to serve You, not of Desire to embrace them; & if the latter were not prostrated[2] to a Person whose Supreame Merit & Obligeingnesse ‹equally› forbids me, either to Doubt the Grant of my Petition or[3] blush ‹to› Exhibit ‹it›. For as I know that to be oblig'd by Your Charity is ‹no more›[4] a Disparagement ‹then› tis to need it; & that Your Civility affects in our Gratitudes an equall[5] Interest to that which Your ‹Prerogatives› give You in our Wonder; so I must

[36] This text has been heavily altered by Boyle after its original composition, and it is unlikely that this version was the one sent to its intended recipient, who has not been identified.

[37] This letter came from the sale of Lord Wantage's historical documents. It appeared in catalogue no. 8 of the London dealer, E. Weil, (item 42, priced £52. 10. 0) and was bought by D. I. Duveen; he gave it to the late Dr J. F. Fulton, who deposited it in its present location. (Private communications from E. Weil, 23 July 1955, and D. I. Duveen, 6 Feb. 1956, to Dr R. E. W. Maddison). The leaf on which the letter is written has a mount at its inner margin and is foliated '430' in red crayon at the right-hand top corner of the recto.

DOI: 10.4324/9781003253839-11

(as my Duty & Happinesse) acknowledge, that Your Goodnesse has so well acquainted me with the Greatnesse of it ‹selfe›, that it assures me that it makes You consider as a ‹service›[6] the Opportunity of doing ‹a Curtesy›. This Confidence, Madam, gives me that of beseeching You to ‹be pleas'd to› procure from the French Embassador[38] (who I know ‹can›[7] not refuse so just a Desire to so powerfull an Intercessor) a Passe for ‹Lindamor & a Leashe of›[8] servants to travell into France & To & Fro there, as long as they ‹neither› Doe nor Carry ‹any thing that may forfeit the Protection›[9] they shall Live under.[39] I will not so much suspect a Goodnesse I have had ‹such happy› proofes of, as to represent to Y[our] L[adyship] that You may possibly do somebody no unacceptable service, to helpe into France a Person, who ‹elswhere› might (perchance) crosse[10] (or at Least retard the Progresse ‹of Desseins›) & who is now dispos'd to this Retirement by Considerations that it is farre more easy for Y[our] L[adyship] to guesse then safe for me to write. No, Madam, I will /verso/ not render my selfe so unworthy of Your Goodnesse as to ‹mistrust›[11] it; nor strive to Lessen ‹it's› Meritt or ‹that› of Your ‹Perfections› by proposing for[12] Returne of the Favor I begge, a hart that higher motives then any that relate unto my selfe, have ‹long since›[13] præacquir'd You, & whose præpossession has already made me

Madam
Your Ladyship's most humble
& ‹obliged›[14] servant
Robert Boyle.

From Marston[40]
This 26th of March 1649[15]

HARTLIB to BOYLE 24 July 1649

From the printed version in Birch (ed.), *Works* (1744), v, 257. Also printed in Birch (ed.), *Works* (1772), vi, 78.

Right honoured Sir,

I HOPE you have received my last of the 26th of June, with many extracts of letters of great importance, which I would not have fall into other hands but your own.[41] The letter was directed as this by the favour of *Sherburn*.[42] Here are the continuation of the respects from *Amsterdam* and *Duke's-place*, which contain some particulars in them

[38] The acting French ambassador was Pierre de Bellièvre (1611–83), comte de Grignon. See P. A. Knachel, *England and the Frond* (New York, 1967), pp. 117–20.

[39] This is a reference to Boyle's brother Roger, Lord Broghill, who is here disguised as Lindamor. At this time Broghill was making plans to go overseas and join Charles II in exile. See T. Morrice, *A Collection of the State Letters of … Roger Boyle* (London, 1742), p. 9. The present letter is evidence of Robert's assistance in a scheme, which was not accomplished; see ibid., p. 10.

[40] For Marston Bigot, see above, p. 34n.

[41] This letter has not been found.

[42] Evidently a reference to Sir Edward Sherburne (1618–1702), ordnance officer and translator.

worth your trial and animadversions.[43] One *Evans* in *Fetter-Lane* used to sell antimony cups for 40 shillings apiece, if not more, which perhaps cost him no more than ten shillings.[44] I am told they can no more be had, for which I am not much troubled. For I suppose the antimony cup is no other than a pure ordinary regulus antimonii cast into the form of a cup, which cup hath no other virtues nor effects than the foresaid regulus; for this regulus lying in any liquor doth the same, which the cup-holding liquor in all respects. As for *Vaux-hall*, there is a proviso put into the act, that it shall not be sold.[45] My endeavours are now, how Mr. *Petty* may be set apart or encouraged for the advancement of experimental and mechanical knowledge in *Gresham* college at *London*, of which you shall have a true account also,[46]

Right honoured Sir,
from your entirely faithful,
Duke's-place, and most humble servant,
July 24, 1649 S. HARTLIB.

BOYLE to LADY RANELAGH 2 August 1649

From the scribal version in BL 1, fols 128–9. Fol/2.
Previously printed in Birch (ed.), *Works* (1774), v, 237–8. Also printed in Birch (ed.), *Works* (1772), vi, 48–9.

My Sister

{I have ever counted it amongst}[1] the highest Infelicitys of Freindshipp that it encreasingly reflects upon us our imparted Greefes. For if our Freinds appeare unconcern'd in them that Indifference offends us, & if they resent them, Sympathy afflicts us. This Consideration concurring with my native Disposition has made mee {Shy of Disclozing my aff}lictions where I {could not} expect their Redresse: being too proud to seeke a Releese on the beeing thought to {need} it: & to good a

[43] Hartlib appears to refer to himself and a correspondent in Amsterdam who present their respects to Boyle. Hartlib's Amsterdam correspondent is likely to be Moriaen, for whom see above, p. 66n., or Worsley, who was there with Moriaen at this time.

[44] Cups of antimony were used in the 16th and 17th centuries to prepare an emetic drink by allowing wine to stand therein.

[45] Vauxhall was one of the royal properties, used as a royal ordnance factory. During the reign of Charles I, it was the base of the activities of Edward Somerset (1601–67), 6th Earl and Marquis of Worcester, and a group of technicians. After the execution of Charles I, Vauxhall House and its grounds were excluded from the Act for sale of crown properties (4 July 1649). The Hartlib circle's plans to reserve Vauxhall for the advancement of mechanical sciences were expressed by John Dury in a 'Memorandum for setting Faux-hall apart for Publick uses'. See Webster, *Great Instauration*, pp. 347–8.

[46] For William Petty see above, p. 64n. Hartlib refers to Petty's project for the reorganisation of Gresham College, which was founded in 1597 in accordance with the will of Sir Thomas Gresham (1519–79). For Petty's plans see Webster, *Great Instauration*, pp. 548–51.

Friend to find a Satisf[action] in their Greefes I love, or to admitt of the Ill natur'd Consolation of seeing others wretched as well as I. This humor may in part informe you of [the] Cause of my silence; & I hope, in part, excuse it. But I am not now at leasure to make Apologyes, tho I'll assure you I decline the Employment for want of Time, not Justice. Since I wrote to you last I was unlikely enuf[2] ever to be in a Condition to Write to You againe;[47] & my Danger was soe suddaine & unexpected, that nothing could transcend it except theirs, whose dilatory Conversion makes them trust Eternity to the incertaine improvement of a future contingent Minute of a Life obnoxious to numerous Casualtys, as impossible (allmost) to be numbred as avoyded. What [God] has decreed of mee Himselfe best knowes, for my part, I shall still pray for a perfect resignation to his [blessed] Will, & a resembling Acquiescence in it. & I hope [his] Spirit will soe conforme mee to his dispensations. that I may cheerefully by his assignement, either continue my worke, or ascend to receive my wages. And in this I must implore the Assistance of Your fervent Prayers (Deare Sister) which I am confident will both find a shorter way to Heaven, & be better wellcom'd there. These 3 or 4 weekes, I have been troubled with the Visits of a Quotidian Ague, which yet had not the power to hinder mee from 3 or 4 Journeys to serve Franke & wayte & wayte [*sic*] upon my deare Broghill;[48] nor from continuing my Vulcanian Feat;[49] & in the Intervalls of my Fitts I both began & made some Progresse in the promised Discourse of Publicke-Spiritednesse:[50] but now truly Weakenesse & the Doctor's Prescriptions have cast my Pen into the Fire: tho in spite of their Menaces, I sometimes presume to snatch it out a while, & blot some Paper[3] with it. My present employment is the reveiwing some Consolatory Thoughts in the Losse of Freinds, which my poore Lady Susan's Death oblig'd me to entertaine my selfe with; & which I am now recruiting.[51] If ever I finish them I shall trouble you to reade them, & if I [doe not, beseich] you to /fol. 128v/ make use of them. The Melancholy which some have bin pleas'd to misrepresent to You as the Cause of my Distempers is certainly much more the effect of them: neither is it either of that Quality, or that Degree You apprehend, but much more Just then Dangerous. Yet to obey You I shall endeavour a Divorce; & as the properest Meanes endeavor to waite upon You: in order to which I came this Night in a Litter to this Towne, whence I intend not to dislodge, till God's blessing upon the

[47] Boyle's last letter to Katherine is not likely to be that of 13 May 1648, so we must assume that the letter to which he refers is lost. As is evident from the address and superscription, this letter was written at Bath where Boyle had been staying since July, and where he had had an attack of the ague. A folio endorsed 'Doctor Davies directions for my Master 30th Julii 1649', containing instructions for regimen and medicines, must refer to this illness; see BP 18, fols 101–2.

[48] Boyle refers to his brothers Francis (for whom see above, p. 23n.) and Roger, Lord Broghill.

[49] Boyle alludes to the establishment of his laboratory.

[50] For this discourse, *Free Invitation* (1655), see *Works*, vol. 1, pp. 1–12.

[51] Lady Susan has not been identified. She was possibly the infant daughter of the Earl of Barrymore; see J. Lodge, *The Peerage in Ireland*, 7 vols (London, 1789), i, 300. Evidently Boyle penned a discourse on the 'Losse of Freinds', but it does not survive.

Remedies enable mee to doe it on horse-backe. The Kindnesse You expresse in the Letter I receiv'd this morning, has brought[4] mee soe high a Consolation that I shud thinke it cheapely purchas'd by the occasion of it, if I had ignor'd, that the sole want of suiteable opportunityes restrain'd the frequency of resembling straines;[52] & if I were not too well acquainted with the Greatnesse of Your Goodnesse not to derive a higher Joy from Your Obliging Proffers, as they are Effects of Your Freindshipp then Testimony's of it. But tho I value the blessing of Your Company at the rate of having the happinesse [of] more then an indifferent acquaintance with you; I cannot consent to purchase my Felicitye (if such a thing could be done) by your Disquiett: for Your Remove will not more certainly discompose Your Family, then twill be [useless] or unnecessary to me; the Nature of my Disease being such, that 'twill either frustrate Your Visitt, or allow mee to doe soe. For if in a very short time it destroy not, 'twill leave mee strength enuf to fetch a perfitter Cure of it at London, whither in spite of my present Distempers which are not small, nor (I feare) very fugitive; the Physitions would perswade mee, that by God's assistance I may bee able to crawle in a short time. I shall beseich You therefore not to stirre 'till You heare further either from mee, or of mee; & to beleive that tho Your Visitts are Favors of too prectious a Quality to be fully receivable from Your Intention onely, yet my Concerne in Your Quiett will make mee (in the purpos'd Journey) more wellcomely resent your Dessein then your Presence. I hope you will pardon the Disorder of this scribble to that of the Writer, who is not onely weary of his Journey, but is at present troubled with the fit of his Ague; which yet being but a sicknesse cannot impaire a [*sic*] Affection, which will be sure to keepe[5] mee really & unalterably till Death

My dearest, dearest dearest Sister
Your most affectionate brother
& humble servant
R. B.

Bath, August the second 1649
late at night.

Endorsed on fol. 129v by Wotton: 'Aug^{t} 2. 1549 / a very prosy Letter from Bath to his sister (I suppose Ranelaugh) when he was ill, mentions Intention of publishing a discourse of public Spriritednes. &c'. Also endorsed with Miles's crayon number '6'.

BOYLE to [LADY RANELAGH] 31 August 1649

From the scribal version in BL 1, fols 120–1. Fol/2.
Previously printed in Birch (ed.), *Works* (1744), v, 238–9. Also printed in Birch (ed.), *Works* (1772), vi, 49–50.

[52] This letter is not extant.

My sister

I must confesse that I shud be as much in your debt for Letters, tho I had answer'd every one of Yours; as he is in his Creditor's who for two Angells has payd backe but two Shillings. For certainly, if any where, 'tis in the Productions of the Mind, that the Quality ought to measure extent and assigne number: and Equity[1] to multiply excellency, where Wit has contracted it. I cud easily evince this truth, & the justnesse of the Application too, did I not apprehend, that your Modesty would make You mind mee, that the Nature of my Disease forbids all Straynes. I am heere, God be prays'd, upon the mending hand: tho not yet exempted either from Payne or Feares; the latter of which I could wish (but beleeve not) as much Enemyes to my Reason, as I find the former to my Quiett. I intend notwithstanding, by God's blessing, as soone as I have heere recruited & refresh't my Purse and selfe, to accomplish my Dessein'd Remove to London, my hop't arrivall at which, I looke on with more Joy, as a Fruite of my Recovery then a Testimony of it. Sir William & his Son went hence this Morning, having by the favor (or rather Charity) of a Visit, made mee some compensation for the many I have lately receiv'd from Persons, whose Visitations (I thinke I may call them) in spite of my[2] Aversenesse to Physicke, make mee find a greater Trouble in the Congratulations then the Instruments of my Recovery.[53] You'l pardon, perhaps, the bitternesse of this Expression, when I have told You, that having spent most of this Weeke in drawing (for my particular use) a quintessence of Wormewood, those Disturbers of my Worke, might easily shake some few drops into my Inke. I will not now presume to entertaine You with those Morall speculations, with which my Chymicall Practises have entertained mee;[54] but if this last Sicknesse had not diverted mee I had ere this presented You with a Discourse ([3]which my Vanity made me hope would not have displeas'd You) of the Theologicall Use[4] of Naturall Filosophy; endeavouring to make the Contemplation of the Creatures contributory to the Instruction of the Prince, & to the Glory of the Author of them.[55] But my Bloud has soe thickn'd my Inke, that I cannot yet make it runne, & my thoughts of Improving the Creatures, have bin very much displac't by those of Leaving them. Nor has my Disease bin more guilty of my Oblivion then my Employment since it has[5] begun to release mee. for Vulcan has so transported and bewitch'd mee, that as the Delights I tast in it, make me fancy my Laboratory a kind of Elizium; so as if the Threshold of it possest the quality the Poets ascrib'd to that Lethe their Fictions made men taste of before their Entrance into those seates

[53] This is possibly a reference to Sir William Parsons (c. 1570–1650), whose cousin, Catherine Fenton, was Boyle's mother. His son was Richard Parsons, MP.

[54] This work does not appear to survive.

[55] Boyle's reference is to the treatise 'Of the Study of the Book of Nature'; see *Works*, vol. 13, p. 145ff.

of Blisse; I there forget my Standish and my Bookes and allmost all things, but the unchangeable Resolution I have made of ‹continuing›[6] till Death[56]

Sister
Stalbr: August Your
the last 49 R.B.

Seal: faint paper impression of seal from another letter.
Endorsed by Miles: 'Aug[us]t 31. 1649 / In this some acc[oun]t of his Chemical operations – may be inserted in life' and with Miles's crayon number '7'.

BOYLE to UNKNOWN CORRESPONDENT(S) 15 November 1649, 20 November 1649, 21 December 1649 and January 1650

Birch in his 'Life' of Boyle (*Works*, i, 26), notes: 'He was at *London* on the 15th of November, 1649; on the 20th of the same month at *Marston*; on the 21st of December, and in the month of January following, again at London'. This must be based on evidence from letters, but the only extant letter with a date definitely matching those given is that from Boyle to the Countess of Barrymore of 21 December 1649 (though it is possible that Birch misread 20 December in Boyle's letter to Broghill of that date for '20 November'). Hence these other references must be to letters now lost. See above, p. xxx.

BOYLE to [BROGHILL] 20 December 1649

From the scribal version in BL 1, fols 122–3. Fol/2.
Previously printed in Birch (ed.), *Works* (1744), v, 239. Also printed in Birch (ed.), *Works* (1772), vi, 50–1.

My dearest Governor,[57]

I receave in our Separation as much of happinesse as is consistent with it, in hearing of You in so Glorious & from You in so obliging a way; & in beeing assur'd by Your letters & Your Actions, how true You are to Your Freindshipp & Your Gallantry. I am not a little satisfyd to find, that since you were reduc't to leave Your Parthenissa Your

[56] Boyle's employment is the establishment of his laboratory, also referred to above in Boyle to Lady Ranelagh, 2 Aug. 1649, where Vulcan is similarly described as his inspiration. Boyle uses classical mythology to describe himself as possessed.

[57] 'Governor' was Boyle's pet name for his brother.

successes have soe happily emulated or continu'd the story of Artabbanes; & that You have now given Romances as well Creditt as Reputation.[58] Nor am I moderately pleas'd to see You as good at reducing Townes in Munster as Assyria, & to find Your Eloquence as prevalent with Masters of Garrisons as Mistresses of harts; for I esteeme the former both much the difficulter Conquest, & more the usefuller. Another may lawfully exalt Your bold Attempts & fortunate Enterprizes; but for my part, I thinke that such a Celebration would extreamely misbecome a Freindshipp, to which Your Goodnesse & my Affection, flatter mee into a Beleife that our Relation has rather given the Occasion then Degree. Besides that I have soe great a Concerne in all things wherein You have any, that the Presumption of my owne Modesty dos as well as the Greatnesse of Yours, silence my Prayses. And truely that which most endeares Your Acquisitions to mee is that they have cost[1] you so little Bloud. For besides that the Glory is much ‹more› Your owne to reduce Places by Your owne single Virtue, & the Interest it has acquir'd You then if you had I know not how many thousand men to helpe you; & share as much the honour of Your successes as they contribute to them; besides[2] this Consideration, I say, certainly tho a Lawrell Crowne were more glorious amongst the Romans; the Myrtle Coronet, (that Crown'd bloodless Victoryes) ought to be acceptabler to a Christian, who is ty'd by the bindingst Principles of his /fol. 122v/ Religion, to a peculiar Charity towards those that professe it; to use towards Delinquents as much Gentlenesse as infringes not the just Rights of the Innocent; & to be very tender of spilling their Bloud, for whom Christ shedd his. But I am lesse delighted to learne Your Successes in the World, then to find (by your Letter to my sister Ranalo)[59] that You meane not they shall tye You to it: & are resolv'd as soone as Your Affaires and Reputation will permitt You, to divest Your Publicke Employment, & retire to a quiet Privacy, where You may enjoy Your selfe, & have leasure to consider the Vanity of that Posthume Glory, which has nothing in it of certaine, but the uselesnesse. That in that hurry of businesses that distract You, You could find leisure to blesse me with Your Letters, is a Favour, which tho it amaze me not, dos highly satisfy mee. The kindnesse they expresse is wellcomer to mee for what it argues then for what it promises; & I am much more pleas'd to see You in a Condition of making Promises, then I should be with their Accomplishment. I shall onely in generall desire Your Countenance for those that manage my fortune in Your Province, whither I shud wait upon my dearest Lady M; if black Betty did not:[60] & seariously the Jade arriv'd very seasonably to save me a Journey for which I was but slenderly provided; for having not yet bin able to put off my L. Gorings Statute I am kept in this Towne to doe Penance for my Transgressions of that Precept, My son, put

[58] Boyle refers to Broghill's *Parthenissa*, written in the style of the French chivalric romances, which was published in several editions between 1651 and 1676. Artabanes is the hero in *Parthenissa.*

[59] i.e., Lady Ranelagh.

[60] Boyle alludes to his sisters-in-law, Lady Margaret Broghill (for whom see above, p. 23n.) and Lady Elizabeth Kinalmeaky (1622–81), the widow of his younger brother Lewis.

money in thy Purse.[61] But the Terme assign'd my expiation is, I hope, neere expir'd; & I despaire not to see my selfe shortly in a Condition to make You a Visitt, that shall prevent the Springs. I shall implore /fol. 123/ for my Lady Pegg[62] the selfe same Passage I shall wish for my selfe, & solemnize the first Easterly Gale with a

Farewell faire Saint, may not the Seas & Wind &c:[63]

But I am so entirely taken up with the Contemplation of Her & You, that I had forgott that I have to write this night more leters then the 4 & 20 of the Alphabet;[64] My next shall give You an account of my Transactions, my Studyes & my Amours: of the latter of which Blacke[3] Betty will tell You as many Lyes as Circumstances; but hope You know too well what shee is & whence shee comes, not to take all hir Storys, for Fictions allmost as greate as is the truth that styles mee

My dearest Brother
Your most affectionate Brother
London this 20th of & humble servant
Dec: 1649 Robert Boyle.

Endorsed on fol. 123v by Miles: 'Decr. 20 1649 / to Lord Broghil pt of this deserves to be made public' and with Miles's crayon number '8'.

BOYLE to [ALICE BARRY, DOWAGER COUNTESS OF BARRYMORE][65]
21 December 1649

From the scribal version in BL 1, fols 141–2. Fol/2.
Previously printed in Birch (ed.), *Works* (1744), v, 239–40, and in Birch (ed.), *Works* (1772), vi, 51–2.

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[61] Boyle refers to George Goring (1608–57), 2nd Earl of Norwich, who married Boyle's sister Lettice in 1629. 'Lord Goring's Statute Staple for £8,600', a type of bond, is listed in the 'Catalogue of the Writings left in the wooden box with Mrs Dury' drawn up by Boyle: see BP 36, fols 20–1. Boyle uses the advice of Iago in Shakespeare's *Othello* (I. iii. 346), 'put money in thy purse', to evince his situation under Goring's bond.

[62] Evidently, Lady Margaret Broghill.

[63] Boyle quotes the first line of Thomas Cary's poem, 'On his mistresse going to sea', printed in Richard Fanshawe's *Il pastor fido* (1648). Boyle was clearly planning a visit to Ireland, which was abortive, as is apparent from his letter to the Dowager Countess of Barrymore, 21 Dec. 1649, below.

[64] As was normal practice, Boyle attributes 24 letters to the alphabet, in which 'i' and 'j', as well as 'u' and 'v', were counted as one letter.

[65] Alice Boyle (1607–66), 2nd child of Richard, 1st Earl of Cork. She married her 1st husband, David Barry (1605–42), 1st Earl of Barrymore in 1621. Her 2nd husband was John Barry of Liscarrol (dates unknown).

Tho I count it no small happinesse to enjoy the long-forbidden liberty of writing to You; yet after almost ten yeares of separation, & more then almost as long a Sorrow for it, to find my selfe still withheld from a more satisfying & immediate Conversation with You, then that of Letters (by a Detention here, as tedious as necessary;) is an Affliction, that tis not easy, moderately to resent. For being as confident as desirous to be able to waite upon You in my Lady Broghill's Company, as soone as our Residences shud loose their Antipathy, I am both contrary to my Expectation, & Interest, by unforeseen & dilatory Accidents, unhappily kept heere, & condemn'd to renounce soe fayre an opportunity, as that which my Sister Broghill's Remove, & Invitations to attend her in it, present me; by a Confinement, so unwelcome, that Nothing more troubles mee in my Stay here, then that it hinders me from stirring hence.[66] But I despaire not, by the Dispatch of those Affayres that by an indis pensable Necessity imprison me in this Place, to procure a sudden Release, which yet, tho it shud prevent my hopes, will appeare slow to my Desires; which cannot but be more then moderately eager, to reveiw my Native Country, endeard by Your Presence, & my ([1]fourteene yeares Absence. I know Franke will endeavour to perswade You, that tis the Thing call'd Love that keepes me heere;[67] but truely I have ever kept that Passion obsequious, not onely to my Reason but my Interest; besides that I should very willingly doe You the Injury of being kept from You by any of Your Sexe. The Occasionall Mention I have made of Mistresses, brings into my Memory, that I have been desir'd to say something to You concerning /fol. 141v/ my L[ord] of Barrimore's late Marriage.[68] That I neither contributed to it, nor so much as knew of it, I think You cannot ignore: & that if I had knowne of it, I should not have contributed to it, my Humor will, perhaps, encline You to beleive. I ever payd too Religious an Obedience to my owne Parents, to perswade or justifye the contrary Practise. And therefore without pretending to Excuse or Extenuate what is past, having minded You that there is a Difference betwixt Seasonable & Just, I shall venture onely to represent to You, that t[he][2] Question is not now, whither or no the Marriage be a thing fitt to be done, but how it is to be suffer'd: & that as the b[est] Gamesters have not the Priviledge of chusing their owne Car[ds,] but their skill consists in well playing the Game that is de[alt] them: so the discreetest Persons are not allow'd the choice of Conditions & events, but their Wisdome consists in making the best of those Accidents that Providence is pleas'd to dispen[se] them. This being presuppos'd, I shall begg You to consider, whither after so powerfull a Mediation as that of a Crown'd Intercessor very passionate & lasting, (tho never so just) Resentments, may not prejudice You, with that Party for which You have openly

[66] See above, p. 85n., for Boyle's proposed visit to Ireland. For Lady Margaret Broghill see above, p. 23n.

[67] For Boyle's brother Francis see above, p. 23n.

[68] Boyle refers to the Dowager Countess's son, Richard Barry, 2nd Earl of Barrymore (see above, p. 27n.). Lord Barrymore had married Susan Killigrew, a sister of Elizabeth, the wife of Francis Boyle, some time before. Clearly the marriage was an unwelcome one as far as Boyle was concerned.

declard, & which alone You can have unflattering Expectations[3] from:[69] and whither or no, in things past Remedy it be not better, rather by a winning Gentlenesse to improve what You dislike to its best uses, & forgive a fault You have already showne Your selfe & made him sensible of; then persist in testifying an implacable Indignation, that cannot redresse a Displeasure & may provoke one. I know You are wise enuf to be Your owne Counsellor & that You want neither those Abilitys, that fit us to discerne Reason nor those Inclinations to dispose us to acquiesce in it. Nor is it to advise You that I have assum'd this Freedome but onely to satisfy the Desires of some of Your neerest Freinds: who tho they thinke the Match very unhappy, thinke it unfitt the marryed Paire[4] shud be so. I hope by the End of February to justify these Considerations, or beg your Pardon for them at Castle-Lyons.[70] And if in the meane Time, You will vouchsafe, to let me know /fol. 142/ in what my Stay heere may not be uselesse to You, I shall thinke my selfe happy in the Opportunitys of letting You see, that I am as much more willing as more fitt to serve You then to counsell You: & that tis by my Obedience that I am cheefly ambitious to evince my selfe

My deare Sister
Your most affectionate, most faithfull
& most humble servant
Robert Boyle.

London this 21th
of Decemb: 49.

Endorsed by Miles: 'Decr. 21 1649 / To his sister of the Marriage of Lord Barry – more. Q whether printed as it is?' and with Miles's crayon number '9'.

[69] Susan Killigrew was maid of honour to Queen Henrietta Maria, who presumably supported the match. See Townshend, *Life and Letters* (above, p. 30), p. 450.

[70] Castlelyons, Co. Cork, Ireland, was the residence of the Dowager Countess of Barrymore.

— 1650 —

For lost letters which have been placed by date, see below, p. 89.

BOYLE AND OTHERS to CRESSY DYMOCK[71] 15 March 1650

From the copy in the hand of Hartlib in HP 62/2A–2B. 4°/1.
Previously printed in Turnbull, *H. D. & C.*, p. 268.

Good Mr Dymock

Wee earnestly entreate you to goe on in making Experiments of those particulars which wee desire and expect from you, both in your Manure and Engines of Motion.[72] And wee desire you not to bee mooved with the words of any that shal labour to draw you from us, before you have perfected the works wee daily expect from you And if any accident should happen to disturb you in these process, wee intreate you not to bee discouraged[1] at it: for although wee are very far from being Omnipotent, yet wee hope to approve ourselves on all occasions to bee

Your faithful friends to serve you.
Ro. Boyle
J. Sadler.
John Durye
Sam. Hartlib
Ben Worsley
March. 15. 1650/49. Henry Robinson.[73]

[71] Cressy Dymock (dates unknown), agriculturalist and inventor, one of Hartlib's protégés. This presumably relates to the plan to set up Dymock at Vauxhall College, seen as a centre for technological innovation. See Webster, *Great Instauration*, pp. 365–6. A further document, dated 22 May 1649 and soliciting 'Contributions for advancing of agriculture', to which Boyle contributed £10, survives as HP 62/48/1A, 1B, 2B.

[72] Two letters from Dymock to Hartlib were published by Hartlib as *An Invention of Engines of Motion* (1651).

[73] John Sadler (1615–74), master of Magdalen College, Cambridge, and one of the trustees of Hartlib's Advancement of Learning project. For John Dury see above, p. 56n. Henry Robinson (1605–c. 1673), merchant and economic reformer.

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For our much respected / friend / Mr Cressy Dymock
at his house in / London and / Chelsey

Endorsed in an eighteenth-century hand: 'Letter to Dymock from the honourable Mr Boyle &c.'

BOYLE to HARTLIB — 1 May 1650

From the printed version in Birch (ed.), *Works* (1744), i, 27. Also printed in Birch (ed.), *Works* (1772), i, xlvi–xlvii.

SIR,

I HAVE here so little time to dispatch a great deal of indispensable business in, that my knowledge of your goodness, and yours of my hurry, promises me your pardon for the necessitated fault of returning to so long and so excellent a letter so short and so hasty an answer, which ought to be wholly employed in acknowledgments and thanks for the exact intelligence you are pleased to oblige me with from *Utopia* and *Breda*;[74] my inclination as much concerning me *in Republicâ Literariâ*, as my fortune can do *in Republicâ Anglicanâ*.[75] Nor am I here altogether idle, though my thoughts only are not at present useless to the advancement of learning; for I can sometimes make a shift to snatch from the importunity of my affairs leisure to trace such plans, and frame such models, as, if my Irish fortune will afford me quarries and woods to draw competent materials from, to construct after them, will fit me to build a pretty house in *Athens*, where I may live to philosophy, and Mr. *Hartlib*, *Stalbridge*, A cordial friend, and not wholly useless servant,

May-day,1650. R.B.

In great haste, which I beseech you pardon.

BOYLE to HARTLIB — 15 July 1650

This letter is mentioned in a letter of William Hamilton[76] to Hartlib, 29 July 1650 (HP 9/11/23A–24B).

[74] Boyle's meaning here is not entirely clear, although John Dury had taught at Breda. 'Utopian' presumably refers to the Hartlib circle; see above, p. 51.

[75] Lit., 'in the republic of letters … in the English republic'.

[76] William Hamilton was a Fellow of All Souls College, Oxford, and was interested in promoting mines in Scotland; see Webster, *Great Instauration*, p. 394.

— 1651 —

Lost letters dating from 1651 referred to in surviving letters are as follows:

Two letters from Boyle to Starkey, dated 29 March and 19 April 1651 (below, p. 90).

A letter from Boyle to Mallet, and one from Mallet to Boyle, both about October 1651 (below, p. 103).

GEORGE STARKEY[77] to BOYLE — after 19 April 1651

From the original in BL 6, fols 99–100v. Fol/2. A partial transcription in an unknown hand exists at BP 30, pp. 499–506. Bodleian Library, MS Locke c. 44, pp. 142–53, is a complete transcription of the original made c. 1692.
Previously printed almost in full in German translation in *Dr Georg Starkeys Chymie* (Nuremberg, 1722), pp. 416–58.

Right Honourable

And my worthily Honored Friend, I received yours bearing date the 29th of March, & againe another the 19th of April, a firme obligation of your formerly obliged servant ‹to›[1] future observance, & after humble thankes, (the utmost of my posse) for the Condescendance herein I shal give you an account of my so long protracted silence[.][78] Without Complement (Worthy Sir) it was no neglect, but an over zealous 'oργη`[79] of having somewhat material that might be couched in my otherwise undesirable lines, that might counterpoise the trouble of your perusal. I would in good Earnest if possible have made you a Large answer in a Laconical

[77] George Starkey (1628–65), American-born chemist, whose early liaison with Boyle is documented by this and subsequent letters. This letter is discussed in William Newman, 'Newton's *Clavis* as Starkey's *Key*', *Isis*, 78 (1987), 564–74. See also Newman, *Gehennical Fire* (above, p. 48), p. 295, n. 26; *Aspiring Adept*, p. 160, n. 88, and Newman and Principe, *Notebooks and Correspondence of Starkey* (above, p. xvi).

[78] Neither of these letters is extant.

[79] 'vehement desire'.

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Paragraph, ‘έυρηκα, ‘έυρηκα, ’έλθον και` βλεπου^[80] but must at present be forced to give you a leaner account (plurium leviusculorum) ut si non prosint singula, multa juvent.[a] And first of my process in [antimony], I tooke of it a pound, & of Nitre pound ½ of Tartar Calcined [one] pound[.] I mixed them &[2] Melted them & had of Regulus about 5 [ounce] & ½ which I have by me. I had a very fine Slact, I melted it without any Coales falling into the Crucible, I melted the Slact in Water, & having neere a dozen glasse Basins a purpose, I decanted my Solution (for Sir filtration is not proper) but a glasse being set into a place where no dust wil fal on it, it separates exquisitely, a skin wil swim at top which is not amisse, & a ring of red about the glasse in which it stands to decant, & if the infusion stand long in bottles which are open, the aire wil precipitate the Sulphur Auratum which I matter not so it be once wel decanted from its faeculency, Then Sir I tooke of Oyle distilled (not of so many ingredients[3] as I told you of) for I was hasty, but from Bees waxe alone & made a Sapo[b] with it & ordinary Lixivium Tartari per deliquium, & when it was made a Sapo, I added to it of my Lixivium of the Slacts first Boyled to a Cuticle, as I guesse about a 4th part in respect of my Lixivium of Tartar alone, & of that 2 parts to three of the Oyle[.] The Sapo being made I added of Amber greece[c] a dragme for I made at least a pound & halfe of my medicine[.] but first when it was made a Sapo, I added of water to it Cleare taken by little & little & boyled it so long til the Empyreuma both of oyle & Lixivium & the Mineral Sulphur were boyled away & the Compound of it selfe smelt sweet[.] Then I added the Amber, & it incorporated so wel that I thinke a pleasanter medicine Could not be made, for smel; as red as Vermilion* Now to show your Honor that I am an English man I shal adde a disaster. I conceived that a few flores of Sulphur Vive which I Carefully prepared would doe Wel, which I added & intended to boyle it softly, I left it in a furnace with a gentle fire & gave order to have a fire put under when that went out, which was made a degree or two too hot, which sent away most of my Confections in the forme of a vapour which never returned to make report of their virtue & left me an inconsiderable foetid faex almost of no pondus which smelt sulphurous[.] This experiment what it lost me, your Honor may easily calculate, but how it payd me with skil & what improvement I have since made, I shal somewhat Cheere you to relate. This set me upon a more Eager search after Tartarus Volatilis in this operation then in any other way[.][d] Therefore Honorable Sir, I tooke of Tartar Calcined & not Extracted a pound in weight, of Oyle of Waxe as much, I mixed them in an Iron kettle til they came to a Sapo or to such a Consistence, then I let it Coole & made balls of it & put it into a Retort, & drove it of in a Retort in a fire of Sand & I had halfe a white water, then a thin Oyle, & after a little thick oyle[.] I melted out my faeces, & extracted my Salt & I added my oyle againe, & drove it againe over, so in

[80] The Greek here may be translated thus: ‘I have found it! I have found it! I have come and I see!’ The first half of this passage is, of course, the exclamation of Archimedes upon his discovery of the hydrostatic balance; see Vitruvius, *De architectura,* ix, preface x.

processe of time I had most of my oyle made into a White Menstruum of a Gallant virtue, The thin Oyle that I had left I set by it selfe & in a short time it did Coagulate into Speares whereby I perceived that it had in it a /fol. 99v/ Volatile Salt. I find it a noble outward application against the Kings Evil, &c. This worke I did not prosecute with many Cohobations, because I was upon a higher discovery Having this of Helmont stil sounding in mine Eares 2^{d} Alcalia Volatilia instar Saponis essent abstersiva,[81] I then intended to blunder in Simplicity, & tooke of Oyle Olive 5 pints of Tartar wel Calcined a pound & halfe[.] I distilled them putting them into a Retort together But for want of prævious uniting mixture they did so swel in the Retort that they made a filthy Cacatura with an odious stench. This disaster the scourge of over hasty experiments, no whit discouraged mee but rather whipt me into a more Considerate posture. Wherfore I tooke the same quantity of Calcined Tartar & of Oyle the like measure & resolved to make a lawful marriage betweene them before I put them into my Retort, my Tartar was only Calcined, & my oyle Crude[.] They Easily became a Saponary Consistence & you might thinke that I in this Cookery were dressing pottage for the Devils breakefast, I boyled them til in the Cooling they grew as hard as hard sope, then I put them into the Retort offatim,[82] (in good sooth a slovenly worke not befitting any but a Chemist, that is one who wil purchase skil with paines) I distilled it by degrees, an indifferent fire of Sand wil serve turne, & I drew of al that would Come & I had a Lovely liquor of a milky Colour & a greene oyle very subtle mixed, I Cohobated it twise but I found the Remaining faeces of the Oyle together with the unseparated faeces of the Calcined Tartar did hinder my second & third union of matters in my redistillations, which yet whip me into a more serious posture to wit of extracting my salt & distilling my oyle, first before mixture, which my lazy hasty temper found at first arguments to excuse to my selfe, to save time & paines, but now experience telleth me that it is an inexcusable fault. But to return to my white liquor, I find it to be ponderous, & nobly answering the Expectations from Tartarus Volatilis (it is not wholly without Empyreume though but little)[.] I am now in the prosecution of it, & shal give you a further account of it by the next: Only so much I see that though I know noble things are in Sal Tartari prepared with Spirit, both of Vinegre and wine, yet the secret of Tartar I shal seeke totally in Oyles mixed with it in forme of a Sapo, the oyle being first distilled & the Salt extracted from its faeces per deliquium, or by water, & after boyled ad Cuticulam[83] (which is high Enough to boyle before the oyle be put in it)[.] this I shal Cohobate making an intimate union each Cohobation which about too houres boyling in a simpering heat with the Retort set with the nose up wil effect without taking the Matter out & doubt not by what I

[81] 'Volatile alkalis should be cleansing in the manner of soap'.

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[82] i.e., in pieces.

[83] 'to a cuticle', i.e., evaporated until the crystallising solute forms a skin over the concentrated solution.

see already but to make my Salt totally Volatile in 4 Cohobations the highest degree in each Cohobation in the End being not above a fusca ignitio arenæ[84] My present experiments have discovered Enough to make any searcher in Nature to be glad[:] one weekes experience wil show your Honor an ocular experiment of what I write without interfeering other operations, & then you will see that I have not beene Idle hardly an hour,[4] yea scarce allowed myselfe Natures due for time of sleepe. Now as Concerning the Alkahest I have beene Extraordinarily imployed about the search of it & hope to give you a further account by the next[.] I have already made a Wonderful spirit that acts sine repassione,[85] I tryed it with Oyle olive which it in the Twinkling of an eye turned into a pure milke[5] on which in a smal digestion there did swim an Essential oyle which was very pure, In distillation of it I found an unhappy accident which was this[.] The oyle I did perceive hindred the distillation swimming at the Top of the Milky Substance which sometimes would burst out, & spurtle into the Receiver, I to save the Retort tooke it up & turned the nose upward[,] the Retort being neere full the liquor fel downe & Even stopt the Mouth of the Retort & so the fume within wanting Vent blew forth almost al in the Retort on my hat & Clothes that I stunke for a wager, & this was the fate of my long preparation[.] some that was left I keepe by me & am Reiterating my Experiments herein & ripening them what I may, Yet I found that al the oyle which by this mishap flew on me (so much that for the present it made me dung wet,) the same dryed out without spot or odour, by which I find plainly that my Menstruum doth separate Elements. As for my progresse in [antimony] I made a quantity of [mercury] & in /fol. 100/ it see operations not to be Committed to pen & paper,[86] Some Gentlemen sollicite me to follow extractions of ☉ [gold] & ☽ [silver] out of [antimony] & [iron], among whom Mr Worsley an ingenious Gentleman did much perswade, To this an argument did move not a little respecting the suddaine profit that might accrue by it, to which the ill dealing of some with whom I had dealing betweene England & New England seemed inforcingly to invite (al the bills that I brought to the Value of 150 li. being protested)[.] yet I Considering that first my way of extraction of ☉ [gold] & ☽ [silver] being not done by violent heats fluxes waters or the like, but in a more philosophick way, viz of volatilizing the body & after Congealing it, required no Charge to speake of much lesse partners, & in a thing which I Could Command as a Master, I would I not work as an Amanuensis, Nor yet would in such a way of lucre prostrate so great a secret as I judged the [mercury] of [antimony] to be, I hereupon waved the motion, not willing to imbrace a life (in

[84] 'dark firing of the sand', i.e., when the sand begins to incandesce a dark red from heating.

[85] 'without being acted upon'. This is a characteristic of the alkahest.

[86] For the concept of different metallic 'mercuries', see Betty Jo Teeter Dobbs, *Foundations of Newton's Alchemy* (Cambridge, 1975), pp. 128–9, 134–46.

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Exchange of a studious search of Natures mysteryes) which might be Compared with that of a Milhorse running round in a wheele to day, that I may doe the same tomorrow & yet (having so faire an opportunity to effect in deed, what I have sometimes spoken of to some Gentlemen in words) I made extraction (in about halfe a dayes time) of 12 graines of pure ☉ [gold] & 4 [ounces] & ½ of pure ☽ [silver], the Sol & Luna in al assayes very pure only the ☽ [silver] farre Heavyer than ordinary which did distract the Cockscombes of almost 20 refiners & Goldsmiths to whom I shewed the ☽ [silver], who al liked it[6] but stood amazed at the weight, & so desired an assay of it, at the publique hal, which I was unwilling to, because of publiquenes, for every one (not one in at least 16 missing) did say it was Philosophick ☽ [silver], insomuch that I Could have wished it in the Sea; for some of my friends advised me that it was dangerous to have it bruted abroad, that any one Could extract ☉ [gold] & ☽ [silver] out of inferior Mettals, Farrar in two or 3 days after Came Gaping, & he would give so much viz. 30 s. per [ounce] for the ☽ [silver] or 5000 li. for the secret, this he urged to me before Mr Web,[87] I told him I had had tryal of some of the world & in that point I had foun[d] no smal basenes, that unlesse a man wil stoope to some mens humors in some things which they who Court Nature not Sophistry, Count sordid, they will speak of them what not, & one of that farina I had found him & therefore for his mony I advised him to keepe it, for I Resolved to be a Stoick so farre as Civility breached if I met him in the Street I would shew it but for any other the least familiarity I would have none with him nor any in whom he had influence & so tooke leave & would not heare nor speake one word more.[7] Now Sir as touching your desire of a Key into [antimony] I shal in briefe adumbrate to you,[8] That [antimony] is a crude unripe mineral which in it hath metalline principles al touching the matter, but as touching the forme it is raw, & undigested & Mineral. It is digested truly by Sulphur which lyeth, in [iron] & no where Else, [iron] & [antimony] being melted together two of [antimony] to one of [iron] give a [regulus] & this at the 4th fusion gives a signate starre,[88] by which signe you shal know that the soule of [iron] is by the Virtue of the [antimony] made totally Volatile, if this Regulus Stellate be melted with ☉ [gold] or ☽ [silver] it Evaporates totally on the test which is indeed a mystery. This [regulus] if it be amalgamated with [mercury] vulgar & digested with it a smal time viz 2 or 3 houres in a Close pot with a Cover or a glasse stopped in

[87] Starkey refers to Dr Richard Farrer, a friend of Sir Kenelm Digby, with whom Farrer is later paired in this letter. 'Mr Web' is Francis Webb, with whom Starkey was living at the time. See R. S. Wilkinson, 'The Hartlib Papers and Seventeenth-Century Chemistry, Part ii', *Ambix*, 17 (1970), 85–110, esp. p. 88. See also Newman and Principe, *Tried in the Fire* (above, p. xvi).

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[88] For the 'stare regulus' of antimony see Dobbs, *Foundations* (above, p. 93), pp. 146–53.

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such a heat that the ☿ may begin to arise like a dew & no more, & then ground a convenient time in sicco[89] viz about halfe a quarter of an houre, (if in a hot mortar the better, ‹yet› not over hot) til it spew out a blacknes, & then washed til the blacknes doe come in smal quantity which wil be discerned by the light fouling of the water for at first it wil make the water very black, which must be poured of & fresh water poured on til the blacknes decrease, the amalgam then dryed is to be set to the fire and kept about 3 houres more in the former heat then ground in a hot mortar in sicco as before it yeeldeth fresh blackness which must be washed as before, & this reiterated til the amalgam become as bright as burnished ☽ [silver] (for at first it looketh but basely) Then distil the ☿ & amalgamate it againe even to the 9th time or 7th which wil be sufficient, & in al your amalgamations observe the heating, grinding, & washing, at the 7th time you shal have a ☿ that dissolves /fol. 100v/ al mettals ☉ [gold] especially sciens scribo,[90] for I have now in fire several glasses of ☉ [gold] with that mercury which grow in the forme of trees, & by Continual Circulation resolve the trees with the Body into one ☿ of which sort I have now one glasse in which ☉ [gold] is dissolved not to sight by Corrosion into atomes, but really inwardly & outwardly into ☿ as quick as any ☿ in the world. It also makes ☉ [gold] to puffe up to swel to putrefy, to grow with sprigs & branches to Change Colours dayly which sights doe dayly salute me, & truly it is the only great thing which I thinke is in al Alchemy, not sought for, nor found, I meane, not sought in a right way by Artists whose subtle wits are too high to esteeme the purgation of ☿ Vulgar by Cohobation reiterate from Regulus [Martis] which is the only familiar body to ☿ for it is next a kin to it in al the Mineral Kingdome & next to it ☉ [gold], which is the true Philosophy to mend nature in Nature Consanguinity to Consanguinity. Concerning this operation if you please to peruse Bernard Trevisan his Epistle in answer to Thomas of Bononia you Wil find this question fully resolved.[91] Now one secret more you must know before I passe this point, that you must have the mediation of Virgine Diana that is pure ☽ [silver] or else ☿ & Regulus ♂ wil not unite. Therefore make the Regulus thus. Of ☿ 9 [ounces], & ♂ 4 [ounces] (which is the true proportion) the odde number of [antimony] more than twise as much as is of ♂ is not to be slighted, for if you misse here you are gone) make a Regulus by gradual Casting in Saltpeeter (lest the matter flow over)[.] cast in of Saltpeeter to such a

[89] i.e., dry.
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[90] 'I write as one who knows'.
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[91] Starkey's reference is to *Bernardi Trevirensis responsio ad Thomas de Bononia* (1564). Bernard of Trier was a 14th-century figure, to whom an alchemical corpus, mostly of later date, was attributed.
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proportion of the Matter about 4 [ounces] or 3 at least, & a greater proportion of matter wil be found not so good in one Crucible, beat the [antimony] smal & put in it & the [iron] together (trust me this is best what Ever any may write)[.] you may use any smal nailes, but old stub nailes of Horses are best, let the fire be so strong as to Cause the Matter to flow which is not very difficulty [*sic*], when it flowes in some measure Cast in about a spoonful of Saltpeeter, when it hath left thundering & flashing Cast in againe another spoonful & so doe until you have Cast in 3 or 4 [ounce][.] then heape Coales about the Crucible (let none fall in if you Can avoyd it) & give a pretty quick fire (as to the fusion of ☥ [silver] vulgar) & so let it stand neere halfe a quarter of an houre. The matter will be thin if you work dextrously, poure it out into a horne, & in the bottom wil be the Regulus, & a shining slackt above it[.] Separate them when they are Cold & keepe the slackt in a dry pot[.] there is a mystery Couched in it which it wil be sufficient for me to hint only in this place. The signe of Good fusion is if the Iron be totally melted, the slackt wil of its owne accord fal to fine powder, The Regulus take & grind it to powder & adde to it 2 [ounce] of Saltpeeter at most or 1 [ounce] & ½. let them be wel ground together & then melt them againe & Cast away the slackt which is unuseful & Arsenical. The 3 & 4 time grind an [ounce] only or not quite so much of Saltpeeter with the Regulus & melt them againe (in a Clean Crucible at the 4th time, & you shal find the slact[9] tincted with a Golden Colour & the Regulus with a Starre, Note that the 3 last fusions the slacts are to be cast away as uselesse because Arsenical, yet are they Good in Chyrurgery. Also note the Reason of the grinding the Regulus to powder the 3 last fusions & the mixing the peeter in Grinding, for some doe put it in to the Crucible in lumps which is no good way[,] for first they shal find the Regulus long in melting & that not without much smoaking away. Moreover when the Saltpeeter is then Cast on it falling only on the superficies of the top doth for a time Coole the molten Regulus, & it being of an Easy flux floweth it self at first & then Crusteth on the Regulus, & is not melted againe without much fire which doth much wast the Regulus, & burnes away the best part, so that many misse the starre five times for one, which makes many observe signes & Constellations in making it, which is but vaine for thus you shal see the Regulus with the mixed Salt flow soone together & not be hardned at al, besides the difference of depuration, which this which is mixt doth give, from that which is barely injected. Now Sir take of this Regulus one part of pure ☥ [silver] 2 parts, melt them together, til they stand like a molten mettal, poure it out & you have a brittle masse of a base Leaden Colour,[92] You may perhaps pleasantly observe the affinity of this Regulus which is

[92] From this point the text used here is taken from MS Locke c. 44, beginning at p. 147, and is collated with the German translation.

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Sophical + [silver] & vulgar + [silver] how in their mixture they become of a farr more fluid nature then they were in each of their Simplicity & will stand molten almost as long as lead yea & though there be 2 parts of + [silver] yet the Regulus seemes to make it as it were of its owne nature to wit as brittle as it self & of its owne Colour. This masse pulverise & then take of it 2 parts & of /148/ [mercury] 4 parts (washed with Salt & vineagre & dryd) put them together into a Marble Mortar heat against the fire so hot that you cannot endure it in this Mortar with a hot Iron pestle grinde the [mercury] & the powder together for about ¼ of an houre[.] Thus by mediation of Dianaes doves have you joyned [mercury] with his Brother the Sonne [of] the Philosophers from whom shee shall conceive a Spiritual seed that is a fire which shall thoroughly purge away all its superfluities & to teach you (ad nasum)[93] there intercedes a fermental virtue[.] take then a little pulverised ♦ [sal ammoniac] & grind with it (when it is thoroughly amalgamated & adde a litle humidity enough ad humectandum[94] & you shall finde this one signe of the philosophers quod in [mercury] Suo faciendo magnus est foetor[.][95] wash it then with water pouring on grinding & decanting & putting on fresh till the faeces come but few yet the amalgam will looke basely[.] take it out & set it in a coverd pott in a heat that will only make a light dew of [mercur]ial vapour arise in it let it stand 2. or 3. hours dry your mortar & heat it & grind it again ¼ of an hour then adde a little ♦ [sal ammoniac] & grind that in a litle then wash it & this do till it be as bright as burnished Silver (the worke is painfull) then distill your [mercury] & amalgamate it again with the same + [silver] it was drawn from [with] the former proportion of fresh Regulus & proceed as in the first amalgamation[.] This do 7 times according to Riply then have you fullfilled what Trevisan saith Sunt quaedam [mercury] Sublimationes ab ejus propriis corporibus quibus per intima amalgamando conjungitur et commiscetur, unde pluries relevatus et reconjunctus superfluitates rejicit et amittit et non confunditur in natura, postea verò opus philosophicum intrat, potens quippe est in perfectis speciebus metallicis dissolvendis[96] NB Sir that in your washing which is but a manual worke you have some pure comes away with the impure for its but as I say an Encheiresis[.][97] Therefor save the black water &

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[93] 'to the nose', apparently a reference to the smell given off by the process.

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[94] 'to wet it'.

[95] 'that in making their mercury there is a great stench'.

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[96] 'There are certain sublimations of mercury from its proper bodies with which it is joined and mixed together intimately by amalgamating, and being many times elevated thence and rejoined with them, it rejects and loses its superfluities and is not confounded in its nature; thereafter it indeed enters into the philosophical work, and to be sure is powerful in dissolving the perfect species of metals.' Starkey refers to Bernard Trevisan (see above, p. 95) and to the 15th-century English alchemist Sir George Ripley.

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[97] i.e., a manual operation.

let the black powder precipitate then pour off the water & dry the powder in the Sun or in an Oven & then take an Urinal & set it in Sand & give it a Subliming heat put a Small glasse head on the top & lute it close & in a modest fire you shall distill away a portion of quick [mercury] wich put not to the other which is 7. times purified: for this is a collectaneum of all your washings but when you make [mercury] again you may put it in with the Vulgar [mercury] then shall you have a powder left of a blackish colour & considerable weight[.] Wonder not at the weight of the powder for the seed or virtue which is but of a small pondus is in thy [mercury] & if you please to peruse the noble Polonian you shall see how litle a part of the concrete the Seminal Vertue even in Seeds is[.][98] Nor is it that you ‹do› want a material principle in [mercury] which is the matter even of ☉ [gold] which is (as good Trevisan well observes) more mature than the [mercury] of the Sophi but we want a formal principle which is a fermentum Archeale[99] which is the invisible seed & by consequence pure fire Sequestred from the Moles of the Earth & hence it is that [mercury] thus gets a wonderfull incredible Virtue without /149/ coagulation for it grows not in pondus but in fermentall vigour[.] And that you may see with an Occular demonstration of the losse which the moles of your Regulus hath sustained & the gaine the [mercury] hath acquired first take the powder from which you sublimed the [mercury] which came away in the washings & put it into a Crucible set it to the fire that the Crucible be not red neither within nor without[,] you shall see the powder take fire & burne not as [sulphur] or with a flash but like a Vegitable coale or as Touchwood which if it be set from the fire in the Crucible will keep its fire (as a Coale) some 3 houres (which is strange[)] till at length you have a Calx left of a dark gray which you may melt into Regulus again but without virtue at least not so much as it had before & the pondus of this reduced Regulus will be within about 1/4 or 1/3 part as much as that which you added to the [mercury] with the ☽ [silver][.] And Note that every destillation is one Philosophical Eagle which is laborious to purge (for this purgation is the change of Natures[)] & every time your ☽ [silver] must look pure white (it may be sometimes a little yellow) but if it look of a Leaden colour it is a Signe that the washing was not compleat I shall teach you now what this [mercury] hath acquired (not pondus as I said before) for we expect a Spiritual impregnation which may not corrupt nor destroy the forme & flux of [mercury], but it hath received an acuation in respect of which it is of an admirable nature according to the noble Sendivon, Aqua est ferè ex nihilo et tamen in ea

[98] Starkey refers to Michael Sendivogius (c. 1556–1636/46), publisher of *Novum lumen chymicum* (1604).

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[99] 'archeal ferment'.

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Solvitur fructus Solaris sicut glacies in aqua tepida.[100] Excuse me I pray that I use the testimony of the Adepti. concerning this [mercury] for I know demonstratively that it is the Key of the great Work though I have not Experienc'd that great worke in it for I love to ascend by steps[.] My reasons are these first this[:] [mercury] will resolve all [mercur]ial Bodys to their first principles of [sulphur] & [mercury] which is one Signe of [mercury] of the Philosophers according to the Verdict of all Adepti[.] 2 it will without addition naturally out of its own bowels produce perfect ⁂ [gold] & + [silver][.] 3 It ‹is› more Volatile by half then [mercury] vulgar[.] 4 It will irreducibly destroy Sol that is reduce him into [mercury] which is the infallible signe for it doth it not Seperative nor dissipative by discovering of parts but by an intimate union of the dissolver & the dissolved being never Separable. Hucusque mea experientia.[101] But 5ly I had of the [mercury] of the Sophy given me by an Adeptus of the same wherewith I saw multiplication of the Stone with mine own Eyes & this of mine 7 Aquilarum aut 9m[10102] is undoubtedly the same & hath all the properties of that[.] Thus worthy Sir you have a true key into those Closets which I have been labouring to unlock these 7 years. My openess to your self is seriously because I judg your intents sincere in the prosecution of Natures designe & therefor I have not been horrid in Metaphors but would be understood ad literam[.] by your next I shall give you the way to use /150/ this [mercury] in the dissolving of mettals & how to congeale it so as with your Eyes to see ⁂ [gold] out of its bowels also how to dissolve ⁂ [gold] in it which to your selfe only I shall impart by which you shall see the vanity of them who seeke transmutation & yet refuse [mercury] vulgar not only for its forme but also for its matter not considering that if [mercury] vulgar may be [*sic*] a proper agent may be turned into [mercury] digested it may by the same consequence be turned into Mercurius Sapientum[103] which is ⁂ [gold] indigested[.] Materiam inquit natura tibi do ad manum, formam tu tibi ipsi compares, non dico substantialem, nedum accidentalem,[11] sed vim igneam ad urendum.[104] I shall teach you how to make by this [mercury] the [mercury] of [copper] which is perpetually greene[.]

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[100] 'The water is virtually from nothing, and yet the solar fruit is dissolved in it as ice in warm water' (Sendivogius, *Novum lumen*, in J. J. Manget, *Bibliotheca chemica curiosa* 2 vols (Geneva, 1702), ii, 474).

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[101] 'So far my experience.'

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[102] 'of seven or nine eagles'.

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[103] 'mercury of the wise'.

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[104] '"I give you the matter readily," says Nature; "you should find the form for yourself – I do not mean the substantial form, still less the accidental form, but rather a burning, fiery force."'

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Honorable Sir I account these things in your breast to be tanquam in arca sigillata[.][105] Therefor I do not praeingage Secrecy confiding that it is your intimate genious so to be. I scorn venality of Natures Secrets (for which one thing Glauber is nauseous to me) which makes the Earl &[12] Farrar his Parasite to revile me basely[.][106] I never wanted for necessity but though I did I would not sell Farrar a Small Secret for any prize[.] where I finde worth (which I value by sincerity) there you shall finde me open without the least face of sordid base respects[.] I value none by greatness for I blesse God where they possesse a manour I possesse a Secret which is to me more cordially Satisfying than any outward wealth. And now I am come hither we will begin with the Poët Sicelides Musae paulò majora canamus[.][107] Since my beginning of this Letter God hath been Exceedingly gracious to me in my Studys so that now though I have lately bought & got calcined at the Glassehouse ¾ of 100 pounds[13] of Tarter & elixated it & drawne Oyles Aromatical yet now I neglected all for ε'ὑρηκα [*sic*].[108] I have found tho not the Alkahest (for at present the search of it lyes Subtus Scamnum)[109] yet one of the great Arcanum & that not notionally but Semel, sed saepius feci,[110] I have reiterated my Experiments & that is the ☿ vitae, the glory of Paracelsus the Apex & Culmen ad vitam longam[111] to use Helmonts own words that which omnem morborum nervum penitus absolvit.[112] And the fundamentals of it are these[:] I make my ☿ as I have told you which Paracelsus calls his ☿ essentificatus & I extract the ☿ of ♁ per ♂ sine ♃ which I exalt to the colour of a Ruby I unite these two in an unseparable Bond & that the ☿ & ☿ imbrace one another thoro intimo[14] [113] whereby the ☿ never forsakes the ☿ nor the ☿ the ☿ but become one entire thing (cum nativa dulcedine fulgens)[114] yet Volatile & sine omni consortio miscellaneorum[115] This I sublime 6. or 7.

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[105] 'as if in a sealed chest'.

[106] This 'Earl' is likely to be Sir Kenelm Digby (1603–65), friend of Dr Farrar, who used the title 'Earl' or 'Count' during his German travels. See Newman and Principe, *Notebooks and Correspondence* (above, p. xvi).

[107] 'Let us Muses of Sicily [i.e., Sirens] sing of somewhat greater things' (Virgil, *Eclogues*, iv. 1).

[108] 'I have found it'.

[109] 'under the bench'.

[110] 'once, and also repeatedly I have made it'.

[111] 'the apex and summit of long life'.

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[112] 'wholly finishes off all the force of diseases'.

[113] 'an intimate marriage'.

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[114] 'conspicuous with native sweetness'.

☿♁♁☿

[115] 'without any participation of mixed things'.

times & this is (teste Paracelso) unica spes miseris unicum culmen et apex ad vitam longam[.][116] So also Helmont. Now I heartily blesse God who hath showed me by the fire the meaning of these two Philosophers & shewed me a Liquor which is the medium of so glorious a conjunction. ‹In which Conjunction› there is in one worke Mors Resuscitatio et Glorificatio rei.[117] Even a Liquor which in the twinckling of an Eye Exalts the [sulphur] & with it tingeth the [mercury] that they remaine unseperable. To this a Succedaneum /151/ is the [sulphur] of [mercury] purified & united to [mercury] vulgar never more to be seperated. the first is [mercury] vitae Stibii proles integri,[118] the other Tinctura Lili etiam alis[15] [119] which are placed in Helmonts index of the Arcana Paracelsi[.][120] And thus Honourable Sir God hath given me to understand how to answer your question concerning the [sulphur] of [antimony] mentioned by Helmont in his Tractate de Herbis Verbis Lapidibus &ca in these words: Extrahe [sulphur] [antimony] &ca.[121] This is it which God by the fire hath taught me viz that this [sulphur] of [antimony] (which I extract in a great quantity) by the meanes of a certain Liquor is (thoro inviolabili)[16] [122] united with common [mercury] which he there calls Cinaber which then never are to be divided So that being sublimed 6. or 7. times it becomes an admirable medicine of a perpetual vertue & now what light I have given both to Helmont & Paracelsus your selfe will see when God[17] shall reveale these things unto you. The diseases which are vanquished by these medicines is (tota morborum cohors)[123] to use Helmonds [*sic*] own words for you have now [mercury] & [sulphur] spoiled of all virulency of Salivation nausea purging by laxative Virulency only working per Diapnaeam[124] & very somniferous with a most desirable quicknesse & protractive of Old age Espetially when the [sulphur] is marryed to its own [mercury] which is then proles stibii integri[.][125] I do not here annexe the processe (Honourable Sir) of it for I am now about it & have not perfected it being hindred by the unfortunate breaking of a

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[116] '(by the testimony of Paracelsus) the unique hope of the wretched, the unique summit and apex of long life.'

[117] 'death, revival, and glorification of the thing.'

[118] 'mercury of life, the offspring of the whole of antimony'.

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[119] 'tincture of Lili, also antimonial'.

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[120] Helmont, *Ortus medicinae*, p. 790.

[121] 'Extract the Sulphur of antimony'. Starkey cites Helmont: 'In verbis, herbis, et lapidibus est magna virtus' (*Ortus medicinae*, p. 577).

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[122] 'in inviolable marriage'.

♃♁

[123] 'the whole retinue of diseases'.

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[124] 'by sweat'.

☿♃

[125] 'the offspring of the whole of antimony'.

♃☿

glasse of that same medicine in which were about 30 ounces of it which had cost me at least 10 Li. Sterling in all my Expences about it so that all was lost save a litle of the Grosser at the Bottom (for then I was in dissolving it yet that which was left I found at all tryals unseparable & noble[).] I tooke of it neare 20 grains without any sensible motion save only a very Sound Sleepe which I know not that I ever had the like & I am since better than ever I know I was (save when I took of the Philosophers Elixir) which was given me by an Adeptus yet I hardly allow my selfe natures time for rest. But for the union which is a wonderfull mistery I take great pleasure to see it & therefor I have reiterated it 3. or 4 times in which union is this notable first that the [mercury] being first praecipitated to a yellow Colour & edulcorated & the [sulphur] being of a mighty red do joyne with such an Orgeticall appetite that I know hardly the like operation stirring up a most mighty ferment & in about an hour being agitated & in a Small heat they worke themselves into a most subtle milk white substance as white as snow And from that hour are forever inseperable & are then cohobated with a Spirit which I know till they be very soundly inverted inside the out & vice versa which are then freed from all foetor & corrosion with [spirit of wine] till they receive a native total sweetness & then they fly together (absque omni Consortio)[18] [126] only if you have not well proportioned your matter in marriage what is not united will ascend like a small dew in the forme of quick [mercury] the rest being 6 times sublimed begin to grow of a deepe yellow the deserved Crowne of a /152/ painfull Chymist. Honoured Sir So soone as I have of this Medicine triumphantly prepared which I hope will be by the next you shall have part of it[.] my experiments hop lamely like limping Vulcan because of my strange defeatments in a strange place. So that I cannot conveniently prosecute but one thing at once. I have in great measure willingly retireding [*sic*] my Self from practice which I find so to retard & destroy my proceedings in search of the Arcana which I am most sick after & yet from one whom I honour & have in so deare esteeme I cannot detaine what I have made (though it be but a naked child yet it is of an Heroical offspring[).] I have sent you as an acknowledgment of my best respect to you a medecine unripe yet not raw for union hath taken it away it is indeed the [sulphur] of [antimony] & [mercury] Embracing each other in everlasteing armes[.] It is without any salivating laxative nauseous quality, the Master of infection & I hope its virtue is not limited from the reines Sir for other medicines I seeke now for none save only Arcana & Elixiria & the like. This is but once sublimed yet very noble[.] I take it dayly my selfe with great benefit the Dose 6. grains. it is the true Cinabar of Helmont[.] if it were 7 times sublimed & dulcorated with [spirit of wine] as he teacheth for his Aurum Horizontale it would be yellow & Saccharine[.] it hath a kinde of sweetness. Now in farewell but if it were cohobated 5 times with Aqua Regia & then 10 times with Aqua vitae & then 6 times sublime it set the Elixir of the Philosophers a side & I would dare nature to excell it with any Medicine[.] I know what I do speake for haveing found the Center I can easily view

[126] 'without any association [of other substances]'.

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the Circumference yet this Medicine as it is I have given & taken with wonderfull succesee it is to be taken in a morning or at Evening or both in about a spoon full of wine[.] And for the Morbilli it is that in which I ‹may› dare confide. Now Sir as touching the Roses I thinke the wood[19] ferment will hardly distill or if it do the Gas sulphuris[127] will take it out of the Oyle by warming the[20] Liquor with the Oyl in a glasse half empty & then infusing the glasse with the Gas & stopping the Glass with the hand & agitating it a while the Odour of the Vessel will vanish & the Aroma be advanced else my judgment quite failes me[.] I have sent you of Daucus common lb ii[,] of Daucus Creticus iii [3 ounces][21] & trying both you may resolve which doth you most good there being 2 sorts & one Exceedingly dearer than another I send you not lb ii but shall when you please & you [tell me?] of what sort you shall finde best[.][22] I have sent lb i of Colophonium & Virginis Wax none was to be got good by this opportunity I was loath to send you bad[.] Sir as touching the Aroph upon perusing Paracelsus I incline to Extract it out of Radix Satyrionis[128] in the same method with the former if it Excell that which I imagined, found out & made, it will be very good but I perceive he intends that Root, if Helmont so understood him I know not. As touching Sal Tartari Volatilis I have given you my judgment Sincerely that out of pure spirit of wine, or wine[23] it may be made very good /153/ but by Oyles most Excellently which if they be essential will not make a Sapo but by being circulated in circulating glasse of this shape

(Such as I have got made me at the white glasse house) both the Oyl & the salt will become one Essential Salt Volatile, but a Corporal Oyl not distilled will make a Sapo, which[24] by distillation & Cohobation all that is saline will come over in Liquor of an Excellent Virtue. But Honoured Sir (if you once command 2 or 3 good Arcanums) you are happy[;] then may you make other things an Otium & not a Negotium as I now God willing purpose to do & I veryly believe that my Medicine inclosed will (renes consolari)[129] beyond any particular thing whatever & if you please to accept this naked brat when he shall be clothed with richer qualifications proceeding from more perfect operations you shall then be saluted with a present of it which may be worth your acceptance. And shall in

[127] 'gas of sulphur'.
☿♤♁☿∨
[128] 'Root of Satyrion'.
ʒ
[129] 'relieve the kidneys'.

meane time firmly obleige him more deeply who is already yours beyond what he can Expresse or performe.

By you to be commanded to the utmost of
my abilitys
G.S.

BOYLE to JOHN MALLET[130] November 1651

From the original in Boyle's early hand in the British Library, Harleian MS 7003, fols 179–80. Fol/2. Subscription spaced so that the signature is at the bottom of the page. There is a transcript by Birch in British Library Add. MS 4162, fols 21–4.
Not previously printed.

Sir

Your never taking notice in Your Letters of the receipt of any of mine, added to my being necessitated (by the Distance I live at from any Post-house,) to send thither by such as may sometimes be like enough to loose the Letter to keepe the Postage; makes me suspect that Fortune hath kept me from being Troublesome, by making me appear Ingratefull. Which certainely in the Case, I can but barely Appeare: since Interest, that perverts others to Ingratitude, would it selfe dissuade me from such an Act of that Vice, as a Silence that robs of the Happynesse of Your Answers. Which since a teadious Epistle I ventur'd to trouble You with 5 weekes since;[131] I have been kept from solliciting (tho not from either Needing or Desiring) by a violent[1] & sudden fitt of Sicknesse, which unfitted me to handle a Pen till God's Blessing upon a Strange Remedy of a Great Chymist of my Acquaintance[2] restor'd me to Health without the wonted Martyrdome of Physicke.[132] If You have received the Long Letter I last sent you, & in it my Acknowledgments of the Civilitys of Your's, I shall not now need againe to mention Complements, which I am as unfit to owne as unable to returne; but least it should be Your Hapynesse to have scap't that Scribble, I shall in this, omitting all the Ceremoniall part, not scruple to re-mention some of the Responsory passages of it: & tell You that I am extreamely

[130] John Mallet (c. 1623–86), son of Sir Thomas Mallet (1582–1665), judge. John Mallet was knighted in 1665, and became MP and recorder for Bridgewater. For the Mallet family see A. Malet, *Notices of an English Branch of the Malet Family* (London, 1885).

[131] The letter mentioned here of c. Oct. 1651 is not extant.

[132] The 'Great Chymist' is probably George Starkey, for whom see above, p. 90n.

Glad, to learne Your profess'd Engagednesse to the Scripture; & not a little Proud to be told my Perswasions have not been unconducing to Your settling on that heavenly Employment: both as Your Abilitys will enable You so to /fol. 179v/ credite that Divine Study; that I shall not meanely serve it, by bringing it such a Votary; & as that heav'nly Study will so richly recompence Your Applications to it, that I dare looke upon my having contributed to Your Devotednesse to it, as the highest obligation that so Virtuous a Person as You, could have receiv'd from so uselesse a Creature as I. And since You begin so much to[3] rellish Studyes of that Nature; I shall shortly, God willing, venture to present You with some further Inducements (which I therefore now forbeare to mention;) that together with other Reflections, I was once drawing up in an Exercitation concerning the Scripture: wherein tho I feare I have been farre enough from righting my Theame; yet that imperfect Essay hath had the Lucke of so favorable a Reception amongst some Persons of the eminentest Piety, & others of equall Parts;[133] that I am importunately urg'd to finish it; which yet I despaire of being able to do, till my (suddenly design'd) Retirement into Your parts, restore me to undistracted Howres & Thoughts. But in order to the Understanding of the Bible, hearing of a very learned Amsterdam Jew's Arrivall at London;[134] I procur'd divers Conferences with him, to perfitt my selfe in the Holy Tongue; & informe my selfe of the true Tenents & Rites of the Moderne Jewes: whose Religion tho it be very unlikely to make Philosophers or Able Christians, Proselytes; yet I much feare that if it be, (as 'tis expected 'twill be) tolerated here, it may seduce many of those numerous Unprincipled (& consequently) Unstable Soules, who having never been solidly or settledly grounded in the Truth, are equally obnoxious to all sorts of Errors: specially in a Time & Country, where that Profane Thing call'd Learning is so discountenanc'd, at the same time when those Adversarys are admitted; who without it will hardly be confuted. Unlesse by some such way, as a Fanaticall Fellow lately us'd to silence my Rabbi: who told me that a while since, ‹hearing› there were in London some new Pretenders to the Gift of Tongues; /fol. 180/ he went to visit them; & asking one of them whither he could speake Hebrew, upon an Affirmative Answer, he desir'd to heare him utter a few Words in that Language; but when the Fanaticke had spoken an Extemporary Gibberish, as little understood by the Hearers as by himselfe; the Jew told him flatly that that was not Hebrew; which the other resolutely affirming it to be; when Rab assur'd him he was a borne Hebrew, & spoke that which Moses & Abraham us'd to speake; O, replyes the Fanaticke but my Hebrew is better & Ancienter then Your's, for I speake the Hebrew that Adam spoake in the Garden.'[135] I tell You so triviall a Story, to lett You see to what a Height of

[133] It is likely that Boyle refers to his *Style of the Scriptures* (1661). The content of this and later letters to Mallet suggests that the 'Private Friend' for whom Boyle states that the treatise was written could conceivably have been Mallet. See *Works*, vol. 2, p. xxv.

[134] The identity of this figure is unclear.

[135] The identity of the 'Fanaticke' is not known.

Madnesse the giddy Presumption of fond Man may carry him: & what strange Absurditys the Impudence of some, blusheth not to entitle the Spirit to. As for Publicke Intelligence, the Compleatnesse & entirenesse of the late[4] Successes have so confin'd Newes to what passeth within the Walls of Westminster, that I could at present but Transcribe, or at best, but Anticipate, Diurnalls. What our new Representative will prove, or whither we shall have any, I dare not pretend to conjecture: especially in Blacke & White;[136] only I shall not scruple to confesse that my Hopes & Feares have very peculiar Motives; & that the Clouds from which I expect either fertile Showres or Boisterous Stormes, are yet in their invisible & uncondensed Vapors. And as for our Intellectuall Concernes; I do with some confidence expect a Revolution, whereby Divinity will be much a Looser, & Reall Philosophy flourish, perhaps beyond men's Hopes. But I despaire not of giving You ere long a more particular Account of these Guesses at Poynington;[137] from which, since I was at this Distance, I am not sorry to find You were so long absent: because I hope it will make You the more Constant to it at Your Returne thither: which I so much & justly wish, that I dare assure You, Sir, I cannot but regrett London it selfe for the West, as long as Mr Mallet is in the latter; tho I must confesse that when I visit the former 'tis deepe Divines, true Philosophers, brave Gallants & Faire Ladys, that share my Howres amongst them. /fol. 180v/ If the Eagerness of my Wishes could contribute anything to their Accomplishment, I should be quickly in a Condition to be my selfe the Bearer of this Letter; but for feare[5] the unwelcome Necessity of my Affaires, should detaine me yet a while from so much Happynesse; as my Interest prompts me to embrace with joy your obliging Proffer; so my Justice leads me to beseech You not to thinke me so little sensible of my owne Defects & Happynesse, as, (in spite of your Complements) to consent to a Paper-correspondency, as a Grant, but as a Request: & tho I am here diverted as well as You (were at the writing of Your Last) by the Marriage of some of my Young Friends, whose Jollity makes me steale from Sleepe the moments this Scribble spends me;[138] yet really, Sir, Businesse it selfe, much lesse Mirth, cannot so farre distract me, as not to leave my thoughts very dispos'd & free, both to welcome any Favors of Your Pen, & to returne them the due Acknowledgments of him that is without all Complement,

Sir
Your most faythfull most obliged
& most humble servant
Robert Boyle.

Twitnham (neere London)
thisof November 1651

[136] The Rump Parliament had voted to dissolve itself and to hold fresh elections on 23 Sept. 1653; this was debated from early Oct. until 18 Nov., when a deadline for dissolution was set; see Blair Worden, *The Rump Parliament* (Cambridge, 1974), pp. 265–7.

[137] Poynington, now known as Pointington, in Somerset, where the Mallets lived.

[138] It is not clear what marriage is here referred to.

I shall beg to be nam'd a very humble servant to Your noble Father & Mother; & to your owne faire Lady.[6139]

If You see my Lady Bristoll or any of that Family, I shall beseech You to present my humble service to them.[140]

Endorsed on fol. 180v: '27 August, 1724'.

BOYLE to LADY RANELAGH, 13 May 1648

BOYLE to LADY ELIZABETH HUSSEY, 6 June 1648

PETTY to BOYLE, 21 June 1648

BOYLE to COUNTESS OF MONMOUTH, 7 July 1648

BOYLE to [LADY RANELAGH], 13 Nov. [1648?]

BOYLE to LADY RANELAGH, 2 Aug. 1649

BOYLE to LADY RANELAGH, 2 Aug. 1649

BOYLE to UNKNOWN CORRESPONDENT(S), 15 Nov. 1649

BOYLE to [BROGHILL], 20 Dec. 1649

BOYLE to [DOWAGER COUNTESS OF BARRYMORE], 21 Dec. 1649

BOYLE to HARTLIB, 15 July 1650

STARKEY to BOYLE, after 19 Apr. 1651

STARKEY to BOYLE, after 19 Apr. 1651

STARKEY to BOYLE, after 19 Apr. 1651

STARKEY to BOYLE, after 19 Apr. 1651

STARKEY to BOYLE, after 19 Apr. 1651

STARKEY to BOYLE, after 19 Apr. 1651

BOYLE to MALLET, Nov. 1651

BOYLE to MALLET, Nov. 1651

[a] The Latin may be loosely translated: '(of more trivial things) so that if the individual things do not help, the aggregate may be of use.'

[b] i.e., soap.

[c] i.e., ambergris.

[d] A later passage suggests that this 'volatile tartar' was a substance alluded to by the Flemish natural philosopher and iatrochemist Joan Baptista van Helmont (1579–1644), who greatly influenced Starkey.

[*] *All this was done in two dayes & nights*. [written in left margin.]

[139] For Mallet's father see above, p. 103n. His mother was Jane, daughter of Francis Mills, and his wife was Florentia, daughter of John Wyndham; see Malet, *Malet Family*, pp. 59, 61.

[140] This is presumably a reference to Beatrice (1574–1658), wife of John Digby (1586–1653), 1st Earl of Bristol.

— 1652 —

Lost letters dating from 1652 are as follows:

Wotton's list (see above, p. xxvii) includes as no. 354: 'Mr. Fenton 1652'. This is probably Sir William Fenton, Boyle's uncle, who served under Broghill in Ireland in the 1640s. See Kathleen M. Lynch, *Roger Boyle, First Earl of Orrery* (Knoxville, 1965), pp. 52, 63, 73.

Two letters to Boyle from the second Earl of Cork are recorded in the second Earl's diary (above, p. xxvii–xxviii), dated 29 January and 10 March 1652, the former 'about his Bandon house'. Bandon was the model town established in County Cork by the first Earl of Cork c. 1608; Boyle and other siblings evidently had property there.

Lost letters referred to in surviving letters are as follows:

Two letters from Boyle to Starkey, dated 4–16 January 1652 (below, pp. 111 and 117).

Another letter from Boyle to Starkey, dated 17–26 January 1652 (below, p. 118).

Another letter from Boyle to Starkey, dated between 27 January and 3 February (below, p. 129).

A letter from Mallet to Boyle, dated before 23 March 1652 (below, p. 132).

STARKEY to BOYLE — 3 January 1652

From the original in BL 5, fols 129–30. Fol/2.
Not previously printed.

Tuas (amicorum Cordatissime), jamjam receptas, legi perlegi, relegissemque, nisi Respondendi aviditas tempus mihi anticiparet, Crederes si dicerem quanto fuerit mihi solatio lineas tuas accepisse?[a] Credas sane utut libet, at pol fuerunt

I have read your letters that I already received, wisest friend, I have throughly read them and would have reread them except that my eagerness to respond left insufficient time.[a]

[a] Boyle's known letters to Starkey, no longer extant, are those of 29 Mar. and 19 Apr. 1651. For Starkey see above, p. 90.

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Gratissimae. Doleo quoque, dedignorque meritò tantam in me ignaviam, quod pluribus te literis non onerarim, cum illas te expetisse per tuas ad Magistrum Hartlibium intellexerim, at sane veniam deprecor, ex quò humanitatem ‹vix› Credebam, inutili Garritu te in aliis occupatissimum, detinere, Iam verò, ut si fieri posset, te totum Chartulis onerem, Tediosam Epistolam, eamque rudem nec benè politam mittere decrevi, ideoque (quoniam vix ultra horae unius spatium mihi ad respondendum supersit) latino barmarismate Chartam Commaculabo, Estque Schedula haec tota, tuae (non dicam Curiositati, at verum naturalium Cognitionis appetitui) satisfaciendo dicata. Scripseram in priori Epistolâ me Aurum Volatile attentasse & perfecisse, cujus Encomium hoc meritò assignavi, quod sit Creatura nobilis, nulli nisi Elixeri magno Virtute Cedens, jam tandem particulariori ejus descriptione te a tuis negotiis avocabo.[a] Scias proinde, quod tantae sit efficaciae, quod quarta pars Grani sit dosis sufficiens, attamen in Stomacho neutiquam digeri valet, ideo vomitum Cit tali cum operatione Citra nauseam quod similem nihil unquam vidi nec tale quid unquam audivi. Cujus unicâ dosi (antea aeger, ac quotidiè malâ detentus valetudine) penitus Convalui, sic quod nunquam meliori fruebar Valetudine, lenissimè secessum movet, at praecipuè Vomitum, cujus inexpectato effectu, ipse primo attonitus eram, donec tandem libro Alexandri Van Suchten Comparato,[b] didici, quod Hoc ♁ sive oleum Coagulatum in Stomacho

Would you believe it if I said how much consolation I got from receiving your letters? Believe as you will, but by heaven, they were very much appreciated. I am sorry, however, and rightly scorn the great unworthiness in me, that I have not burdened you with more letters, since I understood from yours to Master Hartlib that you desired them, but truly I beg forgiveness, since I ‹hardly› believed that kindness would detain you (who are very busy on other accounts) with my useless chatter. But now, even though it could happen that I load you down with paper, I have decided to send you a tedious epistle, crude and little polished; so (since hardly an hour remains to respond), I will dirty the page with barbarous Latin. This entire epistle is propounded for satisfying – I will not say your curiosity, but – your appetite for understanding nature. I wrote in an earlier letter that I had attained and perfected the volatile gold, to which I have justly assigned this encomium, that it is a noble creation, yielding in virtue to none except the great elixir.[a] Now finally I shall divert you from your business with a more particular description of it. Know, then, that it is of such efficacy that the fourth part of a grain is a sufficient dose, but by no means can it be digested in the stomach. Therefore it causes vomiting, and with such a non-nauseating operation that I have never seen the like, nor have I heard of any such. With one dose of this (having been sick earlier, and detained daily by bad health) I was fully cured so that I never enjoyed better health; it easily promotes excretion, but especially vomiting, by which unexpected effect I was at first astonished, until finally having consulted Alexander von Suchten's book,[b] I learned that this sulphur or coagulated oil cannot be digested in the stomach, and

[a] Starkey possibly refers to his letter of [after] 19 May 1651, or to another now lost.

[b] The reference is to Alexander von Suchten (c. 1520–c. 1590), a Prussian Paracelsian who wrote the *Antimonii mysteria gemina* (1604), to which book Starkey here refers.

digeri nequit, additque quod sit purgatio Specifica Balsami nostri, quâ Corpus penitus liberatur a fumo omnium malevolarum Stellarum, quo remedio Caelo ipsi medicus valet resistere. Tentavi in hoc ♁ multa praeclara, ac primò quidem separavi Salem ab eo quocum praeparatum Erat, et dedit mihi lac albissimum, Cosmeticum singulare, quod magno pretio a quibusdam fucipolis ambitur, residuum ♁ omnimodè Edulcoratum imposui retortae, & levi Calore liquescebat ad ignem modicum, fundebaturque instar aquae limpentis. Majori igne flavebat ac Sublimabatur, Sublimatum dulce ascendebat in ore liquabile, cujus octava Grani pars dosis erat. Tentabam in Fratre meo, alioque juvene, quibuscum Grani pars 4a optimè successit, Eventu optabili.[a] In quo mirum hoc Elucescit, quod nulla medicina ♁ alis eadem quantitate operabitur. Deinde quòd Regulus ex quo Extractum est hoc ♁ nullâ dosi sit vomitivus. /fol. 129v/ Tertiò, quod Sublimatum ♁ cum Sale suo, ferrum politum ne tantillum denigret quod omnibus aliis Sublimationibus acribus est Genuinum. Quartò, quod residua pars reguli sit prorsus metallica & Scintillans. Quintò ♁ liquatum, est insignitèr ponderosum, frangiturque scintillis quasi metallinis, instar marchasitae gloriosissimae. Tandem, oleum ex hoc rubicundissimum tentaturus sum, at expecto Tractatum Alexandri Van Suchten, de usu hujus Arcani.[b] Quod verum esse ejus Arcanum Extra dubium novi certòque scio, mirorque infortunatam meam hactenus ejus Disquisitionem. Gratulor sane fatis quod a tedio tanto sim Excusatus, Eoque magis rem ipsam in pretio habeo,

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he adds that it is a specific purgation of our balsam, by which the body is liberated fully from the fume of all bad stars, with which remedy the physician can resist the heavens themselves. I have attempted many excellent things with this sulphur. First, I separated from it the salt with which it had been prepared, and it gave me a very white milk, a singular cosmetic, which is sought out at a high price by certain cosmeticians. The remaining sulphur, wholly edulcorated, I put into a retort, and it liquefied with a slight heat on a small fire, and was melted like limpid water. With a greater fire it turned yellow and was sublimed, and the sweet sublimate ascended in a form that dissolves in the mouth, the eighth part of a grain forming a dose. I tried it on my brother, and on another youth, to whom the fourth part of a grain succeeded very well with the desired effect.[a] In which this wonder shines forth, that no antimonial medicine will be operative in the same amount. Second, that the regulus from which this sulphur is extracted is vomitive in no dose. /fol. 129v/ Third, that the sulphur, sublimed with its salt, does not blacken polished iron at all, which is natural in all other sharp sublimations. Fourth, that the remaining part of the regulus is truly metallic and brilliant. Fifth, the liquefied sulphur is strikingly heavy, and is broken with metalline sparklings, like the most glorious marchasite. Finally, I am going to attempt [to produce] a very red oil from this, but I await the tract of Alexander van Suchten on the use of this arcanum.[b] I know and certainly understand what the true arcanum of it is, and I marvel at my up-to-now unfortunate treatment of it. Yet I surely thank the Fates that I

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[a] Starkey's brother was Samuel (b. 1635); see Newman, *Gehennical Fire* (above, p. 48), pp. 15, 282. The youth in question has not been traced.

[b] This work has not been identified.

quod sit operativa, tamque potentèr agat, Sine ullâ virulenti qualitate vel minimâ, cum Vomitiva Ejus qualitas invertitur, quantum inde Exurget medicamen jucundâ cum Speculatione Contemplor. Laudano tuo Glaciem nil nocere posse certò Confido. Fraternitatem tuam de quâ scripsisti, non injucundè Saluto, cujus fraternitatis leges si scirem, unus illorum fierem, non Ceterorum Fratrum, at tui gratia, ipse namque Corniculae instar (Cras) semper clamo, at Spero (Cras meum) in hodie tandem mutatum iri.[a] Condoleo oculos tuos, pedesque,[b] unius curam Laudano tuo jamjam praeparando alterius ✳ ♂ reververatae cum Salisp: parte triplici relinquo, melius in presens in promptu non habeo. Aurum meum Volatile, brevi in Aurum purissimum scio reducere, utinam in ☿um, quod an sit possibile hactenus non sum Expertum, 7mâ illud Sublimatione parare determinavi, nec melius medicamen sub Lunarem Globum mihi Spondeo. Cum Ente Veneris miscere decreveram, at illud omittam, cum triplo virtuosiùs sit, opereturque triplo minori pondere, nec vomitum Ciendi virtutem in Eo Vitupero, at eò magis ‹ob› illam amplector, cum vomitus aliquando sit in re medicâ non innecessarius, possitque haec qualitas inverti, fietque tum Thesaurus omni Thesauro pretiosor. Gaudeo quoque (sic me juvet Deus) non plus me rem ipsam invenisse, quam quod tibi amicorum dignissimo possim me gratum Exhibere. Chartis rem non committam, at oculis

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am excused from such tedium, and I hold the thing itself to be all the more valuable in that it is operative and acts so potently, without any virulent quality or very little: I contemplate with pleasant speculation how well the medicine will cure when its emetic quality is inverted. I am confident that the ice can do no harm to your laudanum. I gladly salute your fraternity of which you have written; if I knew the rules of the fraternity, I would become one of those brothers, not on account of the others, but on account of you, for I always cry 'tomorrow' like a little crow, but I hope finally that 'my tomorrow' will be changed into today.[a] I am sorry about your eyes and feet.[b] I leave the cure of the one to your laudanum, already in preparation, and the cure of the other to *stella martis* reverberated with a triple quantity of saltpetre. At the moment I have nothing better ready. I know how to reduce my volatile gold quickly into very pure gold – would that it were into mercury – whether this be possible I have not yet tried. I have decided to prepare it with a seventh sublimation, and I do not promise myself any better medicine below the sphere of the moon. I had resolved to mix it with *Ens veneris*, but I will omit that since it is thrice as powerful, and it will work with one-third the weight, and I do not reject its power of inducing a vomit, but on account of that I embrace it the more, since vomiting is sometimes necessary in medicine, and if this quality could be inverted, it would become a treasure more valued than any treasure. I am also happy (may God thus help me) to have found the thing for no other reason than that I could show my thanks to you, most worthy of friends. I will not commit the matter to paper, but will demonstrate it to your eyes. I further believe it to be a thing

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[a] The identity of this 'fraternity' is unclear. It is possible but unlikely that Starkey alludes to the groups of savants meeting as the Invisible College, for which see above, p. 42n.

[b] Starkey had treated Boyle for an attack of sickness in Nov. 1651; see Maddison, *Life*, p. 78.

demonstrabo, Credo quoque esse re quapiam (excepto Elixere) anteponendam. Vale Vir Honorandissime nunc & in Aeternum.

Jamesiis. Jan. 3. 1651. Tuus ut suus
Geo. Stirke.

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to be preferred above all else (save the Elixir). Good health most honoured man for now and for eternity!

St. James's, 3 January 1651. Yours as his own,
Geo. Stirke

For the Right Honorable / Mr. Robert Boyle Esquire
at his House in Stalbridge in Dorsetshire these dd

STARKEY to BOYLE 16 January 1652

From the original in BL 5, fols 131–2. Fol/2.
Not previously printed.

Tuas vir honorande, & Amicorum Integerrime, & Cordatissime hodie accepi, Certoque Confidas, quod nisi te ante hoc Tempus expectasse fecissent Heroinae quaedam tibi agnatae iterum iterumque tibi ante ultimas tuas acceptas molestias addidissem.[a] Jam autem quam Citò iterata opportunitas se offerre videtur, totum te serium, rebusque non levis momenti invigilantem; garrulâ verbositate distrahere, ne horam differre decrevi, quin Chartis te onerare pergerem, Imprimis verò, Excusatam velim novissimam Epistolam, in distractionum dialemmate

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I received your letter today, most honoured man, most virtuous and wise of friends. Have full confidence that I would have sent my pesterings your way before receiving your most recent letter, except that before this could happen certain heroines known to you made you wait again and again.[a] Now, however, as soon as a renewed opportunity seems to offer itself, I have resolved to distract you – you wholly serious and on the lookout for things of moment – with my garrulous verbosity, and not to delay one hour without proceeding to bother you with my letters. But first I would like my most recent letter to be excused, which was written amidst a dilemma of distractions, for I dirtied the paper when the hard-

[a] For these letters, see above, p. 107n. Presumably the letter to which Starkey refers is lost. From his use of the phrase later in the letter, it is clear that the 'heroines' Starkey refers to are Lady Ranelagh and Boyle's sister-in-law, Elizabeth (1613–91), Countess of Cork.

circumseptam, conscriptam. Siquidem intensissimè urgente tempestatis rigore, Visitante me Salamone Judeo, cum amico Consocio, nec ultra horae unius spatio mihi Concesso, Chartam Commaculavi, nec relegendi tempus obtinere potueram, vereor proinde, ni forte Calami lapsus plures depraehenderis,[a] At saltem lapsus Calami ut nec sani judicii, ità nec Erroris mentis Index est perpetuus. Ast nimium oblitus, maturè gratias mihi seriò agendas agnosco, quod mihi Servorum Indignissimo, furtim ab amico nobili, conscribere digneris. Nec minus ob insignem illam amoris immeriti Tesseram, tam longe missitatam, In quo ut insolubilem obligationem intueor, Sic Hyemis rigorem accuso, quo urgente, per tantum Intervalli, Artocreas tuum in Gas invisibile Conversum Est, unde patet modestiâ plenam fuisse illam tuam Excusationem, quâ de Ejus bonitate Conquestus Es, prae spiritualitate siquidem totum in aërem inter Eundem migravit. Eoque magis tuae obstrictum me benevolentiae fateor, quo infidi magis illi quorum Curae hoc tua bonitas Commisit. Hanc munificentiam rependendi ansâ mihi penitus ablatâ, suppetit aliquid saltem, quocum novitate te saltem rei curiosum faciam. Baccae quippe Rubentes a Nov-Angliâ allatae Cerasorum formae aemulae, saluberrimae, gustu acidae, opsonio faciendo aptissimae domi sunt, quas Conservatas, observantiae ergo honori tuo offerre Statui, quibus siquid bonitatis desit, facilè hunc defectum supplebit rei raritas.[b] At sanè Stomacho nil gratius, hisce trufis. His

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ness of the weather was bearing down most intensely, and while Solomon the Jew and his associate friend were visiting me, and I had not more than the space of an hour conceded to me, nor could I obtain the time for rereading it.[a] Thus I am afraid lest you abhor the many slips of my pen, but at least a slip of the pen, as it is not a lapse of sound judgment, is not a permanent indicator of mental error. But I forget too much – I acknowledge seriously and opportunely my thanks for your deigning to write to me, the most unworthy of servants, from a noble friend in secret. Nor less on account of that signal token of your unmerited love repeatedly sent for a long time, insofar as I consider it an indissoluble obligation {to write letters to you}. I blame the cold of winter acting for so long a time that your pie was converted into invisible gas, whence it appears that your excuse in which you lamented its goodness was full of modesty, for on account of its spirituality the whole indeed turned by itself into air! I confess myself the more obliged to your benevolence by how much more unfaithful were those into whose care your goodness entrusted this pie. Since the opportunity of returning this munificence has been quite taken from me, something at least is at hand by means of whose novelty I may at least make you curious. The red berries brought from New England, similar in shape to cherries, are very healthful, sour in taste, and are very good for making a condiment at home. Therefore I have decided to offer these preserved berries in observance of your honour, and if they should be at all deficient in goodness, their rarity will easily make up for this defect.[b] At any rate, nothing is better for

[a] Starkey's most recent letter was that of 3 Jan. 1652. 'Solomon the Jew' has not been identified.
[b] i.e., cranberries, presumably enclosed with the letter.

tamen jam tandem missis, ad ea quae tibi longe gratiora futura ominor tempestivè nunc Transeo. Et primo quidem non sine aliquali Triumpho deinceps scriptitabo, quia jubente Deo aperuëre sese mihi aliquot medicinales Thesauri. Nec surda mihi Eminus Colloquia dedignatur ipse liquor Alkahest Cujus jam quotidie /fol. 131v/ nova specto vestigia. At quid tibi spes meas recenserem. Addam quae feci, quaeque jam nunc quotidiè sum factiturus. Solem de quo novissimâ Epistolâ, volatilem per multiplicem Examinavi Analysin, in quo stupenda quavis horâ ferè video. Emeticam qualitatem Suppressi, non Convertendo in oleum, prout docet Suchten, at per Retortam traducendo igne acri in forma olei spissi instar mellis, ex eodemque praecipitando pulverem candidissimum lili ignis sustentivum, Sulphur Caeleste (si sic fari liceat) olentem vinum cui infunditur placidissimâ aciditate cum suavitate permixta beantem et per lenissimum reverberium (sic ut non fundatur) ad rubedinem Exaltatum.[a] Tandem favente Deo, totum Cinnabaris Helmontis Secretum mihi detexit, Cujus Explicationem Tibi brevibus absolvam.[b] Extrahitur ♁ ☿, quod funditur, nec visu a ♁ vulgari distinguitur. Lentissimo reverberio ♁ hoc Cinnabaris fit, nulli vermilioni Rubedine Cedens, Hucusque pervenit mea Experientia, caeterum nosti, & nisi fractâ retortâ operam perdidissem rem tibi perfectam inclusam jam misissem. Et scias Vir honorande, quod ♁ ex ♂is Stellâ sit perducibile ad idem

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the stomach than these trifles. Yet having finally sent on these things, I now seasonably pass to those things which I predict will be far more pleasing to you. First, and not without a certain sense of triumph, I will write continuously and in order, for some medicinal treasuries have opened themselves to me, with God's help. Nor does the alkahest itself scorn silent colloquia with me from afar, whose trail I see better every day. But why should I recount my hopes to you? Let me add what I have done, and what I am daily about to do. I have examined the volatile Sol described in my last letter by means of multiple analysis, and in it I see stupendous things at virtually every hour. I have suppressed its emetic quality, not by converting it into an oil as Suchten teaches, but by leading it through a retort with a sharp fire, in the form of a thick oil like honey, and then by precipitating a very white powder from the same, withstanding the fire of Lili, a celestial fragrant sulphur (if it be permitted so to speak), blessing the wine in which it is put with a very gentle acidity mixed with sweetness, and exalted to redness by means of a very mild reverberation (so that it does not melt).[a] Finally, with God supporting me, the whole secret of the cinnabar of van Helmont revealed itself to me, the explanation of which I will discharge to you in a few words.[b] The sulphur of antimony is extracted, then melted, and it is not distinguishable in appearance from vulgar sulphur. With a very gentle reverberation this sulphur becomes cinnabar, ceding nothing in redness to vermilion, and my experience proceeds thus far. You know the rest, and had I not lost the work by means of a broken retort, I would already have sent the perfected matter to you enclosed [in a letter]. Know, honored man, that the sulphur from

[a] For Alexander von Suchten see above, p. 108n. Starkey alludes to Suchten's *Antimonii mysteria gemina*, also referred to in the earlier letter.

[b] For J. B. van Helmont see above, p. 91n. His 'cinnabar' is described in *Ortus medicinae*, p. 577.

Arcanum cum ♀re ♂ii Simplicis, est enim utrumque ♀ Eodem artificio Eductum. Conveniuntque in hoc quod ♀, sit utrumque hujus virtutis, antequam a suo Consocio Volatili separetur, quod aquam trans vitrum cui vitrum immergitur, ictu oculi Conglaciabit in glaciem veram, etiam ad ignem. Differunt tamen bonitate haec ♀ra quantum differt perla orientalis a Scotica, quare ♀ Ex ☽â Stellatâ, est ponderosum instar auri, nullo igne nigratur, ne cum socio volatili junctum, quod alterum ♀ patietur, funditurque cum socio suo levi igne in Diaphanum sanguineum liquorem, alterum nigratur instar Carbonis. Schedula haec non dimidium Continere possit, quae vidi & feci hac in re, incarceravit me quippe Laboratorium, nec ante 12 horam somnus me invadere ausus est, fugitque trepidus ante lucem, Heu quantum in rebus inane! Faxit Deus ut in honorem sui nominis omnia dirigantur. Hodie me visitavit Comes Noviportensis[1] cum Heroinis Corke & Renala, quae tibi se Commendatas volunt, Comes Pembrookensis nuper per amicum quendam mihi sibique notum,[a] me amicissimè salutavit, Philosophus maximus Thomas Vaughan nuperrimè uxorem duxit,[b] Clerici cujusdam filiam, nullius fortunae, jamque tandem lapis Ejus Sophicus sat notus est, Imposuit quippe diversis avaris, auri sacrâ siti laborantibus ultra bis mille minis, quibus sub jurejurando taciturnitatis pro nummis secreta sua communicavit, jamque detectâ ejus fraude

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the star of Mars is capable of being led to the same arcanum as the sulphur of simple antimony, for each sulphur is drawn forth by means of the same artifice. And they agree in this – that each sulphur is of this virtue – before it is separated from its volatile comrade, in the blink of an eye it will (through glass) freeze into true ice the water in which a glass [containing it] is immersed, even if near the fire. Nevertheless, these sulphurs differ in goodness as much as an oriental pearl differs from a Scottish one, for the sulphur from stellate Luna is heavy like gold, is not blackened by any fire, not even joined with its volatile companion, which the other sulphur will allow; [the former] is melted with its comrade on a mild fire into a transparent blood-red liquor, while the other is blackened like coal. This page cannot hold half of what I have seen and done in this matter, for the laboratory has imprisoned me, nor has sleep dared to fall upon me before midnight, and fled, fearfully, before light – oh how much worthlessness in things! May God act so that all things may be directed to the honor of His name. Today the Earl of Newport visited me with the heroines Cork and Ranelagh, who wished to be commended to you. Count Pembroke recently greeted me in a very friendly fashion through a certain friend known to him and to me.[a] The very great philosopher Thomas Vaughan took a wife quite recently,[b] the daughter of a certain cleric, of no fortune, and now finally his sophic stone is well enough known. Indeed, he cheated various greedy people labouring under the sacred thirst for gold of more than two thousand minas, to whom he communicated his secrets for money under an oath of silence, and now,

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[a] Starkey refers to Mountjoy Blount (c. 1597–1666), 1st Earl of Newport, and to Philip Herbert (1621–69), 5th Earl of Pembroke. For the Countess of Cork see above, p. 111n.

[b] This is a reference to Thomas Vaughan (1622–66), alchemist and poet, who married in Sept. 1651. Starkey condemned both Vaughan and Glauber (see below, p. 115) as sellers of alchemical secrets, linking their work to vulgar profit motives.

immensum faetet. Glauberi Secretum Alkahesticum tripartitum a D: Morian hac septimana accepi, & ludicrum inveni; Monstrum, stupendum, et decumanum mendacium,[a] Hollandorum naves a nostris quotidiè Captitantur, naucleri quippe 50 simul hac Septimanâ (ut mihi relatum Est a Mro Duraeo) ad Ducem Cromwel sese applicarent, ut damna sua saltem mitigentur. Pax inter nos & illos firmo foedere brevi ineunda est.[b] ♁ Glaure Augurelli et helmontis novi, ejusque Extractionem, hisque totus insisto nec labori parco.[c] Oleum meum Rosarum arridet Confectori pigmentario maximè, at tandem sensi cum /fol. 132/ dolore quod peste Crumenae laboret, nec nisi sem-unciam simul Emere valet, Laudat tamen, oratque ne aliis vendam, spondetque se pretium pro posse aucturum, dicitque se quamprimum rigor hyemalis mitigatus fuerit, in Confectionibus eo usitaturum,[d] fatetur tamen Ingenuè se quondam Divitem,[2] jam verò pauperem factum ità quod vix sibi suppetant nummi ut necessaria Comparet, cumque aromata vendendo subsistentia sua quaeratur, opus est ut varietatem Emptoribus possit obtendere, si ergo plus emeret quam brevi venderet, indigeret nummis, & prae necessitate, vili pretio divendere Cogeretur, Nec sane scio an alio Emptori venderem, ex quo (licet in praesens inopinata haec frustratio tediosa sit, nam sub Certâ ejus spe, antequam

his fraud having been detected, he stinks hugely. I received the tripartite alkahestical secret of Glauber from Mr Moriaen this week, and I found it ludicrous, monstrous, stupefying and a tenfold lie.[a] The ships of the Dutch are daily captured by ours, and this week (as Mr Dury related to me) fifty sailors deserted to the leader Cromwell so that their punishment might be lessened. Peace between them and us will be briefly brought about with a firm treaty.[b] I know the sulphur of Glaure of Augurelli and Helmont and its extraction, and I wholly pursue these things and do not spare any labour.[c] My oil of roses pleases the cosmetics maker very much, but sadly I have finally realised that he labours under a plague of the purse, nor can he buy more than a half-ounce. Nonetheless, he praises it, prays that I do not sell it to others, promises to raise the price when he is able and says that as soon as the winter cold has abated, he will make use of it in his products.[d] He confesses ingenuously that he was once rich, yet is now made so poor that hardly enough money comes to him that he can buy his necessities, and since his subsistence is maintained by selling perfumes, it is necessary that he be able to spread out a variety for his buyers. Therefore, if he should buy more than he can sell in a brief time, he would be short of cash, and he would be forced of necessity to sell off his products at a low price. Nor do I really know whether I should have sold to another buyer (although at present this unexpected frustration is tedious, since

[a] Starkey refers to Johann Rudolph Glauber (1604–70), German alchemist, chemist and technologist. for Johannes Moriaen see p. 66n.

[b] The reference is to the first Dutch war of 1652–4, and to Oliver Cromwell (1599–1658). Evidently Starkey was in correspondence with John Dury, for whom see above, p. 56n.

[c] Starkey refers to Giovanni Aurelio Augurello (1451–1524), the author of a popular alchemical poem, *Chrysopoeia* (1515); Boyle knew the poem, and quoted from it in his *Sceptical Chymist*. See *Works*, vol. 2, p. 236.

[d] This figure has not been identified.

nummos recepissem, statim Calculo facto, tantum Experimentis dicavi, quantum ullo modo Comparare poteram, Rebus illo tempore quotidiè arridentibus mihi plusquam Enarrare possim), uno solo haec Aromata vendente, eoque notae ac famae bonae (utpote Reginae olim per annos 20 pigmentarius Erat) res et rarior, et majoris aestimationis Erit, nec ansa adulterandi dabitur (ne fortè ob adulterationem unam quaestum futurum in aeternum amittat, quod minatus sum) prout alitèr cum plures idem habent, venduntque, Certamen erit, quis plurimos Emptores alliciet, ideoque unus alio minoris vendet, et per Consequens adulterabit, sic tandem vilius fiet, minorisque pretii. His Inductus rationibus inquam vix Consultum fuit alium quaerere, sed potius offatim huic suppeditare quod sibi opus sit, Oleum Benzoin valde arridet, at ego Angli instar, nescius quando sat bona res, sit rectificare Contendens sine aquâ, Empyreumatis tantillum dedi cum Coloris mutatione, at tamen, ex eo quod nunc Est, ejus bonitas ut Ex ungue Leo sat patet, Comes Noviportentis,[3] & Heroinae illud oleum unicè hodiè prae [cun]ctis[4] odoribus laudarunt. Nuper Fratris tui Filia in Iliis plagam (ut vocant) morbum Endemicum passa, missus est mihi servus ultimâ Die Dominicâ nocte, & misi ♁is Aurei praeparati tantillum,[a] nec dubito successum, Abinde etenim nil audivi, quod alitèr fecissem nisi Convaluisset, per aliquot dies ‹male habuit›[5] ante miserant, additumque fuit quod si perseveraret morbus sequenti die mitterent, Cumque nil

with the hope of a certain outcome, before I received any money, having made a hasty calculation, I devoted as much to my experiments as I could procure by any means (since things at that time were everyday going my way more than I could relate) inasmuch as with only one seller, and he of good note and fame (since he was once the cosmetics maker to the Queen for twenty years), the thing will be both rarer and of greater estimation, nor will there be an opportunity for adulteration (lest on account of one adulteration it should lose its future profitability for ever, which I fear), just as otherwise when many have and sell the same thing, there will be a contest as to who will attract more buyers, and therefore one will sell at a lower price than another, and will consequently adulterate it; and thus it will finally become more common and of lower price. Induced by these reasons, I say, it was hardly prudent to seek out another, but rather to supply this one in bits according to his need. The oil of benzoin is quite pleasing, but I, like an Englishman, not knowing when a thing is good enough, trying to rectify it without water, produced a little empyreuma with a change of colour, but yet, from that which now exists, its goodness appears well enough like the lion from its claw. Count Newport and the heroines were praising that oil in particular today beyond all other odours. Recently, when your brother's daughter suffered a plague (as they say) in the intestines, an endemic illness, a servant was sent to me at night last Sunday, and I sent a little of the prepared golden sulphur.[a] Nor do I doubt its success, for I have heard nothing thence, which otherwise I should have done had she not got well, [for] she had been ill for some days before they sent to me, and it was added that if her

[a] This is probably a reference to one of the 2nd Earl of Cork's daughters, either Elizabeth (c. 1638–1725), Anne (d. 1671), or Henrietta (1645–81).

abinde audierim, colligo pro certo puellam Convaluisse. At quid tantâ te Garrulitate detineo, maturè mei recordatus finem faciam, jubeo te valere, & prout ipse te honore inviolabili persequor item si tu tui observantissimum amare pergas obligationibus reinvolveris

Nova mihi incumbunt Experimenta, & si crederem literas Die ‹Martii›[7] proximo missas ad te perventuras successu tibi significarem, nam totus tuus sum, nec magis Gaudeo (testem Deum appello) me quicquam Gaudio dignum reperiisse, quam quod ansa mihi data sit, ex tanto quod tibi debeo, tantillum (in grati animi arrham) persolvere. Vale.

Tibi ad Aras usque devotissimum
Geo. Stirkium.

Volitanti Calamo Jan. 16. eadem horâ quâ tuas accepi. 1651:

[8]Hodiè saturni ante Literarum sigillationem Artocreas tuum Ingens sanè ad manus venit, pro quo nescio quas reddendae sint gratiae, certè enim prae bonitate decuplo minus esse potuerat, & tamen servum tuum ultra quam potest persolvere, Centuplo obligasse, At ambitio tua tanta est ut exceptâ solâ animâ, me totum repetitis gratiis, tui juris facias, quamque indignum obligasti, sat scio sentioque. Hodie, dum urinae stalagma Examino, secundum illum Spiritum Duelech solventem,[a]

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illness continued they would send for me on the following day, and since I have heard nothing further thence, I gather for certain that the girl has convalesced. But how much I detain you with my garrulousness; recollecting myself, I will make an end opportunely. I enjoin you to be well and I attend you just as myself with inviolable honour since if you continue to love the one observant of you, you wrap him in further obligations.

New experiences have fallen my way, and if I believed that the letters sent to you last Tuesday would arrive successfully, I would declare them to you, for I am all yours, nor do I rejoice more (I call God as my witness) in having found something worthy than that an opportunity has been given me to pay back a small portion of the great debt that I owe you (as a pledge of a grateful soul). Farewell.

Most devoted to you, up to the altars.
Geo. Stirke.

With pen flying, 16 January 1651. In the same hour as I received yours.

Today, Saturday, before the sealing of my letter, your huge pie came safely into my hands, for which I do not know what thanks to give, for surely on account of its goodness it might have been ten times less and would yet have obligated your servant one hundred times more than he is able to recompense. And your partiality is so much that, my soul alone excepted, you make me wholly yours by right with repeated favours, and how much I, unworthy, am obliged, I know and fully feel. Today while I examine the stalagma of urine, according to that spirit dissolving Duelech,[a] and I have found the first coagulator, and I

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[a] Duelech was the Helmontian term for the concretion forming from urine and causing the stone. For Starkey's interest in urine, see Newman, *Gehennical Fire* (above, p. 48), p. 181ff.

primumque coagulatorem inveni, actuque utrumque jam habeo, et ad quid ulterius perducere valeam hactenus insudo, meque sollicitum faciam, At quid garrula mea loquacitas in Tomum Crescat,[a] Mr Hartlibius sibi se Commendatum Cupit, aitque se tibi oblaturum Gemmas, ac uniones, Librum puta de his tractantem, diu quaesitum, tandemque impetratum, ♃ meum Solare partim in ☉em verum, partìm in ☿um Currentem verti, qui mercurius ☽am vulgarem mihi in frigido dissolvit, reduxitque in ♃ Ceruleum, et ☿ vivum fluidumque. Vale. G. S.[8]

now have each *in actu*, and I am still striving to see to what further thing I am able to lead them, and I make myself apprehensive lest my garrulous loquacity grow to a volume. Mr Hartlib wishes to be commended to you and says that he will present gems and pearls to you, or at least a book treating these, long sought and finally obtained.[a] I have turned my solar sulphur partly into true Sol and partly into running mercury, which mercury dissolved vulgar Luna for me in the cold, and reduced it into cerulean sulphur and fluid, quick mercury. Farewell. G. S.

For the truly Honorable[9] Robert Boyle
Esquire at his house in stalbridge in Dorsetshire. these dd.
Postpayd

Seal: Octagonal. Broken in two. Apparently heraldic, depicting a lion rampant.

STARKEY to BOYLE — 26 January 1652

From the original in BL 5, fols 133–4. Fol/2.
Not previously printed.

Jamesiis Jan. 26. 1651.

Tuas jam nunc acceptas, gratissimas sane, (amicorum Integerrime ac Heros Honorande) cum insigni gaudio[1] legi, tibi quoque (quia garrulitate meâ refici te

St James's, 26 January 1651.

I received and read with great joy your most pleasing letter, which just arrived (most virtuous of friends and honoured hero), and (because you say that you are pleased by my

[a] This work has not been traced.

dicis) margine nullo Charactere pusillo, utramque paginam replebo,[a] Nova tibi affero, At quid nova si non grata, Grata proinde Spondeo, quidque grata si non tibi applicabilia, quare tuus cum sim totus, haec omnia tibi a me veluti Canali indigno confluxura promitto. Etenim in Sabbato quietis, & tamen insignitèr laboribus ludens, in pleno animae Jubili te jam nunc alloquor, Etenim laborum, studiorum, vigiliarum, anxietatumque, querentis misertus Deus, tandem mihi fores Naturae pandit, deditque mihi non Intellectum solum at et possessionem Immortalis illius Liquoris Ignisaquae dedit,[b] Et jam tandem Hymnum Deo meo Cano, quia solus ille dignus est, Jam ergo, quaere & respondebo tibi, nec me latet, nam oculis vidi, quinam sit unus ille compar a quo nulloque alio hic Liquor compellitur sub jugum. Sitibundus novi eris ut de hac re verba faciam, & praegnans ego ut tibi haec demonstrem Cominus. Cor meum Veritatem anhelat, eo quod tandem meos labores messe amplissimâ Omnipotens sit remuneratus. At otiosum hoc Gaudium Causabere, mirum dices quod tam brevi rem nactus sis. Cessa mirari nam nec Volentis nec Currentis est, at miserentis Dei, coram quo universus mundus est quasi fungus ipsius nomini Terglorioso sit aeterna sanctificatio. Sic placuit Omnipotenti, sic assolet, ut per abjectos & contemptos mundi hujus ea quae sunt Confundat, Noli insuper credere quod complicatis manibus domi manserim, imò verò vigiliis laborumque tedio memet fatigavi, et audiit Deus, meique miseri

garrulousness) I will fill each page for you with tiny writing and no margins.[a] I bring new things to you; but what good are new things if not pleasing, hence I promise pleasing news. And what good would pleasant news be if not pertinent to you, wherefore, since I am wholly yours, I send forth all of this to you in the manner of an outpouring from an unworthy conduit. Indeed, on the Sabbath of rest, but playing mightily at my labours, in full joy of mind, I now tell you that God, pitying my labours, studies, vigils and anxieties of seeking, finally opened to me the gates of nature and given me not only the understanding but also the possession of that immortal liquor Ignisaqua,[b] and now finally I sing a hymn to my God, since only He is worthy. Therefore, now ask and I shall answer you. Nor does it hide from me, for I have seen with my eyes what that one compeer is by which – and by no other – this liquor is forced under the yoke. You will thirst for the news that I impart to you about this, and I am impatient to show it to you forthwith. My heart breathes forth the truth, because the Omnipotent has finally repaid my labours with a very full harvest. But it is otiose to expand on this joy, for you will say it is a miracle that you have obtained the thing in such short order. Cease marvelling, for it is a thing neither of one who flies nor of one who runs, but of the merciful God, before whom the entire world is as a fungus, may there be eternal sanctification to His thrice-glorious name. Thus it has pleased the Almighty, thus is He accustomed to pour forth those things which are of this world through the abject and contemptible. Still, do not think that I have sat at home with folded hands; rather, I have exhausted myself with the tedium of my labours and with my vigils, and God heard and

[a] For Boyle's known letters to Starkey, see above, p. 107n. The letter to which Starkey refers is lost.

[b] i.e., the alkahest.

curam Gessit. Sat novi quid sit Alkahest, idque tam ex Paracelso quam Helmonte in effectis collegi, at a Patre Luminum rei ipsius fabricam impetravi.[a] Novi, novi, novi, quia vidi feci, & sum Elaboratus, nec hoc sane dicerem nisi scirem. Repletus Gaudio, in plenâ votorum fruitione, Jam tandem rebus Chemicis immolari incipio, & jam nunc incipiunt labores mei. Et sane mi Domine, (sic me juvet Deus) surdum esset quod sentio solamen, nisi sensu illius (quo te prosequor) honoris veri. Quare cum tam ineffabili mundano beneficio me dignarit Deus, non potui quin immediatè tibi scriberem. Nec sane jam Complementis Chartam implebo, quia jam tandem furnos habeo, ignemque quem vulgus nec novit nec nosse potest. Et jam tandem luculentissimè video cur non possit esse in naturâ alius liquor huic aequiparans. Estque ignis mirus, in cujus praeparatione cuncta sunt stupenda, nec mirum quod stupeat Philosophus, cum ad hoc stupet ipsa natura. Estque Praeparatio descriptioni Paracelsi unicè Respondens.[b] Et sanè scio quod hoc parasse sit ingentis operae, profiteor namque quod utut studuerim per vitam, nisi immediato Dei digitu non poteram reperisse, Operationum enim rationem reddere omnes in mundo Philosophos in aeternum faveret sollicitos, suntque tam inordinatae, extr‹a›que cursum usualem, quod vix aliquid simile in mentem veniret. Inventionis proinde Alcahesticae historiam brevibus absolvam, Perfecto furno (quem jam

brought a cure for my wretched self. I know well enough what the alkahest is, and I gathered this in effect from Paracelsus as well as from Helmont, but it was from the Father of Lights that I brought about the preparation of the thing itself.[a] I know, I know, I know, for I have seen, done, and laboured, nor indeed would I say this unless I knew. Filled with joy, in the full harvest of my prayers, now at last I begin to be sacrificed to matters chymical, and now my labours begin. And yet, my lord, (God aid me thus) it would be a faint comfort that I felt unless [it came] with a sense of the true honour of it (with which I attend you). Wherefore, since God has dignified me with such ineffable worldly benefit, I could not but write to you at once. And I will not now fill up my letter with stuffing, since now I finally have furnaces and fire which the crowd neither knows nor could know. I now see most clearly, finally, why there can be no other liquor like this in nature. For it is a marvellous fire, in whose preparation all things are stupendous, nor is it surprising that the philosopher is stupefied by this, since nature herself is stupefied. And its preparation corresponds singularly to the description of Paracelsus.[b] And indeed I know that to have prepared this would be a matter of massive labour, for I confess that even if I had studied my whole life, I could not have found it without the immediate finger of God, for He has always been inclined to give all watchful philosophers in the world the method of the operations, and they are so unusual and outside the regular course that hardly anything like them could come to mind. Therefore I will complete my history of finding the alkahest briefly. Having

[a] Starkey cites the German chemist, physician and philosopher, Paracelsus (1493–1541). For J. B. van Helmont see above, p. 91n. In his *Ortus medicinae* (1648), Helmont argued that intellect is an integral part of God and the soul, and that intellectual vision descended from God, the 'Father of Lights'. See Newman, *Gehennical Fire* (above, p. 48), p. 66.

[b] For a commentary, see Newman, *Gehennical Fire* (above, p. 48), p. 182.

habeo) novo, laboribus vacans circa 1am noctis legendo atque meditando fatigatus, inclinato in cubitum Capite, altus me sopor invasit. Et Ecce videbar negotio intentus, apparuitque homo laboratorium intrans, ad cujus adventum stupui, Is verò salutavit me dixitque, Succedat Deus tuos Labores. Quod cum audissem, mente recollectâ quod Deum nominasset, rogavi quis esset, qui respondit, se Eugenium meum,[a] rogavi an tales essent Creaturae Respondit quod Sic, multaque alia interrogabam quae taedio essent recensere, Tandem rogavi quidnam esset Paracelsi & Helmontis Alcahest, deditque Responsum Usi sunt Sale Sulphure, & Corpore Alcalito, Et licet hoc responsum sit obscurius Paracelso ipso, tamen cum Responso intravit mentem lux ineffabilis, adeo ut plenissimè Intelligerem, Quod Ego admiratus dixi illi, Ecce tua verba sunt admodum Caligine tecta, et tamen fundamentalitèr sint vera. Dixit sic opportet esse nam quae ab Eugenio dicuntur, omnia sunt scientifica, Haec autem quae dixi sunt longè verissima, Et sic abire voluit, Ego illum ut ma /fol. 133v/ compellavi, & prae Vehementiâ experrectus sum, insigni cum horrore, at non citra maximam Consolationem. Abinde Cognovi, quod Sulphuri naturae Sal universi deberet maritari, at in quâ naturâ fulgere oportuit dubius haesi, Quare labores suscipiens juxta illam quam habueram intellectualem revelationem inveni quod sit in Naturâ Anomalum, nempe Salium (non Salis) Ens primum, in quâ unione Sulphur Salificaretur, nec mortuum

completed a new furnace (which I now have), being unoccupied with labours around the first hour of night, and fatigued by reading and meditating, after resting my head upon my forearm, a deep sleep came upon me. And behold! I seemed intent on my work, and there appeared a man, entering the laboratory, at whose arrival I was astonished. But he greeted me and said 'May God support your labours.' When I heard this, realising that he had mentioned God, I asked who he was, and he responded that he was my Eugenius.[a] I asked whether there were such creatures. He responded that there were. And I asked him many other things that would be tedious to recount. Finally I asked him what the alkahest of Paracelsus and Helmont was, and he responded that they used salt, sulphur, and an alkalised body, and though this response was more obscure than Paracelsus himself, yet with the response an ineffable light entered my mind, so that I fully understood. Marvelling at this, I said to him, 'Behold! Your words are veiled, as it were by fog, and yet they are fundamentally true.' He said 'This is so necessarily, for the things said by one's Eugenius are all certain, and those just said by me are the truest of all.' He wanted to depart then, but I compelled him to remain, and so, thanks to my excitement I was awakened, with considerable dread, but not without the greatest consolation. Hence I learned that the salt of the universe has to be married to the sulphur of nature, but in what nature it has to shine forth I remained more doubtful. Therefore, undertaking labors according to the intellectual revelation that I had just had, I found what is anomalous in nature, that is, the *Ens primum* of salts (not of a salt), in which union the sulphur would be salified and not remain dead, and

[a] *Eugenius*, i.e., 'good spirit', a tutelary genius.

maneret, at eadem opera Sal Sulphur fieret, itâ quod Eodem tempore Eadem res sit ♁ et Sal, Et hoc in Ente primo in quo solo Conveniunt, quare est Corrosivum impar; verus sal verumque ♁ in Ente primo hoc est Aqueo, ita quod Sal nunquam Coagulum meditabitur, nec ♁ Lena erit ad alia Connubia suadens, ideoque quia reverum ♁ sit, ideo Sal ♁is proprietates non impedit, quin quum ♁ Sit a Centro Extraversum flammam Vulcani Concipit, Consumiturque flagrando totum in flammae multicoloris formâ, nec Sal hoc impedit, et tamen Sal penetrantiam suam nihilo obstante ♁re exerit quia corrodit anonymè hoc est non fatiscit rodendo, quod alias si ullus praedominantis ♁ris intuitus esset foret sibi vernaculum, Ergo inquit Helmont, est in totâ Natura Universi unicus tantum Vulcanus Ardens, & unicus liquor &c, Ergoque vocatur hic liquor Ignisaqua, Comparem Ergo Vulcanum esse Ex Adeptis liquet, unde demonstrationem habeo quovis Syllogismo longè fortiorem, Nam ocularis testis hujus rei Existo, Ab uno proinde Vulcano flagrando perit, avolat in Gas, ac inde in Aquam migrat, aliàs a nullâ repatitur. Gratulor illi quem Ignis me sic docuit intelligere, Hoc nec in Helmonte nec in Paracelso reperies, At scio (quia vidi) quae dico, vera esse. Dicam jam stoliditates aliquot in hoc liquore commissas, Dum distillarem, guttam ut gustarem accepi, statimque linguam ictu oculi penetravit cruentamque fecit, Dumque forte fortuitò in rectificando admoverem Candelam ut viderem an halitus ullus exiret, flammam Concepit levissimus vapor, ardebatque spectaculo sane stupendo. Quare dum ten-

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by the same work the salt would become sulphur, so that at the same time the same thing would be both sulphur and salt, and this in the *Ens primum* in which alone they agree, whence it is unequalled in its corrosiveness. There is true salt and true sulphur in this watery *Ens primum*, so that the salt will never consider a coagulum, nor will the sulphur be a bawd recommending other marriages. Therefore, because it is truly sulphur, the salt does not impede the properties of the sulphur, when the sulphur is extraverted from its centre, it conceives the flame of Vulcan and is consumed by burning wholly in the form of a multicoloured flame; nor does the salt impede this, and yet the salt thrusts forth its penetrating power without hindrance from the sulphur, because it corrodes in a nameless way, that is, it does not become exhausted by corroding, which would be innate to it if there were any consideration of a predominating sulphur. Therefore van Helmont says there is in the whole nature of the universe only one burning Vulcan and one liquor, etc., and therefore this liquor is called Ignisaqua. It is clear from the adepts that Vulcan is its compeer, of which I have a demonstration far stronger than any syllogism, for I am an ocular witness of this thing; it is destroyed by flaming Vulcan, passes into gas, and thence into water; otherwise it is acted upon by nothing. I thank him whom the fire has taught me to understand: you will find this neither in van Helmont nor in Paracelsus, but I know (because I have seen) what I speak to be true. Let me now describe some stupidities committed on this liquor. While I was distilling, I took a drop to taste and in an instant it penetrated and drew blood; and when by chance during its rectification I moved the candle so that I might see whether any vapour was exhaling, the very light vapour took fire and burned with a stupendous

tare vellem an in Cochleari cremabilis esset, effudi primas aliquot decidentes guttas (quia aliquid continerent impuri quod Retortae Collo haeserat) vocatus autem ad quendam, exivi ‹è› laboratorio[2] quia nolui ut ullus ad me illuc veniret ‹et› reliqui in Cochleari, et post horam reversus, vidi quod tinxerat se Colore summe viridi, Erat Enim Cochlear ex Aurichalco, reliqui ergo intactum usque ad manè, et exhalatus est liquor relictis pone se guttis aliquot summae dulcedinis ‹ac viredinis›, quae adhibito levi igne avolarunt, Deus bone quam fueram Gaudio repletus, abinde namque pluribus memet Confirmavi quod sit verus Alcahest, quem tum perrexi rectificare modo miro vix cogitabili, et singulâ rectificatione quid virtutis acquisierit vix dici possit, At primâ nativitatis suae horâ, est immortalis & agendo impatibilis. Et jam nunc dum haec scribo, Corpus alcali ex ♅ et Petrae sale ad albedinem summam Calcinatum, pro maxima sui parte stillat aqua Elementalis pro insipiditate, at ponderosa, abstracto ab eo salem[3] semel hoc meo liquore, Quid plura, possim jam Commentari ad usque taedium, at quid te tamdiu antequam biberis Tantalum faciam.[a] Novi jam rectificandi viam at nondum novi, qualem in virtutem possit rectificatione iteratâ perduci, Id mihi negotium primum Statuo, Interim vix mihi Conceduntur 6 in nocte dormiendi horae, vixque aedes meas in Septimanâ Egredior, De ♁re meo possum quidem et meritò Gloriari, quocum indues pauperes, eosque aliquos desperatos sano. Ominor jam te Helmonte,

spectacle. So when I wanted to determine whether it was combustible in a spoon, I poured out the first few drops falling (because they contained some impurity that adhered to the neck of the retort) but being called by someone, I left the laboratory, since I did not want anyone to come hither to me, and I left [the matter in] the spoon, and having returned after one hour I saw that it had tinted itself with a deep green colour, for the spoon was of brass; so I left it alone until morning, by which time the liquor had exhaled, leaving behind a few drops of the greatest sweetness and greenness which evaporated with a moderate fire. Good God how I was filled with joy, for I had confirmed for myself with many [tests] that it was the true alkahest, which I then undertook to rectify in a marvellous, scarce conceiveable fashion, and what virtue it acquired with a single rectification can hardly be said, but in the first hour of its nativity it is immortal and in its acting it is not acted upon. Even now while I write these things, the body of the alkali, from tartar and saltpetre calcined to the greatest whiteness, is for the most part distilling as an elemental water as far as tastelessness, but heavy; once my liquor has been abstracted from that salt. Why should I say more? I could now comment until it grew tedious, but why should I make you a Tantalus long before you drink?[a] I now know the way of rectifying, but I have not yet learned to what virtue it can be led by repeated rectification, I set this as my first business. Meanwhile hardly six hours of sleep per night have been granted me, and I hardly leave my house once a week. I can justly glory in my sulphur, with which you will clothe paupers and I heal the desperate among them. I prophesy that you will be nobler than van Helmont and Paracelsus himself,

[a] Starkey likens Boyle's thirst for information to Tantalus's unfulfilling exertions in the underworld.

ipsoque Paracelso nobiliorem fore, nam quaecumque Ego invenerim tua sane sunt, non quod munificentiâ tuâ ad hoc invitarer, quae maxima est at ex illo syncero (quo te prosequor) amore & honore, Sentio namque te intimis praecordiis veritatem amare, meque ideo amasse quia illi praetendam, Itaque hac obligatione tibi obstringor, nec dicere possim quanto profundar pudore, quod munificentias tuas (nisi tibi injurius esse velim) cum honore non poteram excusasse. Siquidem dum pleno pectore Convictus essem te veritate insudasse, illamque ambire suae dignitatis Ergò, Ideoque me penitus indignum amasse quod ei praetenderem, aliquotque illius vestigia leviuscula olfecissem, Certè tam inopinatò cum essem propriâ haereditate destitutus, tuamque munificentiam deflectissem, /fol. 134/ tibi valde injurius fuissem, cum veritas (omnium finis nobilissimus[)] tibi unice sit proposita, idque toto animo credo, Ergò me amici ac servi fidissimi officium praestiturum ratus sum, si hac tuâ instructus copiâ ista sedulò quaeritarem, quae reperta, fini tuo tibi proposito assequendo quam maximè faciant, Bonitas enim tua sine ullo vade aut pignore de me saltem sic Estimavit, quod odio haberem Sophismata, et quod aliquibus verae lucis scintillis illuminarer. Scio quod si vellem praetendere iis quae otiosâ oscitantiâ tantum macilentèr spero, possem cum aliis plurimis imponere, Aut si iis praetenderem[4] quae vera scio, pretioque prostituerem Margaritas possem pro nummis copiosis ante suos serere,[a] At vera scientia mihi prae divitiis est, nec magna quaero, per providentiam Dei novissimam meliora

for whatever things I have found are yours, not because I solicit your munificence, which is very great in this, but from that sincere love and honour (in which I attend you). For I sense that you love the truth from the depths of your heart, and that you have loved me because I lay claim to it, and thus I am bound to you by this obligation, nor could I say with how much shame I am prostrated that I could not (unless I wished to be injurious to you) dispense with your generosity honorably. Indeed, while with all my heart I am convinced that you have striven after truth, and that you seek it out of its own dignity, and therefore loved me – quite unworthy – because I made a claim to it, and because I sniffed out a few trifling traces of it, to be sure quite unexpectedly since I was destitute of my own inheritance, had I turned aside your generosity, would have been quite injurious to you, for the truth (the noblest end of all) is held out [by me] to you alone, and I believe it with all my heart. Therefore I have deemed to take upon myself the office of friend and most faithful servant if, furnished in this by your resources, I were to seek these things sedulously, which things – once found – would perform much in attaining the ends proposed by you for yourself. For your goodness without any surety or pledge from me has judged that I would hold sophisms in odium, and that I would be illuminated by some few sparks of real light. I know that if I wished to offer things that I only hope for leanly with idle gaping, I could deceive many others, or if I offered the things that I know to be true to them, I might prostitute my pearls for a price, and could sow them before the swine for a store of money.[a] But true knowledge is to me beyond price, nor do I seek great things, having been taught better

[a] The allusion is to Matthew 7, 6.

Edoctus. Novitque cordium scrutator Deus quod insudarim hactenus, ut myriadibus (si possem) infinitis prodesse possim, tuumque amorem ambierim, quia credam te syncerum veritatis ejusque amicorum amicum, speremque fore tandem ut te talibus secretis donarem quae nec Caesar nec Papa poterint Emere, Et Gaudeo sanè, quod spes mihi, acsi tandem Compleretur mihi Eminus videatur arridere, Non Enim ambio dona tua Compensare at talia afferre quae Emenda non sunt in veri honoris tesseram. In iis porro quae scripsi audax fui, quia si decuplo nigrior esset Cacodaemon in hoc me non morderet, Et Si Impostoribus fas sit Phantasmata sua scribere, quidni Ego scribam, quae oculis vidi, re tentavi, manibusque palpavi vera. Eo Ergo melius erit quicquid mihi augusti Evenit, quo mihi tecum Communius, Juxta id, Bonum quo Communius eò melius. Vellem libenter de liquore Alkahest jam tibi Philosophari si brevibus sine Recepto id fieri posset, At Ejus Receptum Chartae non est Committendum, idque operis peculiari tibi dedicando libello, in honoris arrham brevi faciam.[a] Interea totus tuus sum, eoque melius hac nocte dormiam, quod te hoc nuntio tibi non injucundo futuro, salutarim.

Dederam volitanti Calamo altâ nocte quâ horâ plerique mortales dormire absolent prope Athanar meum. ♀is Jan. ut puto 26. 1651.

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ones by the most recent providence of God. And God the searcher of hearts knows that I have striven up to now so that I might do good to infinite multitudes (if I could), and that I might seek your love, because I believe you are a sincere friend of truth and of its friends, and I have hoped, finally, to be able to give you such secrets as neither Caesar nor Pope could buy, and I am overjoyed that my hope – if and when it is finally attained – seems to smile on me from afar, for I do not strive to repay you your gifts, but to bring forth things that cannot be bought, as a mark of true honour. In these [words] that I have written I have been bold, because if the devil were ten times blacker he could not bite me in this, and if it be permitted to impostors to write down their own phantasms, why should I not write what truths I have seen with my own eyes, tested on matter, and felt with my own hands? Therefore however much good comes to me, it will be shared in that degree with you, in accordance with this – that the more widespread the good, the better. I would like to philosophise freely about the liquor alkahest with you now, if that could be done briefly and without a recipe, but its recipe must not be committed to paper, and [I will do that philosophising] by dedicating a particular little book on this work to you, by way of a pledge of honour.[a] Meanwhile I am all yours, and I sleep better tonight that I have given you this with a future announcement not unpleasant to you, by way of a goodbye.

With flying pen in the depth of night, when most mortals are wont to sleep, at my Athanor; Friday, as I reckon 26 January 1651.

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[a] When Starkey's work on the alkahest, *Liquor alchahest* (1675), finally appeared a decade after his death, the publisher James Astell did in fact dedicate it to Boyle. That work, however, was not written at this early a date.

Tui studiosissimus Georgius Stirke.

Si non huc Veneris antea per proximum tabellarium si de te audivero, aliâ te Epistolâ visitabo, nam in audiendo de tuâ valetudine multum recreor.[c] Sic faustam tibi precor hanc noctem.

To you most devotedly,
George Stirke

If I do not hear from you by Friday by means of the next courier, I will send you another letter, for I rejoice much in hearing of your health. Thus I wish you good fortune tonight.

For the truly Honorable & his
Worthily Respected Friend / Robert Boyle Esquire at his
house in Stalbridge in Dorsetshire. These dd.

STARKEY to BOYLE 3 February 1652

From the original in BL 5, fols 135–6. Fol/2. This letter is damaged by a chemical burn which has faded the ink and corroded the paper, and by a tear across one corner.[a]
Not previously printed.

Si Saturninas novissimas ad te transmissas Epistolas officio meo satisfacturas credideris, fallere. Etenim Frontem obfirmavi instar Clerici, qui bis in die Concionabit, etsi prima Concio nauseam Commoverit.[b] Ego pariter etsi te tam brevi abhinc sat molestum ultimis meis fecerim, attamen molestias non adhuc desistam novas exaggerare. At in limine te dicentem audio Salve. Sis itaque et tu salvus, mi Dom-

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If you were to think that my letter sent to you last Saturday fulfilled my duty to you, you would be mistaken.[b] For I have set my brow like the cleric who will harangue twice a day even if the first rally provokes nausea. Likewise with me, even if I made you sufficiently bothered with my last letter so short a while ago, nonetheless I will not desist from piling up new annoyance here. But I hear you at the threshold saying 'Hello'. May you also be

[a] In the transcription dots […] represent lacunae, and an attempt has been made to estimate the number of words missing. In each case, a set of dots represents one word.

[b] A reference to Starkey's earlier letter to Boyle of 26 Jan. 1652. His allusion in the next sentence is unclear.

ine perhonorande, Pergis tamen & quid Novi? Novae sunt hae garrulae molestiae, nova quoque mea audacia, quâ te ausim interpellere. At silentiam mihi imperas, meisque justissimis Excusationibus finem imponit tua bonitas. Taceo itaque maturè, ex quo literas meas quae sunt revera nauci tanti fecit tua humanitas. Ideoque ut posthaec cautus sis ne trufam magnifacias te sic onerare decrevi, quod vel medicè viventi Chartulae meae abstersioni sat sint. Inprimis autem, ni literae a te acceptae aliter monuerint [...] Saturni proximo Venturo die ullas a me Expectes quia scilicet [... tu]as Venturas Credo. Sin moram inexpectatam tibi factam [... ... ...] priusquam te fallam. Dehinc Curioso tibi sequentes [... ... ...] liquore Alcahest, Negotiatus est parum, nec potest [... ... ...] intentus quaeras. Ego tibi ac isti servus pre[... ... ...] jam triduo alvi Constipationem passus est[... ... ...] Tamen se salutatum Cupit licet Voltu ignota [... ... ... septi]manâ Epistolam accepi, aliamque ab Helmonte, quibus [... ... ...] edoctus sum.[a] Utpote, dum cum Sale meo ♁ali non per a[... ...cal]cinatus erat remanente, eum tentarem, primâ distillatione [aquam per] Alembicum flavam traduxit secum, flavam inquam flavedines cunctas [... ... ...] vidi superantem. Dum tertiò illum a Sale ♆ Lixiviato cohoba[tum est] relictus est mihi Sal mirus post aquae insipidae copiosae traductionem. Salis inquam liquamen admodum ponderosum, olei instar, nec cum

well, my most honoured Sir. And then you proceed: 'What's new?' New are these garrulous annoyances, new also is my audacity by which I dare to interrupt you. But you command me to be silent, and your goodness puts and end to my most fitting pleas for pardon. So I fall silent appropriately, thus your humanity has produced my letters which are really such trifles. Therefore so that hereafter you are cautious lest you magnify a trifle I have decided to burden you so much that my little papers will indeed be sufficient for a purge to one who lives medically. First of all then, if the letter received by you had not advised otherwise, [...] you would expect a letter from me next Saturday because I believe your letter is about to arrive. But if [... ... ...] an unexpected delay [... ... ...] before I would disappoint you. Hereafter to you curious [...] the following [... ...] on the liquor Alkahest. It is little trafficked, nor can it [... ... ...] you would intently seek. I, a servant to you and to this same [... ... ...] now has suffered a constipation of the bowels for three days [... ... ...] Nevertheless he desires to be greeted though with an unknown face [... ... ...] week I received a letter, and another from Helmont, by means of which [... ... ...] I have been taught.[a] Namely, when I would try it with my remaining antimonial salt which had not been calcined with [... ...], in the first distillation it drew over a yellow water through the alembic with itself, indeed, a yellow exceeding all yellows [...] I have seen. When it had been thrice cohobated from lixiviated salt of tartar, I was left with a wonderful salt after the removal of a quantity of insipid water. The liquid of salt, I say, is very heavy, like an oil,

[a] Starkey had apparently received a letter from Francis Mercurius van Helmont (1614–98), the son of J. B. van Helmont, and editor of his father's *Ortus medicinae*. See Alison Coudert, *The Impact of the Kabbalah in the Seventeenth Century. The Life and Thought of Francis Mercury van Helmont (1614–98)* (Leiden, 1999).

aquâ nec cum Vini Spiritu Commiscibile, nec gustu quicquam ferè Alkali referens. Tentabo an fixum sit quod sat dubito. Plura de novo non tentavi, quia parca ejus mihi superest supellex, quem tamen de novo facere nocte dieque satago. Sensi proinde tandem quod Scientia tantum detur Electis Viris iisque sedulis, sufficienti sanitate &c. instructis, a quibus requiritur, ut nullis aliis rebus Vacantes, huic soli sese dedant. Tandem ac tandem Laboris sophiae apicem in manus iterum accepi, in quo tertius malus in ☿ parando successus hactenus remoram fecit, iste siquidem labor totum hominem requirit.[a] Totum autem tripartitum nil est. maxime nulla una tripartiti pars. At secunda aquae comedentis repetitio, totum me annuente Deo fecit, facietque Philosophum, Et tractatui meo jam nunc in fieri Esse, nervos dedit. Ah utinam labor & sedulitas undiquaque res in Causis suis primis & ultimis posset pervestigare, tum saltem semper non obicem poneret odiosum Adagium. Audi alteram partem. Quae pars altera licet nihil[1] constituat, at totum perficit. Unde nec [...] est axioma illud Scholarum, quod totum esse rei claudatur in [... su]as essentiales. At dum differant esse & essentia conciliantur [... ... ...] /fol. 135v/ absolvi quod [ver]am principiorum Cognitionem Philosophum nobilitat, At dabit Deus & his quoque [... ...] Nam Conjunctis Caelo & terrâ, non potest non prodire Chaos nec Chaos subsistit sine Microcosmo, qui toti Creationi imperat. At insanire tibi videor, ad me proinde redeo, relictis tam Helmonte quam Paracelso,

miscible with neither water nor spirit of wine, nor scarce at all reminiscent of alkali in taste. I will test whether it is fixed, which I sufficiently doubt. I have not tried many things anew, because only a small store of it remains to me, which I still busy myself day and night to make anew. I finally understood thence that knowledge may be so much given to select men and those who are diligent, endowed with sufficient health, etc., and learned, and from whom it is required that they, free from all other things, dedicate themselves to it alone. Finally, and finally, I have taken up the pinnacle of the work of wisdom in hand again, in which the third bad outcome in preparing the mercury had, until now, made a delay; indeed this work requires the whole man.[a] A whole however is not at all tripartite, above all there is not one part to a tripartite thing. But the second repetition of the devouring water has, with God's blessing, has made me whole, and will make me a Philosopher, and gave me strength for my little treatise which is now in preparation. Ah, would that labour and diligence could thoroughly investigate everything in its first and final causes! Then at least that hateful adage would not always set down an obstacle: 'Hear the other side.' Which other side although it decides nothing, yet it perfects the whole. Whence nor [... ...] is that axiom of the Schools that the whole ens of a thing is enclosed in [...] its essentials. But while *ens* and *essentia* differ, they may be reconciled [... ... ...] I have finished, because the true recognition of principles ennobles the Philosopher, but God will grant, and to those also [...] For when heaven and earth have been cojoined, Chaos cannot but come forth, nor does Chaos subsist without the Microcosm, who rules the whole of creation. But I may seem to you to run mad; therefore I return to myself, having left behind both Helmont and

[a] i.e., the making of the Philosopher's Stone.

quorum uterque tibi commendatum se velit.[a] Et me sanè quod attinet, benè (Deo dante) me habeo, nec in vitâ quod novi melius, valetudinem proinde quâ me beavit Deus in honorem suum pro posse proferre statui, meque unum in multorum usufructum immolari. Arridere mihi videntur Sex fortè librae integrae Liquoris Alkahest jam nunc in fieri esse. Ah simodo non tam avarus fuissem, minorem quantitatem in meliorem Gradum redigissem, at cujus virtutis hic futurus sit nondum Constat, at sat Credo quod priore longè futurus sit potentior. Quatuor furni de Die ac nocte occupati me recreant, bis quoque Septimanâ quavis mutua literarum tecum Commutatio me Exhilarat. Tuas (ultimas credo), jam nunc accipio, tibique ob easdem gratias debitas reddo plurimas.[b] Hasque (cum tam brevi accessurus sis) ultimas a me ut aequus accipias obsecror, quas ideo ultra Consilium primum ampliare decrevi, ut saltem plurium haec una tibi molestiam secum afferat, Corrigo tamen memet maturè, ex quo tua bonitas molestiam non existimet, sat mihi sit molestiae Causam meas satis amplam Continere quam & seriò deprecor. Scripseram tibi nonnulla de hoc Liquore ejusque fabricâ, Iam tibi altiús paulò placet Philosophari. Etenim te quovis Naturae secreto ‹dignum› judico, nec laudes cujusvis mortalium alterius ampliare possim, tu ut spero realitatem non Complementum judicabis. Certifico te porrò[… (]optimè nosti), quod quoties

Paracelsus, both of whom would wish to be commended to you.[a] And as for what concerns myself, I am (by God's granting it) keeping myself well, nor have I known myself to be better in my life; indeed, I have determined to display to His honour as much as I can the health with which God has blessed me, and to sacrifice myself as one for the benefit of many. Perhaps six whole pounds of the liquor Alkahest which are now in preparation seem to smile upon me. Ah, if only I had not been so greedy, I might have brought a smaller quantity into a better degree, but of what strength this will be is not yet established, but I believe sufficiently that it will be far more powerful than the previous. Four furnaces in use day and night reinvigorate me, and twice every week the mutual exchange of letters with you cheers me. I have now received your letter (the most recent one I believe) and on account of it I give you many due thanks.[b] I beg that you would accept this last (since you are to arrive so soon) letter from me favourably, which I thus decided to expand beyond my first design so that it might, as one of many, at least convey some bother to you along with itself. But I am correcting myself in time, that your goodness might not reckon it a bother; let it be enough for me that my letter contain sufficiently ample cause for the bother, for which bother I seriously beg pardon. I had written you some things about this liquor and its preparation; now may it please you to be philosophised to a little more deeply. Indeed I judge you worthy of any secret of Nature, and I would not be able to enlarge these praises for any other mortal; you will I hope adjudge this the reality and not a mere compliment. I certify to you then […] (as you know best) that as often as a body is divided into more

[a] For van Helmont see above, p. 91n., and for Paracelsus see see above, p. 119n.

[b] For Boyle's only known letters to Starkey, see above, p. 107n. Evidently, the letter Starkey refers to here is lost.

Corpus dividatur in Atomos subtiliores, quam ferat substantiae [exigentia] subtiliationem hanc sequi ejusdem transmutationem, Excepto Elemento. Omnis autem [… transmu]tatio praesupponit fermentum Corruptivum. Quae transmutatio cum in se con[tineat … … …] retrogradatio‹nem› necessum habet ut fiat per agens vi tali pollen[s … … Adepti] Sophiae promovere Contendant per Lumen lunae, Etenim [… … …] duorum unum non magis diei, Calori, ac Generatio[ni … … …] in primam materiam praeest. Obiter hic adnoto [… … … de]rivativum tenebrarum principio adscribant, cum e Con[verso … … …] luminali principio, Luna puta. Enimverò Luna Lucem [… …] accipit quam in suam naturam traducit, ac Glaciale facit, Porrò s[…] plurim[… …] aliaeque multae solis nutui auscultant, a quibus situs ratione fundi Aeris sive [Peroledi] afficiuntur diversimodè. In hoc autem summoperè, idque meritò Gloriantur Sophiae Adepti, quod Caelum etiam ipsum in manus suas committatur, vides enim quod Tonitrum Terrenum, Gas Ventosum Calorque & frigora ad Artificis nutum respondeant. Vides artes esse, quibus ex Vitrioli Spiritu fiat Calor summus, per frigidae aquae unam guttulam immissam, adeo ut prae Calore festinante et Eminenti vas utut fortè[2] (si modo vitrum sit) dissiliat, Haec autem Contiguitatem requirunt, Insuper ergo, Vides Artem esse quâ irradiatio Lunaris, solo intuitus aspectu ad objecta feratur Ex quo enim Luna aquis immediatè praeest, regatque vi Luminis glacialis. Subtiles Philosophi vias invenerunt quibus quovis loco aut anni Tempore aquam absque Contingenti agen-

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subtle atoms than the [exigency] of the substance would bear, a transmutation of the same (an element excepted) follows this subtilisation. Likewise, every transmutation presupposes a corruptive ferment. Which transmutation, when it contains [?] in itself [… …] has a necessary retrogradation so that it is made through an agent having such force [… … the Adepts[?]] of wisdom assert advances through the light of the Moon, for indeed [… … …] one of two not more, to day, heat, and generation [… … …] presides over into prime matter. In passing I here note [… … …] derivative they ascribed to the principle of shadows, while on the contrary [… … …] to the luminous principle, namely, the Moon. Indeed, the Moon accepts light [from the Sun[?]] which it turns into its own nature, and makes it icy, then many […] and many others heed the will of the Sun, from which by reason of the place, the bottoms of the air, [or Peroledi], are influenced in diverse ways. In this the Adepts of Wisdom exceedingly (and that deservedly) glory, because the heavens themselves are committed to their hands. For you see that earthly thunder, the *Gas ventosum*, and heat and cold respond to the will of the artificer. You see that there are arts by which a great heat may be made from the spirit of vitriol through one little drop of cold water thrown into it, and to such a degree that a vessel even if strong (so long as it be of glass) cracks on account of the sudden and intense heat. These things likewise require contact; in addition, you see that there is an art whereby a lunar irradiation is carried to objects by the aspect of its gaze alone. Thereby the Moon has command directly over the waters, and holds sway by the power of its icy light. The philosophers have found subtle ways by which they may freeze water in any place at any time of year without the touch of any contacting agent. For by

tis attactu glaciarent. Idque intuitu rei cujus intimis Lunaris influentia nupsit & si ipsa res sit summè Calida & Caustica, Nec nuda est haec illusionis larva at omnes Virtutes Lunares arte hac educuntur, Enimverò ex quo motus nullus fiat citra Stellarum blas, sitque glaciatio aquae actio spontanea. eminentis Sophiae indicium esto cum Adeptus influentiis Caelestibus, aerisque valvis ac Peroledis per terrestria novit imperare, ut sine ambientis frigore, nudo suo aspectu in aquâ Imaginationem glaciantem proritet, quam Imaginationem Conceptam verum Glaciale frigus sequeretur. Saltem [...] glaciam tibi fieri Confido, quomodo fermenta Lunaria rebus insinuentur [...] ad esse suum primum Citra Solaris fermenti Societatem [... ... ...]li lunae aspectu percutiuntur, tangitque illius influentia /fol. 136/ Corpora quaedam in Centro suo pro nutu artificis, uti [oper]atio anomala, cujus vita prima media & ultima in Ente primo triumphant. Hactenus itaque ignis Gehennae omnia pervadit viribus infractis, quia agit per blas lunare, ideo distinguit in rebus Entia Solaria a lunaribus.[a] Haec si in animo tuo intime persenseris, Causam & Processum Entis hujus Heterocliti facile percipies. Quia nimirum frigus non raro Calore fortius urit, quod testantur membra Glaciata, ideo Vulcani Caudae nomen ei jure Competit, A quo tangitur Ens primum a Lumine formali, reductioni Praefecto. Plura nunc nolo, quia haec scio quod vix centesima lectio tua faciet. At in Adeptis est probatio quavis demonstratione superior. Vides mi Domine quam

gazing upon a thing the lunar influence has married the innermost parts of it, even if that thing be very hot and caustic. Nor is this a mere mask of illusion, but all lunar virtues are brought forth by this art; to be sure, no motion is made thereby without the Blas of the stars, and the freezing of water is a voluntary action. It shall be an indication of the highest wisdom when the Adept knows how to rule the heavenly influences, the valves of the air, and the Peroledi by means of terrestrial things so that he may provoke a freezing imagination in water by only his aspect without ambient cold; a true icy coldness would follow this conceived imagination. In any event, I confide to you that [...] ice is made, as the lunar ferments penetrate into things [... ...] to its *esse primum* without the accompaniment of a solar ferment [... ... ...] they are cut through by the [...] aspect of the Moon [...], and its influence touches certain bodies in their centre by the will of the artificer, as an anomalous operation, whose first, middle, and final life triumph in the *ens primum*. And so to this extent the *ignis Gehennae* penetrates everything, with its powers undamaged, because it acts by the lunar Blas; therefore, it distinguishes solar *entia* from lunar ones in things.[a] If you perceive this deeply within your mind you will easily understand the cause and process of this heteroclite *ens*. Because a great cold not infrequently burns more strongly than heat, to which frozen members attest, thus the name of 'Vulcan's tail' fits it justly, by which the *ens primum* is touched by the formal light, which has put in authority over reduction. I now wish no more, because I know that hardly yor hundredth reading will produce these things; For among Adepts there is a proof superior to any demonstration. You see, Sir, how easily words

[a] For van Helmont's use of the term 'Gehennical Fire', derived from the New Testament word for hell, see Newman, *Gehennical Fire* (above, p. 48), p. xiv.

facilè res impetratas sequantur verba, nec posthac Adeptorum tam facilem mentis suae Explicationem mirabere. Te proinde Deo nunc Committo qui tui Curam & habet & habebit. Me vero tibi subscribo.

Tuum ad aras devotissimum ut tibi pro
Jamesiis 3. Feb. 1651/2 posse inserviret

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may follow things requested, and after this the explanation of the Adepts will not so easily astonish your mind. Thus I commit you to God who has and will have care for you. I truly subscribe myself to you,

Yours most devoted to the altars,
that he might serve you to the extent of his ability
From St James's, 3 February 1652

For his highly Honored / Friend the Truly Honorable
Robert Boyle Esquire at / his house in Stal / bridge in
Dorsetshire.[3]

Seal: Oval. Broken. Crest only: *lion's head erased*.

BOYLE to MALLET[a] 2[3][1] March 1652

From the holograph original in the British Library, Add. MS 32093, fols 293–4. Fol/1+1.
Not previously printed. Recorded in *RCHM*, Fifth Report, p. 314.

Sir

You may imagine my surprize was not moderate, to be since the last Weeke, made happy in a Letter of Your's dated lesse freshly then the last Month And I might have possibly as much doubted that it was latelyer written, as I was troubled that it was not earlyer receiv'd;[b] if I had not at once been ascertain'd that I had miss't it long, (& in some measure satisfy'd for that unwelcome discovery) by an obliging Visit made me by Your Brother, for whose Conversation, Your having (by

[a] For John Mallet see above, p. 103.
[b] Mallet's letter to Boyle is not extant.

his acknowledgment) procur'd it me, doth not a little engage my Gratitude.[a] I find by him, that Your Letter was long since left at my Lodging in London whilst I was in the Country at my Lord of Warwickes; where the fondnesse of a Sister stay'd me long enough, to let those forget the Delivery of that obliging Paper, who knew not how welcome it would have been to me, nor how sensible a Discourtesy it was to deprive me all this while of so advantageous a Correspondency, as that which You[2] there vouchsafe to invite me to:[b] & which I hope suddenly to change for a more immediate Conversation by wayting on You in the West, to which the Happynesse of Your Company is certainly one of my powerfullest Attractives. But before I goe any further, I must quarrell with the Excesse of Your Civility, which hath engag'd You to make Apologies where You may justly expect Thankes & do Your Letters the injury of suspecting that they need an other Introductor or Endearment then their owne Excellency. But 'tis not to this narrow Paper that I will restraine all the expostulations I have to make Your Civility on the behalfe of all your other good Qualitys: since I am likely so suddenly as next weeke to do both You & my selfe right[3] very fully. I have acquainted Mr Hartlib with Your forwardnesse[4] in improving his Legacy of Husbandry, to the Ends to which he design'd it: & he is hugely satisfy'd to find things of that Nature rellish'd by such as You.[c] The Booke it selfe hath had a Second Edition with Enlargements & Amendments: & the Author (now in Ireland) will I thinke be brought to pollish & enlarge it himselfe, if I meete with him there.[d] /fol. 293v/ For my part I make no doubt but that the Husbandry of Knowledge will be dayly improv'd too: (though by throwing downe of Enclosures) & all the Parts of Philosophy, be both better cultivated & more fruitfull. Nor do I scruple to adopt your Hopes concerning the Advancement of Divinity too: for the Criticall Productions of these last Yeares make me not unapt to expect, that the Scripture should be more illustrated within these ten Yeares, then it was formerly in as many Ages. But this I meane in reference to the Generality of inquisitive, intelligent & moderate Persons: for as to those that are prepossess'd, or are enslav'd to Factions & Interests, I still expect they should declare against any Interpretation that makes against them: & as for the Giddy Multitude here in England, I confesse my Apprehensions are very sad, that amongst too many, this Multiplicy [*sic*] of Religions will end in none at all; for to say that they will quit Christ for Epicurus,

[a] Mallet had three brothers. The two surviving by this date were Michael Mallet, later MP for Milborne Port, and Thomas Mallet, a major in the army. Malet, *Malet Family* (above, p. 103n.), p. 59.

[b] Boyle refers to a visit to Leese Priory in Essex, the home of his sister Mary Boyle, for whom see above p. 31n.

[c] This is a reference to *Samuel Hartlib his Legacy or An Enlargement of the Discourse of Husbandry used in Brabant and Flanders* (1651). See Turnbull, *H. D. & C.*, p. 97.

[d] The author of the largest part of the first edition was Robert Child (c. 1613–54), physician, then in Ireland, with whom Arnold Boate collaborated in the second and enlarged edition. See Webster, *Great Instauration,* pp. 431–2.

would scarce expresse the worst of my Feares.[a] But I am confident with You that Truth will out-shine all Shaddowes, & all these wild Opinions that now attempt[5] her, will but open & snuffe, & not extinguish her. I shall therefore thinke my selfe very happy if I may contribute any thing to further or encourage Your Progresse in that Heavn'ly Study; & if my Distractions had not been so much more importunate then my Friends, that I could never since my arrivall in these parts snatch time to digest and transcribe my Thoughts concerning the Scripture, Your Commands had certainly made this Scribble a Cover for them: since I could not present them to a Person more capable of judging of them; & whom it were lesse uneasy ‹for me› to be instructed by; or more happy to informe.[b]

That Morall Part You mention, I wish much better understood & practis'd then I generally find it here by those, that are pleas'd to thinke that they looke down upon it: but I dare not now make an Entrance upon that Theame, there not being any in Philosophy or Divinity, wherein I allow my selfe more Peculiarity of Opinion. I hope one Day to show You a couple of Discourses the one Philosophicall concerning Felicity, the other Theologicall concerning Libertinisme,[6] wherein I hope my Paradoxes on both those Subjects, will not appeare improbable Untruths.[c] But, really, Sir, here, my almost Dayly removes, together with my owne & my Friend's Businesse, leave me so little Leisure, that I am often faine to deny ev'n Nature hir wonted Dues; & whilst I wrote[7] this Scribble I was so importun'd by intruding Visitants, that If I have written Sense, 'tis as much as I[8] expect; though very farre from being as much as I desire; for seriously, Sir, Your Prerogatives & Civilitys are so unusuall & so obliging; that though I had as much leasure as I want, I could expresse but a small Part of those Resentments Your Merit & Favors have deservedly created in

Sir
Your most affectionate &
most obliged humble
servant
Mar. 2[3][9] 1651 R. Boyle.

My humble Service, I beseech You to your Father, Mother, & Lady; in the Happynesse of all whose Rememembrances [*sic*], I thinke my selfe highly honored.[d] The newes here (what ever men say) is either uncertaine or scarce worth mentioning;

[a] Boyle represents his anxiety about irreligion in the country through the extremes of Christ and Epicurus.

[b] Evidently *Style of the Scriptures* (1661) or the earlier 'Essay of the Holy Scriptures'; see above, p. 104n.

[c] These works are not extant.

[d] For John Mallet's mother, father and wife, see above, pp. 103n., 106n.

otherwise I had hinted it to You, in spite of my Hast; for which I must not only begge Your Pardon, but, I feare too, for my Non-sense.[10]

[11]For his highly respected / Friend John Mallet Esquire
at Poynington in / Somersetshire / these
Post pay'd
This Letter is to be left with the Postmaster of Sherborne in Dorsetshire to be sent to Poynington.[a]

Seal: Oval. Achievement of arms: per bend embattled sable and argent [?], a martlet for difference. Crest: a bear's [?] head couped.[b]
Endorsed '1651' at head of fol. 293 and 'Mr Boyle. 1651' on fol. 294.

LADY RANELAGH to BOYLE — 14 September [1652][c]

From the original in BL 5, fols 21–4v. 4°/2+2.
Previously printed in Birch (ed.), *Works* (1744), v, 564 and Birch (ed.), *Works* (1772), vi, 523.

Brother

Since your goeing into Ireland I received to this ‹day› but two letters from you & Those at one time, written upon your first arrivall, by means whereof, I am kept in a Constant suspence & uncertainety Concerneing one of my neerest Intrests in this world, which is that of your health, But Alass I might be soe though I heard as frequently from you as I Could hope or wish, & indeed there is but one satisfying certainty, & that is that noe thing Comes to pass but by the wil of our heavenly father nor nothing to pass by that wil which is not best in its selfe & best to them whom he has dignefied by makeing them his, not onely by Creation but by union, Thorough Christ.[d]

This last fortnight I have binn something more than ordinarely Exercised in those accidents. That teaches me, Experimentally to Confess, that Sentence, which Solomon pronounced; of vaneties & vexsation, upon all things under the Sunn, To be extreamely true, This day fortnight /fol. 21v/ I had a whole Comitee to my breakfast, who were pleased in civiletie & kindnes (as they said) to me, to call me

[a] For Pointington see above, p. 105n.
[b] At this date Boyle was the 4th surviving son of the Earl of Cork; hence the martlet.
[c] For the dating of this letter, see the note on the death of Fenton Parsons, below.
[d] From June 1652 to July 1654 Boyle was in Ireland, except for a brief period of three months, July to Sept. 1653, when he returned to London and Stalbridge. See Maddison, *Life*, p. 80.

in, & give me the thoughts they had had of my little affayre's & to heare from me my owne thoughts upon theirs & upon the same Subject.[a] but they like lawgivers indeed were to Command, & not reason, & by Exercising their Legislative power gave the affayre the Conclusion I formerly told you, which though it was very Smale in point of receipt, it was not altogether inconsiderable in poynt of restoreing & Secureing. & very welcome to me, as it advanced farr towards my freedome from an attendance, that both my body & Conscience were weary of, & In that I began as soone as they dismissed mee to delight my Selfe, but to Chase me out of that fooles paradise, That very evening I received a letter from Charles Rich telling me of my Sisters being strangly & extreamely Ill & inviteing me very earnestly upon That occasion to Lees, which though in relation to my owne affayres it was very Inconvenient to me to harken to In relation to my kindnes to her & the discharge of my Conscience in Serviceablenes towards her in a time /fol. 22/ of Such distress. (wherein Commonly the company of a poore puretane or Sectary is more acceptable, Then that of the most pleasant & quick Droles in the world) I could not refuse it, but went the next morneing.[b] And when I Cam thether found her a sad Spectacle Indeed her disease lyeing more in Stuppyednes then paine & In her understanding & Speech (which were both very Imperfect) Then In the more remott parts of her body, she was noe more Joyed to see me. Though they about her endeared my visit to her by telling her how I had neglected all my owne Concernes to Come, Then if she had had as litle as she used to have much kindnes for me, when she was her Selfe This you wil easily beleve was a mortefieing incountre to me. To see her well enough to be out of her bed & to retaine the wonted fulnes & almost ‹Couler her face› it had in health, & not to have any Setled workeing of reason or playne Expression in Speech, To see the Carcass of a friend there & her soule gonn as to any rationale use she had of it, & her kindnes to me as dead as her rasonings to her selfe, or her thoughts towards god for ought I Could See /fol. 22v/ were, also, I stayd there till Satterday & then by the Drs & al Consents brought her away with me. her speech in that time would sometimes be more distinct & but sometimes, & at that same rate she reasond very unfixed & unsetledly. & her head began to Shak & she to have a Sence of a heavynes in It, which Confirmed the Dr.[s} opinnion of Its being a Spice of the Palsy:[c] but the Dr. here thinkes Its roote to be in the mother yet Confesses the Cause of her Ill to be very inward & hidden in his opinnion. & therefore I doubt must goe blindfolld towards her cure, which yet advances but very litle if at all, here I saw the vanity of the thoughts I had taken up of staying quietly at home because this Condition of hers made mee[1]

[a] The reference is to Ecclesiastes 1, 4. The committee which Lady Ranelagh refers to was presumably a committee of Parliament.

[b] Lady Ranelagh refers to her sister Mary, and Mary's husband Charles Rich, for whom see above, p. 31n. Mary's illness is mentioned in *Autobiography of Mary, Countess of Warwick*, ed. and introd. T. C. Croker, Percy Society 22 (London, 1848), pp. 25–6.

[c] 'Spice' is used here in the sense of 'a suggestion of'.

Judg my attendance upon her very necessary (Though Seriously My Lord & Lady Warwick & Charles Rich are very obligeingly Carefull of & kind to her) but a Munday after I had visited her, at my returne home I found my poore Franke fallen very Ill.[a] her distemper was strongly feavourish & Increased to such a violence In the two folowing days, that she lost both her Sence & Speech & restraind[2] strength enough onely to disorder & Indanger her Selfe, the manner of her sicknes gave me noe smale apprehensions of Its being Plauge,[b] & to increase those /fol. 23/ an old woman that then did & formerly had tended her, said there was a riseing about one of her thighs. but god was pleased to give me soe much Courage upon that information, as to resolve not to trust the old womans fumbleing feeleing, but to try my Selfe which I did & found cleerely that she was mistaken, in that perticullar Though still she apeared noe less mortally Sick. Then if it had binn That, That night I watched with her in Expectation That it should be the last, She would live. but it pleased god to Carry her thorough, It, & to restore her Sense & Speech in the morneing. when also the Smale Pox broke forth, & apeared then a deliverance to me, but now they are upon her a disease, & a most loathsome one Though god be pleased to preserve me from the feare of them & to make me able & willing to bee with her. who has a face, That shews what Stuffe these bodys of our Inclose, & how litle all the neatneses of art Can prevayle against Its own filthynes when god gives it a Commission to /fol. 23v/ break out, & how litle Cause we have to make that the object of our pride. That is filled with soe many lessons of humiliation, my attendance upon her makes me know nothing of my sisters Condition but by report. & that makes it much the same, In this time Poore Fenton Parsons is dead. of a feavor after it was turned Into an Intermitting Ague, as its Thought thorough being let bloud unseasonablely by one that is called a Dr. but sure their trade is rather to Cure men of their bodys Then to cure mens bodyes of diseases,[c] he was an honest friendly man & of as great hopes for the things of this world, as any one of his age & profession, but ‹one›[3] such blow lays all those hopes in the dust with us & ‹leaves› us myserable. if we had not surer & better grounded ones which are turned into abideing possesions when the former perish, Thus you have a long accoumpt of my last fortnights Changes & yet you must not be rid of me, till I have binn faythful to you In telling you that there is not onely in this place but in this Country soe generall a visitation of Sicknes which are for the most part feavors fluxes & Smale pox /fol. 24/ That there is hardly any famelly free from one or other of them, Soe as into this danger you must Come if you Come hether. which if you be free from where you are I doe hartely give up your Company to your Safety &

[a] This is a reference to Robert Rich, 2nd Earl of Warwick, for whom see above, p. 70n., and his third wife, Eleanor (d. 1667). 'Franke' was one of Lady Ranelagh's daughters; see above, p. 75n.

[b] i.e., the plague.

[c] This is a reference to Fenton Parsons of Lincoln's Inn, who had done legal work for the 1st Earl of Cork. His will, dated 4 Sept. 1652, was proved on 30 Sept.; Birr Castle, Rosse MS A5/79, cited in Little, 'Political Career of Broghill' (above, p. 39), p. 210.

to that you ought to give up all litle Satisfactions that Cannot be taken without it.[a] As this Scourge is upon us soe are our Neighbours of Holland of a peece with us in this, Though we be litle enough one in other Matters, for about Amsterdam Morian writes, That they have Scarse Enough healthy people left to milke their Cows. & out of Germany from a very good hand honest Hartlib has received assurance That their very watters are turned Into bloud.[b] out of Our northerne Parts Coll: George Fennick an honest & discreete man writes That he saw lately a Clould very black & about the bignes of an Aker of ground.[c] In the midest whereof There was a perfect rainbow for matter of forme. but for Couler onely a pure blew. at Each end of this bow apeared men In armes with al their Warlike[4] Equipage who did severall times Charge one another & with various /fol. 24v/ succes. till at length, as I take it the partty at the East end the bow beat the other quite away. These being set for Signes & for Seasons, doe Surely Signefy Something. Though I think he that would dare to affirme in perticular, what might be as like to mistake as hit right, but we have a sure word. That tells us all this old frame of heaven & earth must pass. & a new one be sett up ‹in› Its place. & Then your Expectation of seven yeers wil be aboundantly answered & Exceeded. but wheather it wil come within the seven years. I dare noe more say, Then I doe know onely this me thinks I am sure of, That its a brave thing to be one of those that shall lift up their heads with joy in Expectation of a present redemption when all these ruins & Confusions shal be upon the earth. & such brave men & women are onely true Christians.[d] Therefore my deere brother let us Endeavour for ‹that› dignety. though in maintaining ‹it› we take courses That have the Contempt of the world heaped upon them for to be Contemned by the Contemptible is gloryous in the opinnion of your

The 14th of 7ber K.R.

in Excuse for my not writing by my brother Frank I must tell you hee never told me of his goeing nor heard I tel he was gonn, my service to him if he be with you[e]

The MS has printer's marks.

[a] It is not clear where Lady Ranelagh refers to in the words 'this Country', or indeed, from where this letter is written. It is likely that it is London, as earlier Lady Ranelagh says that she brought Mary away from Leese Priory (in Essex), presumably to her London home.

[b] Evidently a reference to Johannes Moriaen, for whom see above, p. 66n., and to Samuel Hartlib. Hartlib's German correspondent has not been conclusively identified. It is possibly Dr Walter, for whom see below, pp. 195n., 221n., or Joachim Jungius, for whom see below, p. 173n.

[c] A reference to George Fenwick (c. 1603–57), parliamentarian and commander of a militia regiment in the north.

[d] For a comment on this apocalyptic speculation, see Malcolm Oster, 'Millenarianism and the New Science', in Mark Greengrass, Michael Leslie and Timothy Raylor (eds), *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication* (Cambridge, 1994), pp. 137–48, on pp. 142–3.

[e] Lady Ranelagh refers to her and Boyle's brother, Francis (see above, p. 23n.). He had been granted a pass by the Council of State 14 Apr. 1652 to go abroad. See *CSPD*, 1651–2, p. 558.

— 1653 —

Lost letters dating from 1653 are as follows:

Wotton's list (see above, p. xxvii) includes as no. 355 'Lady Barrymore 1653'. This is Susan Barry, Countess of Barrymore, for whom see above, p. 27n.

Two letters from the second Earl of Cork to Boyle are recorded in the second Earl's diary (above, pp. xxvii–xxviii), dated 4 February and 10 September 1653.

Lost letters referred to in surviving letters are as follows:

A letter from Boyle to Hartlib, before 30 September 1653 (below, p. 154).

BOYLE to MALLET[a] January 1653

From the holograph original in Boyle's early hand in BL 1, fols 143–4. Fol/2. Previously printed in Birch (ed.), *Works* (1744), i, 30–1. Also printed in Birch (ed.), *Works* (1772), i, l–liii.

Sir,

'Tis so long since, that I have been made happy in an unanswer'd Letter of Your's; that it would now almost as justly produce my Blushes that it hath lay'n so long unacknowledg'd, as it did then my Satisfaction, to find it so obliging; if it had not so abruptly come to my hands, & with so many other Papers, that till I was this afternoone inform'd by Mr Lillyes that he sent it me; I neither knew by whom You had written it me; nor by whom I might securely returne You for it my highly merited Thankes.[b] But tho this Ignorance lessen'd, it destroy'd not the happynesse I receiv'd in a Paper, whose Writer kept it from needing endearing Circumstances. And certainly without a huge deale of Insensibility, I could not but be ‹highly› sensible of a Civility that came to seeke me out in a Country, which

[a] For Mallet, see above, p. 103.

[b] Mallet's letter to Boyle is not extant. 'Mr Lillyes' has not been identified.

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those that have the most Relation to it, seldome thinke on any longer then they are in it. Nor was I only mightily affected to find the welcome continuation of Your Friendship for me; but[1] very much delighted to find too; that You began to have a Friendship for the Easterne Tongues.[a] For tho to a Person so us'd to the Study & replenish'd with the Knowledge of Things as Mr Mallet; the Learning of Words cannot but at first be very tedious; yet since to be a Good Grammarian is necessary to be a Good Divine: & he that hath no skill in the Originall Scripture himselfe, may be deluded by those that translate it for him; You will find a rich Compensation for the Trouble of Learning the Holy Tong, in the Advantages of having learn'd it; & by the helpe of that Primitive Language wherein they were written, You may gaine a free & safe Accesse to those Theologicall Mysteries, which he that is no Linguist must either totally ignore or take upon Trust. And certainly a Knowledge so directly conducive to that Knowledge, ‹that is call'd›[2] Life Eternall, cannot but deserve the being labor'd for. /fol. 143v/ And to satisfy You that the Difficultys of attaining so pretious[3] a Knowledge are not insuperable, I shall tell You, that I have a Young Kinswoman newly marriageable, who to the French & Latine hath added skill enough in the Greeke & Hebrew Tongues to read the two Testaments in them.[b] I am glad to heare by Mr Lillyes that You have got so good an Instructor as Mr Bythner; whose Short Grammer of the last Edition, is that for which I left off many others of the most approved, after having ‹Survey'd›[4] them all.[c] But his Institutions being almost confin'd to the Etymologicall Part of Grammar, are cheefly proper for a Beginner; & therefore when You are Proficient enough to decline most Nounes & Conjugate (tho not All Verbs) all sorts of Verbs; it would[5] be requisite for the Syntacticall part of Grammar, to have recourse to some that have handled it expresly; wherein next Glassius (whose Works are Voluminous enough & of Various subjects, but, in my greene judgment, Theologicall & excellent) the Elder Buxtorfius hath been the most full & accurate of those I have yet met with.[d] There is likewise an old Booke of Flaccius Illyricus which he calls Clavis Scripturæ; which tho[6] little taken Notice of, is more then a Little Usefull; & very well worth perusing; since giving his Reader a particular Accompt of the Hebraismes as they lye in Scripture, he oftentimes teaches him at once both Grammar & Divinity.[e] But I must begge Your Pardon for troubling[7] with these ‹perhaps›

[a] Mallet's knowledge of Eastern languages is not otherwise evidenced.

[b] Boyle's kinswoman has not been identified.

[c] A reference to Victorinus Bythner (c. 1605–c. 1670), Hebrew scholar and physician, the author of instructional works on oriental languages. The work in question here is probably *Lingua eruditorum* (1638), of which there were several editions.

[d] Boyle refers to Solomon Glass (1593–1656), Lutheran divine, author of various theological works, the chief being *Philologia sacra* (1623), and Johann Buxtorf (1564–1629), Calvinist divine, author of works on Hebrew and Chaldee.

[e] Boyle refers to the work of Matthias Flacius or Francowitz (1520–75), professor of divinity and Hebrew at Jena, entitled *Clavis scripturae sacrae* (1567).

needlesse advertisments; I have cause to Beleeve Mr Bythner's will be much riper; only the Prejudice I sustain'd by not having seasonably an Addresse to the Authors I have nam'd; makes me willing rather to hazard the Exercise of Your Patience by superfluous directions, then venture to let You misspend any of Your studious howres for want of such addresses as are not Bad tho they prove not the very Best. I forgot to tell You that there is one Gerhard (son to the famous Lutheran Gerhard) who hath publish'd a Harmonicall Synopsis of the Ebrew, Chaldee, Syriacke,[8] Arabicke & Ethiopicke Tongues, which would be no bad Isagoge to the Easterne Languages, if it were not so wretchedly false printed, that it exposes the learner in almost every Page to Perplexitys or Mistakes.[a] I wish I could give You some Accompt of my Studyes here; but I must sadly confesse, that the perpetuall hurry I live in, my frequent Journys, & the necessary Trouble of endeavoring to settle a very long neglected & disjoynted fortune ‹have left›[9] me very little time to converse with any Booke save the Bible; & scarce allow'd me leasure to sow together some loose sheets that contain'd my Thoughts about the Scripture;[b] of which I wish I had a Coppy to submit to Your Censure. But I hope by God's blessing to able [*sic*] to bring over one my selfe this Spring into Your parts; to which it is not my least of Invitations, that I shall there enjoy the happynesse of a Conversation that hath made me upon so many Scoares

Sir
Your most affectionate friend &
obliged humble servant
Ireland. January 1652 Robert Boyle

[10]My most humble service, Sir, I beseech You, to Sir Thomas Mallet & my Lady; & the Faire Young Lady You are happy in: & I shall begge You to do me the favor to convey my high respects to the Sherborne family, when You go thither.[c] The newes here is not[11] Considerable enough to deserve Your Notice. My Friends here are God be praysed, well, & those that have the happ[iness] to know You, much your serva[nts.][12]

For his highly honored / Friend John Mallet Esquire
at / Poynington / neere Sherburne / these

[a] The reference is to Johann Ernst Gerhard (1621–68), professor of history at Jena, and the son of Johann Gerhard (1582–1637), Lutheran divine. The book to which Boyle refers is probably Gerhard's edition and expansion of Wilhelm Schickard's Hebrew grammar, *Wilhelmi Schickardi institutiones linguæ ebrææ … accessit harmonia perpetua aliarum linguarum orientalium, Chaldææ, Syræ, Arabicæ, Aethiopicæ* (1647).

[b] A further reference to Boyle's writings on the scriptures; see above, p. 134n.

[c] For Mallet's family see above, pp. 103n., 106n. Boyle alludes to the Earl and Countess of Bristol, for whom see above, p. 106n., who lived at Sherborne Castle, close to Stalbridge.

Seal: Small remnant only: design missing.
Endorsed (possibly in Mallet's hand): 'Mr Boyle. 1652'.[13]

PETTY[a] to BOYLE 15 April 1653

From the copy in the British Library, Add. MS 6193, vol. 1 of 'Miscellaneous Collections relating to Gresham College' compiled by John Ward,[b] fols 70v–72v.
Previously printed in Birch (ed.), *Works* (1744), v, 297–8, and Birch (ed.), *Works* (1772), vi, 137–9.

Sir,

Being not able to write you any such complements, as may delight you, nor to enforme you of any such more real matter as might profit you, I desire that those my deficiencies together with my usual rudeness, may be taken for the cause of this long silence. Now indeed, I am forced to communicate with you even to keep up the face of the visible church of philosophers; for by Mr. Worsely his going for England & Major Morgans absence in the North, there is no such thing now left at the headyers.[c] If there be any other reason of these lines besides this; & to beg my continuance in the number of your affectionate servants, it is to dissuade you from some things, which my lord of Corke, my lord of Broghill and some other of your freinds think prejudicial unto you one whereof is your continual reading:[d] Here like a Quacksalver I might tell you how it weakens the brain, how that weakness causeth defluxions, and how those defluxions hurt the lungs and the like. But I had rather tell you that although you read 12 hours *per diem* or more, that you shall really profit by no more of what you read, then by what you remember, nor by what you remember, but by so much as you understand & digest, nor by that, but by so much as is new unto you, and pertinently set down. But in 12 hours; how little (according to these rules) can you (who know so much already) advantage yourself by this laborious way? How little of true history doe our books contain? how shy is every man to publish any thing either rare or usefull? How few opinions doe they deliver rationally deduced, but from their own principles? and lastly, how few doe begin their tedious systems from principles possible, intelligible, and easy to be admitted?

On the other side, what a stock of experience have you already /fol. 71/ in most things? What a faculty have you of making every thing you see an argument of

[a] For William Petty see above, p. 64.
[b] John Ward (c. 1679–1758), professor of rhetoric at Gresham College.
[c] This is a reference to Anthony Morgan (1621–68), soldier, MP for Irish constituencies and original F.R.S. He was first a supporter of the royalists then of the parliamentarians.
[d] Petty refers to Boyle's brothers, the 2nd Earl of Cork and Baron Broghill.

some usefull conclusion or other? How much are you practised in the method of cleere and scientifical reasoning? How well doe you understand the true use and signification of words, whereby to register and compute your own conceptions. So well are you accomplisht in all these particulars that I safely persuade myself, but, that your modesty thinks every scribler wiser then yourself, that you can draw more knowledge and satisfaction from two hours of your own meditation, then from 12 hours endurance of other mens loquacity. For when you meditate, it is always upon some thing that you are not yet cleere in; (and a little armor will serve, being put upon the right place) but when you reade; you must take your chance, and perhaps be corrupted with lies, disgusted with absurdities, and tired with impertinencies, or made ready to vomitt, at the *bis (imo centies) recocta crambe* offered unto you.[a] Besides what a difference is there between walking with our naturall legs, and crutches? or betweene a cloth, whose subtegmen is the same from end to end, and another, peeced up out of a 1000 gaudy rags! But the proverb (*verbum sapienti*) forbids me to be more tedious.[b] The next disease you labour under, is, your apprehension of many diseases, and a continual fear that you are always inclining or falling into one or other. Here I might tell you, the vanity of life; or that to fear any evil long is more intollerable, then the evil itselfe suffered; &c.

But I had rather put you in mind, that this distemper /fol. 71v/ is incident to all that begin the study of diseases. Now it is possible that it hangs yet upon you, according to the opinion you may have of yourself rather then according to the knowledge that others have of your greater maturity in the faculty. But *ad rem*;[c] Few terrible diseases have their pathognomonical signes; Few know those signes without repeated experiences of them, and that in others, rather then themselves: Moreover; The same inward causes produce different outward signes, and *vice versa* the same outward signes may proceed from different inward causes; and therefore those little rules of prognostication found in our books, need not always be so religiously beleived. Again 1000 accidents may prevent a growing disease itselfe, and as many, can blow away any suspicious signe thereof, for the vicissitude whereunto all things are subject, suffers nothing to rest long in the same condition; and it being no farther from Dublin to Corke, then from Corke to Dublin, why may not a man as easily recover of a disease without much care, as fall into it? My Cousen Highmores curious hand hath shewn you so much of the fabrick of mans body, that you cannot think, but that so complicate a peece as yourself, will be always at some little fault or other.[d] But you ought no more to take, every such little struggling

[a] Petty praises Boyle's intellectual virtues in contrast to 'the twice (even hundred times) recooked' thoughts of other men.

[b] Petty cites the maxim 'A word to the wise [is enough]', (*Dictum sapienti sat est*), first recorded in Plautus, *Persa*, l. 729.

[c] 'to the business'.

[d] Petty refers to his friend Nathaniel Highmore (1613–85), physician and neighbour of Boyle's.

of nature for a signe of a formidable disease, then to fear that every little cloud portends a cataract /fol. 72/ or hericane. To conclude, this kind of vexation hath been much my portion, but experience and these considerations have well eased me of it.

The last Enditement that I bring against you, is practising upon yourselfe with medicaments (though specifics) not sufficiently tryed by those that administer or advise them.

It is true, that there is a conceipt currant in the world, that a medicament may be physick and physician both, and may cure diseases *a quacunque causa*:[a] But for my part I find the best medicament to be but a toole or instrument; now what are Vandijks Pencills & Pallet, in the hands of a bungling Painter, to the imitation of his peeces?[b] Recommendations of medicaments doe not make them useful to me; But doe only excite me, to make them so, by endeavouring experimentally to find out the vertues and application of them. There be few medicaments that can be more & more really praised, then diapalma and Basilicon; for they have been carryed up and down in all Chirurgens Salvatoryes for these many hundred years; yet how few can perform any excellent cures by them or such others? How hard it is to find out the true vertues of medicaments, as I weep to consider, so I dread to use them, without my utmost endeavours first employed to that purpose. /fol. 72v/

Though none of these arguments prevaile with you, yet I shall pray that nothing of evil consequent to the things, from which I have dissuaded you prevail upon you. The desire of your encrease in knowledge, and (in order thereunto) of your health, hath made me thus troublesome; for if what I have said, came from any other principle, I should be ashamed to write myselfe thus confidently.

Sir
your obliged servant
W[m] Petty

Dublin
15 April 1653

JOHN WILKINS[c] to BOYLE — 6 September 1653

From the printed version in Birch (ed.), *Works* (1744), v, 629–30. Also printed in Birch (ed.), *Works* (1772), vi, 633–4.

[a] 'from any cause whatsoever'.
[b] Petty alludes to the Flemish painter Sir Anthony Van Dyck (1599–1641).
[c] John Wilkins (1614–72), natural philosopher and divine.

Wadham-College, Sept. 6, 1653.

Honoured Sir,

YOU have so well acted the part, which belongs to me, of returning acknowledgments for the favours recieved at *London*, that I am as much ashamed, as unable to imitate you.[a] But I have known, Sir, that you are a great master of civilities as well as learning, and therefore shall in all things most willingly submit. I had thought you had gone out of town shortly after the time I waited upon you, which was the reason I did not attempt to trouble you with a visit.

THIS bearer is the young man, whom I recommended to you.[b] I am apt to believe, that upon trial you will approve of him. But if it should happen otherwise, it is my desire he may be returned, it being not my aim so /p. 630/ much to prefer him, as to serve you, which your own eminent worth will always oblige me unto with my utmost zeal and fidelity. If it be not, Sir, prejudicial to your other affairs, I should exceedingly rejoice in your being stayed in *England* this winter, and the advantage of your conversation at *Oxford*, where you will be a means to quicken and direct us in our enquiries. And though a person so well accomplished as yourself, cannot expect to learn any thing amongst pedants, yet you will here meet with divers persons, who will truly love and honour you.[c] And it is the more generous kind of felicity to teach and do good, than to learn and receive it. If I knew with what art to heighten those inclinations, which you intimate of coming to *Oxford*, into full resolutions, I would improve my utmost skill to that purpose; and shall be most ready to provide the best accommodations for you, that this place will afford. I am,

SIR,
your true honourer, and
most faithful servant,
JO. WILKINS.

BOYLE to MALLET[d] — 23 September 1653

From the original in Boyle's early hand in BL 1, fols 116–17. 4°/2. Spaced so that signature appears at bottom of page.

[a] Boyle met Wilkins in the summer of 1653 when he returned to London from Ireland; see above, p. 135n.

[b] The bearer of this letter has not been identified.

[c] For the Oxford scientific community in the 1650s see Frank, *Harvey* (above, p. 66), esp. pp. 43–62.

[d] For Mallet see above, p. 103.

Previously printed in Birch (ed.), *Works* (1744), i, 32 and Birch (ed.), *Works* (1772), i, lii–liii.

Sir,

If the suddenness of that unwelcome Necessity which hurry'd me from Stalbridg, would have allow'd me so much as two dayes stay ‹in› those parts; I should not be now reduc'd to make You an Apology for my leaving Stalbridge before I kiss't your hands at Poynington.[a] And though the Urgency of my occasions allow'd me but one day to packe up bag & baggage[1] & settle my Affaires there; I should have spent part of that Day in paying You the Duty & giving my selfe the satisfaction of a Visit, if the gretest Obstacle my hast put to my Desires, had not been the Tyrednesse of my Horses, by my preceding Journeys. The Apprehension of loosing my Passage unlesse my arrivall here prevented the fear'd Change of the wind, posted me so abruptly hither, that it allow'd me to comply neither with my Civility nor with my Inclinations; the latter of which are never more gratify'd, then in Your charming Conversation; which the Winds Crossnesse since my arrivall here, makes me very much regret I did not venture to give my selfe the Happynesse of. The sad Condition of Ireland making me somewhat irresolute of my going thither this winter; I do not wholly deny my selfe the pleasing thoughts of being happy in Your Company at Poinington; but in case a faire wind blow away those thoughts, I must implore in the Want of Your /fol. 116v/ immediate Conversation, that which is practis'd by Letters; as the next Contentment to the former by neerlyest approaching it. If the necessity of repairing into Ireland to settle my Affaires there, now things seeme tending to a Settlement in that unhappy Country; I shall leave behind me at Stalbridge, the Bearer, Roger Ball; & with him a Lease of that Mannor for some yet unexpired Yeares: in which Lease You were pleas'd to allow me to have Your Name put in as a Trustee for me.[b] The Reason of my mentioning this to You, is; that by the Mistaking Confidence of honest old Mr Mawdesley then Steward of my Courts at Stalbridge, I[2] made severall Grants there, as presuming I had power to do so, which, upon more knowledge of the Law & a more heedfull Perusall of my more then ordinarily strict Entayle, I found, though hardly overthrowable in Equity, yet to be questionable in strictnesse of Law.[c] My just tendernesse in Cases of this nature, made me[3] extreamly troubled that my Ignorance had made me do what knowingly nothing should: & therefore by Sir Thomas Mallet's excellent Advice, finding a Lease ‹of Stalbridge› for about 30 yeares unexpired to remaine in[4] the hands of an old Servant of my Fathers; I made it one of my Motives to go into Ireland & one of my concerningest Businesses

[a] For Pointington see above, p. 105n.

[b] Roger Ball, the bearer of the letter, is also mentioned below, in Boyle to Mallet, 22 Jan. 1654.

[c] Mr Mawdesley has not been identified, beyond what is written here.

there, to get this[5] Lease assign'd over in trust to Your selfe & Roger Ball;[a] with whom I have left order that in Case God should call me to himselfe before my returne to Stalbridge, he shall beg You to joyne with him in making every Tenant whose Grant is questionable, a Lease of as many Yeares as Your Authority extends to grant; that so these poore Men in case their Titles (contrary to my Expectation & to Probability) should be overthrowne as to their first ‹Grants›,[6] may have a good Title to al the unexpir'd Yeares of Your Lease; & that Number, according to common estimation, will be as /fol. 117/ advantageous, if not better, then their first Grants. I find, Sir, no small trouble in the necessity of giving You this great one; but I am confident You are such a Friend to Justice, that You will pardon a Fault that proceeds only from some tendernesse of that Vertu in a Servant of Yours, who very well knowing Gratitude to be a Vertu as well as Justice, if not a Part of it; is not made more desirous by the Lawes of the former Virtue to secure his Tenants, then the Dutys of the latter will make him of the opportunity of expressing & evincing how highly he is Mr Mallet's

Bristoll. Sept.
the 23rd
1653.[7]

Affectionate, faithfull &
obliged humble servant
Robert Boyle.

[8]I shall begge the favor of having my most humble service presented to Sir Thomas Mallet & my Lady,[b] & to Your owne Faire Lady with the rest of Your Family to all which You have engaged me to be a Servant. If the Bearer shall in my Absence apply himselfe to You for Directions, Your vouchsafing them to him will very much oblige me. If You please to make me at any time happy in Your Letters, it will as well instruct as satisfy me, to be inform'd how You[9] proceed in relation to Your Eastern Studys.[c]

For his highly ho/nored Friend
John Mallet. / Esquire
at / Poynington.

Seal: Crest only: *lion's head erased*.
Endorsed on fol. 117v in Mallet's hand 'Mr Boyle 1653'.[10]

[a] For Sir Thomas Mallet see above, p. 103n.
[b] For Mallet's wife see above, p. 106n.
[c] For Mallet's interest in Eastern languages see above, p. 140.

BOYLE to [FREDERICK CLODIUS][a] 27 September [1653]

From the version in a scribal hand[b] in BL 2, fol. 20. Fol/1.
Previously printed in Birch (ed.), *Works* (1744), v, 229, and Birch (ed.), *Works* (1772), vi, 35.

Sir

Though the favours you heap'd upon mee at London were both very Numerous & very Greate, yet cannot I esteeme any (not to say All) of them superiour to the welcome promise you were pleased to make mee before & confirme at our Parting, of a constant Correspondency during our Separation. For not only your Letters will continue to me the happinesse of youre Conversation, but will hinder it from becomming occasionally a disquiet to mee, which it would certainely prove, if having enjoyed it enough to long for more[1] of it, youre Pen should not gratifie the Desires youre Tong hath created. Since then, Sir, you are pleas'd not only to allow but to command me to write to you, I am too much a freind to my owne Inclinations, not with equall Joy & Readinesse to obey you: and I hope you will pardon mee if my Desire of seeing the English Language honour'd by your Skill in it, make mee willing to engage you to be more conversant with it, by employing it in my Letters to You. And the same j[ust] Concerne for the glory of the English Tongue obliges mee to besee[ch] You not to doe it the Injury to judge of it by my writing it; for [it] is not more true that being a very bad Secretary, I cannot expresse [my] Thoughts otherwise then very dully in it, then it is, that[2] my U[neloqu]ent expressions are imputable to the writer not the Tongue; for I t[hink] I may say without flattering it, that though I have [be]ene [a m]uch greater studyer then Prizer of Languages, I have not lea[rn]'d [a]ny; besides the Greeke, in which good thoughts may be expr[esst] with lesse disadvantage, & that he would be superiour both to Demosth[enes] & Cicero, that were fruitfull in as choice conceptions as m[a]y be [hap]pily expresst in English.[c] All this I had sooner written to you; & ha[ve] earlyer paid you the duty of this Letter, if I had not been withheld [by] the apprehension of disturbing your Joyes. For I am told that Hymen makes you recant the Opinions you lately defended against the Soveraignty of Cupid: They say your grand Theme is now, noe longer the Prerogatives of a free Heart, and the Advantages of a Single Life, but a certaine frame of Mind exprest long since by

[a] It is evident from its content that the letter is to Clodius; it seems likely to date from approximately this time, when his marriage to Hartlib's daughter took place.

[b] The hand is the same as that used in the manuscript of 'Atomical Philosophy', *Works*, vol. 13, p. 225ff.

[c] Boyle refers to two great classical rhetoricians, Demosthenes (c. 384–322 BC), Athenian orator and statesman, and Cicero (106–43 BC), Roman orator.

Omnia vincit AMOR, et nos cedamus AMORI[a]

But though your late Contempt of Love & Women & the Railleries with which you threatened mee, in case I did what I may now doe only to Imitate You; give me both Cause & Rise enough to punish you, & to let you see that I have not been causelessely thought sufficiently stor'd with Declamations against Cupid & Hymen; yet I shall willingly sacrifice my Resentments and[3] this inviting opportunity of expressing them to your Allyance with honest Mr Hartlib. For I cannot conclude you lesse a servant to Philosophy, by choosing a Mistresse in his family, /fol. 20v/ and I cannot but looke upon it as an Act of his Grand Designe to oblige this Nation, that he hath found this way to detaine you amongst us.

Since I began this Letter I received a Peremptory Information of your Marriage, in which I wish you & youre Bride as much Happynesse as ever that Relation afforded any. A longer Letter would now, perhaps, be an unseasonable Interrupter of youre Joyes; & therefore, though not to violate the Lawes of our Commerce, I dare not[4] send away this Paper without something Philosophicall in it; yet what I shall now enclose you, shall be only a way to make wine to drink the Brides Heath [*sic*]; which (as little as I love any strong drinke) that I may doe to you, I heartily wish my selfe for a few houres at London. Having received this Processe from a freind as a Secret; I shall beg you would not let it loose that Name: & if the Inventor of this artificiall wine doe not flatter it, England may afford us as Generous though not as Lasting Wine as the Canaries. I should now likewise send you the way of Making Wine & Spirit of wine out of Corne; but the unwelcome[5] Affaires that distract mee here, have at[6] present put it out of my head;[7] & the Papers I have of it being in one or other of my Truncks, some of which are already ship't & the others ready to be sent aboard; I must suspend the sending you that Processe till the next Trouble I give You of this Nature: & in the meane time shall desire you, to doe mee the Favour to Name mee an humble Servant to the faire Lady, that hathe freed you from the constant Trouble of defending youre Heart; for though in makeing her selfe happy she have oblig'd all the Ingenuous Persons in England, by procuring them the happynesse of youre Presence; yet is there none in all that Numerous Company, that[8] her stopping You at London hath soe highly & soe sensibly oblig'd, as he that stiles himselfe

Sir
Youre most affectionate most faithfull
& most obliged humble servant

Bristoll this 27th
of September.

[a] Boyle quotes from Virgil's *Eclogues*, x. 69, 'Love conquers all, and we yield to love'. He alludes to Clodius's recent marriage to Mary, daughter of Samuel Hartlib.

Biographical endorsement by Miles at head of fol. 20: 'NB Dr Clod who was accounted Skilful in Chemical Processes & Corresponded long with Mr Boyle, married a Daughter of Mr Hartlibs, and probably is the person to whom this was sent. / I find Clodius (as he sometimes wrote himself) was married in 1654. how long before I know not'.
MS also contains printer's marks.

— 1654 —

Lost letters dating from 1654 are as follows:

Three letters from the second Earl of Cork to Boyle, dated 15 August 1654, 18 September 1654 and 18 October 1654 are referred to in the second Earl of Cork's diary (see above, pp. xxvi–xxvii).

Lost letters referred to in surviving letters are as follows:

A letter from Boyle to Hartlib, 10 January 1654 (below, p. 154).

A letter from Clodius to Boyle of about 9 May 1654 (below, p. 179)

BOYLE to MALLET[a] 22 January 1654

From the holograph original in the British Library, Add. MS 32093, fols 318–19. Fol/2.

Not previously printed. Listed in *RCHM*, *Fifth Report*, p. 314.

Sir

I had much earlyer acknowledged my resentments of that obliging Letter wherewith You were pleas'd to endeare to me Roger Ball's Packet;[b] if the want of a sure hand to [conv]ey an Answer by, had not hitherto necessita[ted?][1] my s[lowness?] But meeting now with an opportunity to e[nlarge][2] it, I must no longer containe the just Gra[ti]tude that engages me to returne You my most humble & most deserved Thankes for that excellent Letter, wherein I must yet complaine of Your having gratify'd your Civility & Your Witt too much to the Injury of my Modesty & Your owne Meritt; the latter of which is highly detracted from in all those Passages of Yours, that misascribe my Dutys to it, to any Motive lesse just then my sense of the Greatnesse of it. My leaving England without the Honor of Your Commands into Ireland, was too purely my Misfortune to need your Apology[,] nor am I so much a stranger to my owne Defects as to ignore, that 'tis

[a] For Mallet see above, p. 103.

[b] For Roger Ball, letter-bearer, and the packet of letters for Boyle, see above, p. 146n.

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enough You are pleas'd to suffer so ill company at Poynington, & that 'twere unreasonable to expect You should (with the Neglect of better, because other, Avocations) seeke it as farre as Bristoll.[a] The other Complements wherewith Your Lines are replenisht, must produce my Blushes not my Replyes; for as not to beleeve them Complements would make them more such; so to[3] be able to returne them, were almost to be capable to meritt them. Your Wishes for my quick Passage, are as accomplisht as they were obliging; for God was pleas'd to vouchsafe me a Passage happy beyond Expectation, & unallay'd but by the sense of it's severing me further from You. The Intelligence this wretched Country affords, is so inconsiderable in respect of that which the Greate Revolutions & Transactions in England dayly /fol. 319v/ entertaine You with, that I feare it[4] will scarce prove any way worthy of your Curiosity, unlesse the Concerne You are pleas'd to have for a thing so much Your owne as I, give You some attention for Newes otherwise too despicable to invite it.

The Taxes continue as insupportable as ever, & dayly drive some out of their Houses & others into their Graves, which You will easily beleeve, when I have inform'd You that in a bordering County, the starving Natives pay thirteen shillings a month Contribution for a single Cow; which I mention to lessen the weight of Your Pressures of that sort in England, by letting You see how much lighter Your (thogh too heavy) Burthens are, then ours, who in many Places ‹too›, inhabit but a[5] Desert scarce peopled with any thing but foure-legg'd or two-legg'd Wolves. But in June next we are promis'd so greate an Easement, that the Landlord shall pay but the fourth part of his yearly Rent, & the Tenant but the 4th part of the annuall Interest (after 10 in the 100) of his Stocke; a ‹settlement›[6] which would no where be more repin'd at, then here it is desir'd.[b] The Torys have of late been very destructively active, & particularly to the Prejudice of divers of my Tenants, but within this weeke most of their Ring-leaders, very well attended, have lay'd downe Armes, & the greater part of the rest are solliciting for termes that may invite them to do so too.[c] Three or 4 dayes since there were some store of Armes & Powder found neere a strong Castle of my Brother Broghill's, in the house of an Irish Gentleman who hath thereby given such suspicion of some bloody Dessein of the Natives against the English, as is like this morning to cost him his Life.[d] From the Fastnesses of these Parts the Irish are to be removed into Connaught ([and][7] I am like to get some part of a Wast Estate [unin]habited by the Shift) but elsewhere

[a] Boyle possibly refers to his return to Ireland in Sept. 1653 after a spell of three months in London and Stalbridge; see Maddison, *Life*, p. 80. For Pointington see above, p. 105n.

[b] In 1654 the Irish monthly assessment was reduced from £30,000 to £10,000; see T. C. Barnard, *Cromwellian Ireland* (Oxford, 1975), p. 28.

[c] The Tories were the diehard supporters of the Irish rebellion fighting a guerrilla war against the English.

[d] No further details about this incident have come to light. Broghill owned several castles in Munster.

we have (t[o] greate Joy) exempted the Inoffensive Plowman from the threatned Transplantation, which[8] will be almost confined to those that are Free-holders or have been soldiers.[a] Yet amongst all this Ruine & these Distractions, a Brother of mine that is Governor of this County hath found l[ei]sure newly to print foure Tomes of an English Romance, which at London hath had amongst divers of the Witts a very favorable Reception; which if You ‹too› vouchsafe it, when I, (as I hope to do ere long) shall bring it You, I shall either be very uninquisitive or very unconcerned in others Judgments of it.[b] I intended You very greate Acknowledgments of the very greate Favor You do & promise me, in accepting the trouble of [that] Lease wherein I made bold to use Your Name;[c] but the Gentleman who is to carry this [letter?] being just now taking horse & tarrying for it, I must suspend [until the] next conveniency the unabrupt professing how much (without Com[pliments?]) Your high & equall Prerogatives & Civilitys have made me,

Youghall this 22th of Janu. 1653/4

Sir,
Your affectionate & obliged humble servant Robert Boyle.

[9]I shall desire to be nam'd, as indeed I have much reason to be, a most humble servant to Your excellent Father & Mother & Your Faire Lady.[d] If You see my Lady Bristoll, I shall beseech You to present my most humble service to her & all the Sherborne Family, being disabled to write by the pressingnesse of the Bearer, which makes me need & humbly beg your Pardon for this[10] alike tedious & hasty scribble.[e]

For my highly honored / Friend John Mallett
Esquire at Poynington / in Sommersetshire.

This Letter is to be left at
Bristoll with the Stalbridge / Carryer to be delivered to
Mr Roger Ball at Stalbridge / in the County of Dorset.

[a] Boyle refers to the Cromwellian land settlement whereby all Catholic landowners were transplanted to Connacht and Clare.

[b] For Lord Broghill's romance, *Parthenissa* see above, p. 84n. Parts 1–4 were printed at Waterford in 1654. This letter suggests that they had already been printed off by late 1653, in which case a title-page dated 1654 would conform to general practice.

[c] For this lease, see below, p. 258.

[d] For Mallet's father, mother and wife see above, pp. 103n., 106n.

[e] Presumably Boyle refers to Beatrice Digby, widow of the 1st Earl of Bristol, for whom see above, p. 106n.

Seal: Damaged example of that on Boyle to Mallet, 2[3] March 1651/2.
Endorsed at head of fol. 318: '1654'. Also endorsed on fol. 319v: 'Mr Boyle 1653' and 'Letters from the Hon. Robert Boyle Esquire to Sir John Malet of Poyntington & St Audries in C[o]m[itu] Som[erset]'. Further endorsed on same folio: 'Paper relating to the Family of Malet of St Audries. Com[itu] Som[erset].'

HARTLIB to BOYLE — 28 February 1654

From the printed version in Birch (ed.), *Works* (1744), v, 257–61. Also printed in Birch (ed.), *Works* (1772), vi, 78–83.

Dear SIR,

YOUR first and last from *Ireland*, dated at *Youghall* the 10th of January, 1653–4, I received yesternight, very late.[a] The 30th of September answered your's from *Bristol*, but do not perceive, even by this, whether the same packet did ever come safely to your hands. I should not have failed to perform my promise of writing, as I was really resolved to do it every week, if yourself had not been in fault. For my promise was grounded, as you remember, upon your first writing from *Ireland*, which was never received till now: besides your dearest sister was so discouraged, having sent seven or eight letters, to which she had gotten no answer, that she was more than inclining not to write any more unto you.[b] I cannot also but remember, with what resolvedness you promised to be back again in *February*, or sooner; which now being past, you see, upon your intimation of a longer stay, how ready I am, without the interposal of one day, to fulfil, in some measure, all your desires and expectations; I say in some measure, for there are some things fallen out since your departure, which it is not lawful to utter by writing, but are as certainly your's, as those that do possess them, as soon as God shall afford a fitter and more certain opportunity. For my lady tells us, that she expects shortly another letter from you by a ship, which is to let her know, how your posture shall be stated, for coming or staying; which will also direct us how to carry ourselves in our communications for the future. But O! that it would please God to order your affairs in such a manner, that you could be with us before so many months be expired as you have calculated, according to the Irish account! We expect every week to hear more from *Johannes Baptista Coen*, who hath been a great while with *Faber*, that famed pre-

[a] This letter is not extant. For Boyle's residence in Ireland in 1652–4 see above, p. 135n.

[b] Hartlib refers to Boyle's sister, Lady Ranelagh. She is also referred to as 'my lady' some lines later.

tender in *France*, but is now at *Diepe*.[a] It is not impossible, but I may tell you in my next, God willing, that he is not far from the place, where once Charing-cross /p. 258/ did stand. Some months ago I received a letter from Mr. *Worsley*, in these words, among other particulars. 'I wrote to you, a while since, and in it took the boldness to write to monsieur *Clod*, in which you must deal plainly and honestly with me, if I took too much liberty or freedom in asking his opinion, about a matter of so much judgment and weight.[b] For the truth is, I have laid all considerations in chemistry aside, as things not reaching much above common laborants, or strong-water distillers, unless we can arrive at this key, clearly and perfectly to know, how to open, ferment, putrify, corrupt and destroy (if we please) any mineral, or metal; which being withal not indeed to be done, unless by one, that discerns the nature very well, I presume it is therefore said, it is easier to make some metals, than to destroy them. Not that I apprehend it is to be understood, the work is easier, to make a metal, than to destroy it; for that were impossible, seeing a natural putrefaction and corruption is the first thing in order to be done towards the making, transmuting, or multiplying of any metal. But I conceive the meaning rightly to be, that a man once knowing how to corrupt or destroy a metal, it is then nothing near so difficult, for him to proceed further, and to make a metal, as it was at first, or is now generally to men, to understand, how they should begin to destroy a metal. In this therefore, both principally and only, I conceive learning, judgment, or wisdom to consist, either as to the knowledge of true medicine (other preparations short of this being not much to be valued) or as to the carrying on of a higher work in nature. And being led by some serious considerations to see the necessity of this (and the smallness of most chemical operations besides this) the same hand of goodness did dispose my mind to comprehend both the possibility, and somewhat of the way of it, and nature of the course concerning it, which I confess did provoke and occasion that freedom with monsieur *Clod*; as resolving not much to prefer a correspondency of any hands, in things chemical or medicinal, unless this, as I either may be an assistant towards it, or be assisted in it. And although I may say, I see already so much in it, as to prefer it before any other natural knowledge, or, perhaps, employment; yet I can find nothing very valuable or very desirable, either in myself, or others. And when I have once a while considered things, I find myself as much inclined to fear or suspect them, as I do to wish them.'[c] Thus far that noble and high soaring spirit, which I thought good to represent unto your better considerations, which you say are engaged, for the

[a] Hartlib refers to Johann Baptista Coen, French savant and chemist. In 1654 Coen lived in Paris and was known to Digby and Moriaen. 'Faber' is likely to be Pierre-Jean Fabre (c. 1620–after 1656), physician and chemist from Castelnaudry in France. See A. G. Debus, *The French Paracelsians* (Cambridge, 1991), pp. 75–6.

[b] Hartlib alludes to his son-in-law, Frederick Clodius.

[c] The letter from Worsley to Hartlib has not been found.

present, in a short essay concerning chemistry, by way of a *judicium de chemia & chemicis*.[a] As for us, poor earth-worms, we are crawling in my house about our quondam back-kitchen, whereof my son hath made a goodly laboratory; yea, such a one, as men (who have had the favour and privilege to see, or to be admitted into it) affirm, they have never seen the like, for its several advantages and commodiousnesses.[b] It hath been employed days and nights with no small success, God be praised, these many weeks together. But what particulars it hath hitherto produced, and what greater medicines he is taking in hand this week and the next, I suppose this my obedient and very chemical son will be able better to relate unto you, than myself. I could wish the like account could be given of Dr. *Stirk*, but he is altogether degenerated, and hath, in a manner, undone himself and his family. I know not directly how many weeks he hath lain in prison for debt; but after he hath been delivered the second time, he hath secretly abandoned his house in *London*, and is now living obscurely, as I take it, at *Rotherhith*. He hath always concealed his rotten condition from us; nor hath there been any communication between him and my son, as long as you have been in *Ireland*.[c] Mr. *Webb* doth now rail at him and curse him, as having been most wretchedly seduced and deceived by him. Many weeks ago he promised me to write diligently unto you, but hath never sent one letter since your going from hence. I hear there are secret transactions between him and my lord *Dover*; but I am afraid they will all vanish into smoke.[d] When God hath brought you over again, we shall leave him altogether to your test, to try whether yet any good metal be left in him, or not. But the best is, that he stands more in need of us, than we of him. I am glad that ens Veneris hath done so much good in *Ireland*.[e] My son, and many others, can tell you of the strange vertues and effects, which his laudanum hath already produced among us here. The course, which you have purchased of your excellent surgeon, to cure the stone in the kidnies, will be very welcome, whensoever you shall send it.[f] After those great and most universal arcana are prepared, my son, both for your and my sake, will set himself on purpose, God blessing his endeavours, to perfect those other Helmontian preparatives concerning the ludus with the sal armoniack. I need not tell you again (for I hear, that you know it already) that Dr. *Boat*, when he was come as far as *Diepe* towards *England*, being let blood by those common butchers of

[a] Evidently one of Boyle's writings on chemistry of this period, for which see *Works*, vol. 2, p. xix; and vol. 14, pp. 329–30.

[b] The reference is to Hartlib's son-in-law, Frederick Clodius.

[c] Hartlib refers to George Starkey, for whom see above, p. 90n. Starkey had left the laboratories at St James's and entered a period of misfortune.

[d] This is presumably Francis Webb, on whom see above, p. 94n., and Newman, *Gehennical Fire* (above, p. 48), pp. 82–3. Hartlib also refers to Henry Carey (1580–1666), 1st Earl of Dover.

[e] Starkey and Boyle collaborated in the preparation of *Ens veneris*, a copper compound. See *Usefulness I* (1663), in *Works*, vol. 3, pp. 391–2. Clearly Boyle used this pharmaceutical in Ireland.

[f] The surgeon in question has not been identified.

human kind, departed this world; which really is a very great loss to the commonwealth of learning.[a] In his last, of the 18th of October, 1653, he wrote unto me as followeth:[b] 'Pray present my humblest service to Mr. *Boyle* and Sir *C. Culpepper*: and tell the first, that here is newly come forth a *Treatise des arbres fruitiers* (which, God willing, I shall bring him, with the rest of that subject desired by him) and the other, that in all *Paris* there is not to be had one grain of Lucern seed, not only of this, but not so much as of the last year's growth.'[c] Thus far that blessed soul. I make no question, we shall find that treatise in *Paul*'s Church-yard; or it may easily be /p. 259/ procured with the rest from *France*, if you will let me know the particulars of that commission, which you imparted to the late doctor. But how to gain another treatise, designed by the foresaid worthy man, upon my most earnest solicitations, I am utterly at a loss, except Dr. *Child* from *Ireland* succeed him in the pursuit of that weighty subject.[d] For having dealt much with him, about the completing his *Natural History of Ireland*, by procuring that encouragement, which he demanded, he was pleased to encourage me again with another undertaking, in these words: [e]

'You may encourage our friends to do as much by me for to set me on work about another (besides the perfecting of the *Natural History of Ireland*) production, viz. my intended book of the whole nature, intrinsical qualities, preparations, and all manner of uses of saltpetre; a natural body of too noble a nature, and too universal use, for to be so much neglected, and unknown, as hitherto it hath been. I have not so much as begun that work yet, but having all the materials ready for it, *partim in chartis & partim intra caput*,[f] a few months at any time will serve my turn, for to give it its being.' In the mean while, receive here that special, secret and ingenious speculation of my friend, the great experimenter, of whom I told you lately, in the very words, wherein I set it even from his mouth, being as followeth.[g] 'Having been told, that one Mr. *Jursang* and monsieur *la Grange* here gave out, to

[a] Hartlib refers to Arnold Boate (1606–53), Hebraist and physician. See Webster, *Great Instauration*, pp. 64–5.

[b] The letter from Boate in Paris to Hartlib, dated 8/18 Oct. 1653, is HP 55/14/18A.

[c] For Sir Cheney Culpeper see above, p. 63n. The treatise Hartlib refers to is that of Sieur Le Gendre, curé d'Hénonville [i.e., Robert Arnauld d'Andilly], *La manière de cultiver les arbres fruitiers* (1652). An English translation (attributed to John Evelyn) appeared in 1660. Boate sent Hartlib a number of letters from Paris on the subject of lucerne in reply to the latter's queries. See *Samuel Hartlib His Legacy* (3rd edn, London, 1655), pp. 98–104, 250–3.

[d] For Robert Child, author of 'A Large Letter … to Mr Samuel Hartlib', which occupies most of *Samuel Hartlib His Legacy* (1651), see above, p. 133n. See also Webster, *Great Instauration*, p. 46.

[e] The first book of *The Natural History of Ireland* was written by Gerard Boate from information supplied by his brother Arnold and others. It was published by Hartlib in *Irelands Naturall History* (1652). Gerard Boate (1604–50), went as physician to the hospital in Dublin towards the end of 1649 and died there in Jan. 1650.

[f] 'partly on paper, and partly in my head'.

[g] Neither Hartlib's friend and correspondent, nor Mr Jursang have been identified. However, Monsieur la Grange could be Thomas Lièvre (1600–69), marquis de la Grange, statesman and jurist.

have found out a way to make saltpetre grow, but that they would not discover it under ten thousand franks, he set his wits at work, for to find out the way, and made no doubt but it might be done thus: viz. Taking a parcel of good ground, well digged and well manured with dung, as for the richest corn, a cover is to be made over it, for to exclude the sun, and to hinder the growing of any herbs (which would hinder the growing of saltpetre) and then to sow saltpetre on it; which might most commodiously be done, by dissolving it in water, and throwing the water on the ground. The proportion he thinks to be a pound of saltpetre for a foot square of ground; after half a year you may pare away half a foot deep of your ground, and half a year after another half foot, and so from time to time, and you will have an everlasting mine of saltpetre; and the deeper you come, the better it will be; but if at first you should pare it too deep, and cut away too much, you would mar all. After the paring away of the upper crust, the ground must still be digged afresh.' Thus far my friend's invention. *Hactenus ille*.[a] The latter passages of the secret I have added, being desirous to have that description concerning the Hamburg saltpetre (whereof you may inform yourself again from Mr. *Van Mussig*) under your own hands.[b] But to return to the remaining contents of your letter, I must now most solemnly call upon you, on the behalf of the *Natural History of Ireland*, which, if yourself and Dr. *Child* do not take professedly to task, I fear will never be perfected to any purpose;[c] at least, if so much could be done in it, as to have all the interrogatories judiciously answered (of which, God willing, I shall send you more copies) it would be a considerable addition to a second edition of this imperfect work, which I formerly have published.[d] I pray therefore, Sir, do not fail to give or procure me as ample an account, as possibly you can, concerning this affair. As soon as I have made an end of this letter, I purpose to send for those Arminian books, which you have desired.[e] If they may be had, the interrogatories shall be sent in the same packet with them, according to your direction. I am sorry, that the transplantation of the Irish should be that dismal occasion of your stay; but my comfort is, that you may get far better tenants, and that could not be so

[a] Hartlib effectively repeats the preceding English sentence in the Latin: 'Thus far he'.

[b] This is a reference to Johann Brün, or Unmussig, Paracelsian physician, who settled in England in 1648 and then in Ireland, where he was appointed physician in Cork. He probably settled finally in Dublin, for he was supplying medicaments to the Countess of Orrery in 1668; see Edward McLysacht (ed.), *Calendar of the Orrery Papers* (Dublin, 1941), p. 61. See also Webster, *Great Instauration*, pp. 78, 81, 302, 304.

[c] Child's commitment to the completion of the second part of *The Natural History of Ireland* is attested to by a number of letters from him to Hartlib; see HP 15/5. However, Child died soon after starting his work in Ireland in 1654.

[d] Hartlib alludes to *An Interrogatory Relating more particularly to the Husbandry and Natural History of Ireland*, published as an appendix to the 2nd edition of Hartlib's *Legacy* (1652).

[e] The Arminian books in question have not been identified, although it is possible that Grotius's *De veritate religionis christianae* (1627) was one of them.

easily swept away, as those other, if you had but so much faith and courage, as to adventure yourself amongst us, and to let us enjoy your presence with all convenient expedition.[a] I confess, the transplantation of those many governments have swept away also almost all my tenants, that I cannot do, that which otherwise I had more largely intended. But my hopes and confidences towards God are stronger than ever, that my lands shall not always lye waste upon my hands. Sir, you complain of that barbarous (for the present) country, wherein you live; but if you would but make a right use of yourself, from the place where you live, towards Dr. *Child*, Mr. *Worsley*, Dr. *Petty*, major *Morgan* (not to mention others) they would abundantly cherish in you many philosophical thoughts, and encourage you, perhaps more vigorously than I can do at this distance and uncertainties, to venture even upon divers choice chemical experiments, for the advancement both of health and wealth.[b] And if *Stirk* shall continue his ungrateful obstinacy, yet give us but more certain assurance, either of your staying or coming, and we shall endeavour to fraight our letters with many Utopian intelligences, to express, at least, this way the very good will which we bear towards all manner of ingenuities.[c] If Mr. *Dymock* knew, that I was writing into *Ireland*, I am confident, he would present his most humble service, with his gratitude for former favours, unto you.[d] He is forsaken, in a manner, by all, and the lower, for the present, because I cannot any longer assist either his person, family, or inventions. By the last post I received an unexpected letter from the Scottish lord *Forbes*, in these very lines.[e] 'Having newly seen three small pieces, one called, *An Invention; &c.* another, *The reformed Husbandman*; the third called, *An Essay for Advancement of Husbandry Learning*;[f] I perceive you are still the old man, and your incessant endeavours to advance a publick good is never wanting, though such be many times misregarded, and not rewarded. Since it is my lot to be here, where I have been ever since I did /p. 260/ come from *England*, by that act of banishment, and resolves, God willing, to stay here, till it please God to send better times; out of the acquaintance I have formerly had with you, I am bold to entreat you to acquaint me what effect those three treatises have taken; and if they be practicable, communicate your knowledge with your old friend.[g]

[a] For the transplantation of the Irish see above, p. 152.

[b] For William Petty see above, p. 64n., and for Anthony Morgan, see above, p. 142n. In 1651 Morgan was appointed with Petty and Worsley to the committee to reorganise schools in Ireland.

[c] For 'Stirke' see George Starkey, above, p. 90n.

[d] For Cressy Dymock see above, p. 88n.

[e] Hartlib's reference is to Sir Arthur Forbes (1623–96), 1st Earl of Granard. The letter from Forbes to Hartlib of 21 Jan. 1654 has not been found.

[f] These pieces published by Hartlib in 1651 are *An Essay for Advancement of Husbandry Learning*, *The Reformed Husband-man* and *An Invention of Engines of Motion*, which was mainly composed of two letters from Dymock to Hartlib. See Turnbull, *H. D. & C.*, pp. 96–7.

[g] Forbes's exile in Sweden is not recorded by any of his biographers. Presumably it was his royalist activities which resulted in his banishment.

But if, for lack of patrons, such talents lye so long hid, if the gentleman, that writes to you, or any instructed or taught by him, will do me the favour to come hither to *Sweden*, I will find him patrons, that will afford him a plentiful maintenance.' The letter is dated at *Stockholm*, the 21st of Jan. 1654. I should be willing to part with him into *Sweden*, or any other place, which he could fancy: as to his invention of motion, of which I am no more so fond as I was wont to be.[a] Not that there is any defect in the said invention, but, according to the saying of *Terence*, *Tædit harum quotidianarum formarum*,[1] there appearing a far greater beauty and perfection in some other inventions of the same kind, which are going through my hands at this present; of which I shall be able to give you a more particular account shortly, there being already a reference made by his highness, for a patent for 14 years.[b] But that other part of his publick and private usefulness, as to all the parts of husbandry (I speak still of Mr. *Dymock*) is now the more to be regarded, and deserveth far better to be cherished and supported, than hitherto it hath been. Yet I hope he shall not need to go into *Sweden* for patronage, if God bless those other natural, chemical, or mechanical ingenuities, in which our confiding friends are so deeply engaged.[c] The husbandry directions about clover, here enclosed, I got from my lord *Brereton*'s eldest son, who obtained them once from colonel *Goring*, as I take it.[d] The other experiment, or the offer of it came from *Hamburg*, and is translated into Latin, and those other animadversions, for your sake.[e] I hear there is one Mr. *Haughton*, a gentleman, that lives in *Norfolk*, who hath for many years since used the husbandry of clover-grass, and hath an easy way, by the help of a kind of mill, to shell the husk from the seed, whereby his seed will not stand him in above two shillings per pound, which otherwise is sold in *London* for eight, ten, twelve, and sixteen shillings.[f] There is also a Dutchman, one Mr. *Bedloe*, for the present at *Amsterdam*, who promiseth to furnish husbandmen with a liquor, for imbibing of seed-corn, whereby the seed, being sown in the most barren ground (so it be fresh) shall produce as rich a crop, as the same quantity of seed would have done in the best prepared land, according to the usual course of husbandry; and the land shall continue to yield such crops for twenty years together, without any amendment or

[a] Forbes's offer and Hartlib's expressions here convey the nature of Hartlib's patronage of Dymock and other impoverished authors. On Hartlib's reservations about Dymock's invention see H. Dircks, *A Biographical Memoir of Samuel Hartlib* (London, 1865), pp. 97–100.

[b] Publius Terentius Afer (195–159 BC), poet. Hartlib quotes from *Eunuchus*, ll. 296–7, 'I am tired of these everyday forms'. The patent to which Hartlib refers has not been traced.

[c] For other patrons interested in Dymock's experiments see above, p. 88.

[d] Hartlib refers to William Brereton (1631–80), 3rd Baron Brereton, F.R.S. 1660, the son of William Brereton (1611–64), 2nd Baron Brereton, MP. For Lord Goring see above, p. 85n. The enclosure of husbandry directions is not extant.

[e] For Hartlib's correspondent in Hamburg see above, p. 137n.

[f] This is probably Robert Houghton/Haughton of Woolverton, Norfolk, J.P. and sometimes assessment commissioner in the 1650s; see D. E. Howell James (ed.), *Norfolk Quarter Sessions Order Book, 1650–1657,* Norfolk Record Society, 26 (London, 1955), p. 46.

manure, than what may come from the seed thus imbibed. The charge of the liquor will not be above twelve shillings a bushel. A gentleman of *Wales* (Mr. *Kemeys*) is said to have sown last year four acres of wheat in barren land, imbibed with the said liquor, of which I am promised a fuller relation in due time.[a] In my late published treatise, which I sent you, concerning division of land, *&c* there is an experiment, or secret, translated into English, which runs thus in the original.[b]

Frumentum eligatur ponderosum & masculum. Hoc enim solum in terram tanquam fœminam conjectum, vim generationis habet. Hoc ita electum imponatur in aquam fimi equini pinguem & foetidam, in qua tot libræ salis terræ, quot jugera seminanda erunt, dissolvantur, maceretur per 24 horas. Hoc si fiat, media frumenti ad sementem pars sufficiet, aratri duntaxat unius labor, neque ulla stercoratio necessaria erit etiam in terra sterili. Frumentum inde uno ante messem mense maturescet, & ob salis terræ commixtionem, decennio conservari poterit. Te hortor, ut porro huic negotio insistas ac promoveas hoc Ceriale artificium.[c] In the forementioned treatise you will see, how highly Dr. *Child* doth estimate this experiment. Since I have received a further enlargement upon it thus. *Nunc de seminum maceratione, cui ego multum tribuo, id addo, summopere cavendum ne in aqua calida multo minus ad ignem, macerentur & coquantur. Retulerunt mihi harum rerum gnari omnem vim seminis & fertilitatem perire, si coquantur, vel etiam aqua calidiore macerentur. Causam illi ignorabant. Existimo autem hanc esse: virtus seminalis in sale consistit. Hic sal liquescit & resolvitur, adeoque aquæ calidæ miscetur, unde granum sale cassum moritur. Quod si in illa aqua, cui grana incocta sunt, postquam refrixit, recentia grana macerentur, attrahent ex aqua salem incoctum, & virtute crescent. Unum enim granum sal multorum, vi magnetica, attrahet. Unde etiam patet, cur grani-voracium fimus ad fertilitatem commendetur, sicut tu olim recte in tuis, quod vita media vegetativa & seminum in stercoribus illis restitet exaltata. Unde grana aliquo aeris vitio corrupta non sunt abjicienda, etiamsi enim non conducant ad victum, tamen excocta vim suam reddunt aliis granis, aeque macerata multiplicant*.[d] Thus far learned Dr.

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[a] Mr Bedloe was a Dutch projector (possibly Lambert Bidloo (1633–1724), apothecary in Amsterdam) who prepared a liquor to fertilise seeds which was adopted by Mr Kemeys in Wales. See HP 28/2/79A and Hartlib's *Ephemerides*, 31 Dec. 1653 (HP 28/2/79A).

[b] Hartlib cites his *A Discoverie for division or setting out of Land as to the best form* (1653). Hartlib's original source was probably Robert Child, for whom see above, p. 133n.

[c] 'The sort of corn [or, seed-corn] that should be chosen is weighty and masculine. For this sort alone, when it is thrown into earth (that is feminine), has the power needed for generation. The corn that has been chosen in this way should be placed in a rich [lit., 'fat'] and foetid liquid made from horse manure, in which there should be dissolved as many pounds of salt of the earth, as there are acres that are to be sown; let it macerate over a period of twenty-four hours. If this operation is correctly performed, the middle part of the corn will be enough for the process of sowing [to be carried out successfully]; and so far as this matter is concerned, it will be a task for [only] a single plough, nor will one need to use any other fertiliser, even on barren earth. The corn, therefore, should come to a suitable state one month before the harvest; and as a result of the fact that the salt of the earth has been mixed in with it, one will be able to keep it in store for a period of ten years. I urge you to press on further with this business, and to give your encouragement to this useful agricultural invention.' See *A Discoverie*, p. 13.

[d] 'Now, on the subject of the soaking of the seeds (a process which I consider to offer a great deal of advantage), I add the following note. One should, above all other considerations, beware of having

Horne, professor at *Harderwick*, who hath been lately called to *Leyden*.[a] Sir, I thought to have taken my leave here of you, but that something extraordinary of butter and cheese is brought to my hands, to entertain you withall. That is, how to make a better sort of butter, without setting the milk for cream, practised with great approbation by Mrs. *Child*, in the isle of *Ely*.[b] The milk, so soon as it is come from the cow, must be strained then churned; as usually cream is done. Also the cheese made of the butter-milk will be better than the best two meal cheeses, that ever was eaten. And one pound of this butter shall be worth a pound and a half of your best butter, which is made of cream. My poor wife hath been sick unto death, but, by God's blessing upon the laudanum, the strength of her disease was broke within less than three hours after once taking of it, which none of her kindred would have believed. She remembers her humble service, with the rest of her daughters and sons. Sir Cheney complains more than ever, that his father hath utterly undone him.[c] /p. 261/ If you find no letter here from my son Clodius, you must lay the blame upon the smith's shop in *Martin's Lane*, where he hath been all this day, with another workman, to prepare something, which is to be an ingredient in that noble medicament of the Helmontian cinnabar, which he hopes to have in readiness, if God permit, in less than three weeks time.[d] But by the next post you may expect a large letter, in answer to your kindness, from his hands. The printed paper, here adjoined, was presented, without any effect, to the publick trustees of that affair.[e]

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them macerated or cooked in hot water, let alone near the fire. For people who are experienced in these matters have told me that all the force and fertility of the seed perishes, if they are cooked, or even if they are soaked in rather hot water. These people do not know the reason for this [loss of fertility]. I myself think, however, that the reason is as follows: the seminal virtue consists in the salt. This salt is turned into a liquid and is dissolved, as soon as it is mixed with warm water; and thus the grain, having lost its salt, perishes. But if a new set of grains are soaked in that same water in which the previous grains had been cooked up, after it has cooled down, then these new grains attract the salt that has been cooked up in the water, and thus increase in virtue. For one [new] grain attracts the salt of many others [of the previous grains] by magnetic force. And for this reason it is clearly apparent that manure of the grain-eating sort of animals is to be recommended for fertility, just as you have in the past rightly stated in your writings, when you said that the middle vegetative life [*vita media vegetativa*] even of seeds remains in an exalted form in this sort of dungs. For this reason, grains which have been spoiled by some sort of imperfection in the air should not be thrown away, even if they could not be used for food, because they can nevertheless be boiled up so as to give their force to other grains, and if they are soaked properly can multiply their effect.' See *A Discoverie*, pp. 13–15.

[a] Georg Hornius (1620–70), from 1653 professor of history at Leiden.

[b] Presumably the reference is to the wife of Robert Child, who has not been traced. For Child see above, p. 133n.

[c] For Sir Cheney Culpeper see above, p. 63n.

[d] Cinnabar is the red or crystalline form of mercury sulphide, the most important ore of mercury, originally applied to native cinnabar.

[e] For the enclosed 'husbandry directions' see above, p. 160n. The 'public trustees' may be the Committee of Adventurers for Ireland.

If the adder will not hear, yet, methinks, it is some comfort, that the charmers have charmed wisely. I remain now and ever,

Dear Sir,
your most entirely devoted
friend and servant,
SAM. HARTLIB

Charing-Cross,
Feb. 28. 1653/4

MY most humble service to the earl of *Corke*, and the lord *Broghill*: also to Mr. *Van Mussig*, if he will be friends with me.[a] I have not time to read over what I have written.

JOHANN BRÜN [UNMUSSIG][b] to BOYLE — 1 March 1654

From the holograph original in BL 5, fol. 153. Fol/1.
Not previously printed.

Generosissime Domine

Domina vice-Comitissa Ranalaugh Soror Tua, ex literis tuis ad se datis mihi retulit, te non usque adeo benevalere propter vesicæ Calculum, quod sane non exiguum apud me causat dolorem.[c] Utinam ita a Deo ditatus essem ut Tibi succurrere possim, Albis,[1] (ut ajunt) equis ad Te Volarem.[d] Sed, proh dolor, cum bene multis, nondum talibus arcanis sum instructus, quibus ex voto Te consolare valeam. Ante discessum Tuum quædam per Renum Calculo assignaveram partic-

Most Noble Lord,

Your sister, Lady Viscountess Ranelagh, has told me, from your letters to her, that you are suffering from a stone in the bladder, which news causes me no little pain.[c] Would that God had given me the power to be of assistance to you: I would fly to you, as they say, on white horses.[d] But, alas! Although I have learned many secrets, I have not learned those which might give me the power to console you, as I would wish. Before your departure I

[a] Johann Brün, or Unmussig, evidently a medical advisor to Lady Ranelagh, but otherwise a shadowy figure; see Maddison, *Life*, p. 83, and above, p. 158n.

[b] See previous note.

[c] Boyle says that he long suspected that he was afflicted with urinary calculus, but was assured when in Ireland that he did not have it. See *Usefulness II, sect. 1*, in *Works*, vol. 3, p. 339.

[d] The allusion is to Horace, *Sermones*, i. vii. 8.

ularia, quibus hæc paucula adjungere non inconsuetum reputavi. Recipe Succum Betulæ cui adde interiorem Quercus Corticem minut. incis. tene in infusione per 8 ♂ antequam bibatur aliquid ex eo, elapso hoc 8. adde cuilibet haust. mane & vesp. sumendo ʒ 1 vel ½ vel oculorum cancrorum pulveris. vel perlarum exig. pulveris ℈1. Vel Collige arenam ex Lotio tuo proprio pulverisatam minutissime, & bibe eam cum liquore supradicto, vel urinæ spiritu. In defectu Betulæ liquoris Recipe aquam ex ligno ‹Betulæ› et cortice inter. quercus destill. Cancri fluviatiles, vel ipsorum succus expressus, multum Tuæ naturæ proderunt. Hæc sunt Generosissime Domine, quæ pro mea tenuitate hac vice Tibi notificare velim, donec Deus meliora dederit. Habeo quidem aliquid in Laboratorio, sed adhuc imperfectum, imo dubium, si expectationi satisfaciat, ecce, ambobus Tibi offeram manibus, & quidem sine mora. Retulit mihi insuper Generosissima Domina viceComitissa quod Illustris Comes, Frater Tuus, ut ad se veniam, desideret, ejusque per medicum agam.[a] Sane honor iste me meaque superat, quare a Deo hoc unice desidero ut me talibus erudiat, quibus me erga Tantum Dominum gratum præbeam servum. Quondam vero hactenus ‹ut ingenuè fatear› nondum medicamentis & scientiâ expectationi satisfacere possum Vestræ, meritò oblatam conditionem recusare debeo. Interim si qua in re Vobis servire potero, Vestro imperio me non

made some prescriptions for the kidney-stone, to which I think it not inappropriate to make the following small additions.

Take birch sap, to which add finely chopped inner bark of oak; keep it in infusion for eight days before any of it is drunk. When these eight days have elapsed, add to every draught, to be taken morning and evening, one or half a drachm of pulverised crabs' eyes, or one scruple of finely-ground pearls. Or collect the sand from your own urine, ground very finely, and drink it with the aforesaid liquor, or with spirit of urine. If the liquor of birch is unobtainable, take water distilled from birch wood and inner oak bark. Crayfish or the juice pressed from them, will greatly benefit your constitution.

These, most noble Lord, are the prescriptions of which, in my present state of ignorance, I wish to inform you, until God grants me better ones. I have, indeed, something in my laboratory, as yet unperfected, indeed uncertain, which if it satisfies my expectations I shall offer to you with both hands, and without delay. The most noble Lady Viscountess [Ranelagh] also told me that the illustrious Earl, your brother, desires that I might come to him, and act as his doctor.[a] Indeed this honour surpasses my deserts, since from God I ask only this, that he may make me learned in such things as may enable me to offer myself as a welcome servant to so great a Lord. In truth, if I may speak openly, while I yet cannot satisfy your expectation in regard to medicines and knowledge, I ought in all honesty to refuse the proffered situation. Meanwhile, if I can serve you in any thing, do not disdain to

[a] Brün refers to the 2nd Earl of Cork.

dedignemini. Quæ hîc sparguntur nova forte a Generosissima Domina R. intelligetis. Vale & vive & salve

Generosissime Domine
a Tuo
humillimo servo
Joh. Unmussig

Londini 1. Martii
anno 1653

quæso humillima mea servitia Illustrissimæ Familiæ offeratur.

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command me; you will perhaps hear more of the news here touched upon here from the most noble Lady R[anelagh]. Farewell and live and be well,

Most noble Sir,
from your
most humble servant
Joh. Unmussig.

London, 1 March
1653.

I ask that my most humble respects be offered to your most illustrious family.

BOYLE to CLODIUS — April/ May 1654

From the version printed in Birch (ed.), *Works* (1744), v, 241–2. Also printed in Birch (ed.), *Works* (1772), vi, 54–5.

SIR,

AS I could not support the constancy of your silence but with a huge deal of uneasiness, so I receive not the honour of your letters, but with as much of joy.[a] And indeed they are so obliging and instructive, that their philosophy and their kindness do as well distract as deserve my gratitude. I am little less than transported to find myself to have so great an interest in a person, that hath so great an interest in philosophy; and in the same packet, in which I am assured by others of the sublimity of your knowledge, to be assured by yourself of the constancy of your condescensions and friendship. For the processes you are pleased to send me of

[a] None of these letters, evidently dating from between 27 Sept. 1653 (see above, pp. 148–50) and the date of the present letter, survives. It is worth noting here that we do not believe that BL 2, fols 88–9, is one of these, since it is a scribal copy of a letter which is also to be found in the Hartlib Papers and which forms part of an exchange between Clodius and Worsley arising from a treatise by Worsley which Clodius there criticises. For a full discussion, see Newman and Principe, *Tried in the Fire* (above, p. xvi), ch. 5.

Mercurius vitae, I return you my most humble thanks, and am extremely ashamed to be able to return you little else; and that our commerce is so unequal, that I am almost confined but to receive what you so freely communicate. For alas! besides, that though our opportunities and accommodations to improve our time were equal, the vast disproportion of our intellectuals would keep me still your disciple; besides that, I say, I live here in a barbarous country, where chemical spirits are so misunderstood, and chemical instruments so unprocurable, that it is hard to have any hermetick thoughts in it, and impossible to bring them to experiment:[a] yet to shew at least a willingness to acknowledge the favour /p. 242/ of your antimonial preparations, I here enclose you the processes of the sulphur of stella Martis, which you were pleased to desire of me at our parting;[b] and of the two processes (from the same hand) the larger is the recenter, and seems the better. I might tell you of strange matters this sulphur has done in agues (even in quartans) and fevers; but I confess I look upon it but as a trifle in comparison of the laudanum, the cinnabar, the drif, the ens Veneris saccharinum, and those other higher arcana, which you, have either perfected or set about.[c] And give me leave to tell you, that it is no weak evincement of my passion for and concern in your happiness, that I can refrain envying you, whilst every packet almost brings me the news of the great things you, do and are undertaking;[1] whilst unhappy I am condemned to lead an useless life, in a country, where I can scarce get time to think of chemistry, much less opportunities to improve it. And certainly a detention here, that separates me from Mr. *Clodius,* and so adds the pœna damni to the pœna sensus, would overpress my constancy, if I did not hope, that my stay in *Ireland* cannot be so long, as I know so great a distance from you will make me find it tedious;[d] and if I did not also hope, that by a short and necessary stay, to settle my affairs in this country, I may put myself in a condition of living out of it, and prosecute more undistractedly and effectually the study of real learning. You are extremely obliging in the tender sense you express of my yet continuing distempers, and no less my friend in the advice you give me to leave this unlucky country, and seek, under God, for a cure in a place, where you are pleased to offer me two things so conducive to my recovery, as your remedies and your conversation. And would to God, dearest friend, my affairs were as ready for such a journey as my inclinations: how would I fly to see the wonders I hear of, and enjoy that much wanted society you were once pleased

[a] For Boyle's residence in Ireland at this time and the extended duration of his stay referred to later, see above, pp. 135n., 152.

[b] On this sulphur, which is a preparation by George Starkey, see Newman and Principe, *Tried in the Fire* (above, p. xvi), ch. 5.

[c] 'Drif' is a word coined by van Helmont in connection with the properties of Butler's stone. See van Helmont, *Ortus medicinae*, pp. 595–6. 'Ens veneris saccharinum' is evidently one of Clodius's preparations about which we have no details.

[d] Boyle complains that he suffers an actual loss (*poena damni*, 'punishment of loss') as well as a perceived loss (*poena sensus*, 'punishment of sense').

to vouchsafe, and are still so free to offer me. But honest Mr. *Hartlib* can inform you of the necessity of my stay here till the 24th of June be past; and of my unfitness till then to obey those inclinations, that would incessantly carry one towards you. But as soon as the 24th of June is well past, I intend, if God bless me with life and health, to be either in *England*, or waiting for the first conveniency of transportation thither.[a] Till then, a just impatience will extremely disquiet me, if you be not so charitable as to vouchsafe me some of your conversation by letters, (whose length and frequency will most endear them:) and since this is the season of the year, in which my distempers use most to infest me, you would very sensibly oblige me, if you have already prepared any of the medicines your letter mentions, to send me by the very first safe conveniency, as much as you shall think fit for my present personal use, with some directions how to take what you send. For my part, that I may not live wholly useless, or altogether a stranger in the study of nature, since I want glasses and furnaces to make a chemical analysis of inanimate bodies, I am exercising myself in making anatomical dissections of living animals: wherein (being assisted by your father-in-law's ingenious friend Dr. *Petty*, our general's physician) I have satisfied myself of the circulation of the blood, and the (freshly discovered and hardly discoverable) receptaculum chyli, made by the confluence of the venæ lacteæ;[b] and have seen (especially in the dissections of fishes) more of the variety and contrivances of nature, and the majesty and wisdom of her author, than all the books I ever read in my life could give me convincing notions of. Designing, whilst I am kept prisoner in *Ireland*, to prosecute that study, as I have opportunity; if there be any thing relating to it, wherein my knives may give you any satisfaction I shall be very proud to employ them to so elevated an end. I have not been all this while unmindful of the commands, wherewith you were pleased to honour me, when I last kissed your hands, to enquire into the mineral advantages of *Ireland*: but in this illiterate country, I found all men so perfect strangers to matters of that nature, that my enquiries have hitherto been as fruitless as diligent. But since my coming to this town, my endeavours have procured me some little information, and hopes of more. Of the ludus, that Dr. *Currer* had, I can yet learn nothing, nor yet of any mine of antimony.[c] But for iron, I may be able to give

[a] This date is mentioned in Hartlib's letter of 8 May 1654, and so enables an approximate date to be assigned to this letter from Boyle.

[b] For William Petty see above, p. 64n. Petty landed in Ireland in Sept. 1652 following his appointment as Physician-General to the Army in Ireland, and to the Commander-in-Chief, General Ireton, who was already dead on Petty's arrival. See E. Fitzmaurice, *The Life of Sir William Petty* (London, 1895) p. 21. Boyle refers to Clodius' father-in-law, Samuel Hartlib. The discovery of the lacteal veins was published by Gaspare Aselli (1581–1626) in his *De lactibus sive lacteis venis* (1627). The discovery of the reservoir of the chyle was published by Jean Pecquet in *Experimenta nova anatomica* (1651).

[c] Boyle presumably refers to William Currer (c. 1617–68), physician. See Newman, *Gehennical Fire* (above, p. 48n.), esp. p. 190. In the next sentence, Boyle refers to the 2nd Earl of Cork, but the other brother mentioned has not been identified.

you a good account of it, and to bring you over of the ore; my eldest brother having upon his land an iron work, that now yields him a good revenue; and I having upon my own land an iron mine, to which before the wars belonged a (since ruined) work, which I have thoughts of resetting up. I am likewise told (but how truly, I know not yet) of a little silver mine lying in some land of mine; and very lately in a place, which belongs to a brother of mine, they have found silver ore very rich; for being tried, it is estimated, (as he tells me, that means to deal for it) at between 30 and 40 pounds a ton: but whether or no there be a mine of proportionable value, we do not yet know. I was yesterday with an officer of the army, who farms a silver mine from the state, who hath promised me what assistance he can in my mineral enquiries, and told me, that a metallist and refiner, whom he extolled with superlative elogies, assured him, that there was no country in *Europe* so rich in mines as *Ireland*, had but the inhabitants the industry to seek them, and the skill to know them.[a] If I shall in relation to this matter, or to any other, wherein my stay here may be any ways improveable to your service, be honoured with any further or more particular instructions, I shall (God willing) by my forwardness to obey them, endeavour to manifest, that I am as highly as justly ambitious not to utter uselessly the title of Mr. *Clodius*'s

Most affectionate friend, and
most obliged humble servant,
ROBERT BOYLE.

{BOYLE} to HARTLIB[b] — 25 April 1654

From the extract, partly in Hartlib's and partly in a scribal hand, in HP 70/8/3.[c] 4°/1.

Not previously printed.

An Extract of a Letter ‹from›[1] an Honourable
Person in Ireland to Mr Hartlib dated the 25 of April. 1654.

[a] Boyle refers to Thomas Bushell (1594–1674), Farmer of Royal Mines, following the grant given him to farm royal mines in Wales by Charles I. His lease was renewed by Cromwell.

[b] Boyle has been identified as Hartlib's correspondent here from the description by Hartlib of the author in the letter's title (Boyle is known to have been in Ireland at this time), and from certain characteristic phrases within it. It is clear from Hartlib's next letter that he had received a letter from Boyle dated 25 Apr. Furthermore, a similar account of the benefits of pruning roses appears in *Certain Physiological Essays* (1661); see *Works*, vol. 2, pp. 59–60.

[c] A further scribal copy, headed by Hartlib 'Husbandry of Roses', survives in HP 70/8/1A.

Upon the Way from Youghal to Dublin I had an occasion to oblige an Ingenious Gentleman, who hath been a great Traveller in the Easterne Countrys of the world, & came some yeares since to settle himselfe in Ireland where he hath made himselfe Eminent for Husbandry, in ‹which I hope to be much improved[2] by› his conversation as soone as my perpetuall distractions will allow it me.[a] One curiosity he hath practis'd which may not be altogether unworthy your notice; & that is a way to have Roses twice a yeare; which he performes by pruning off divers of the branches upon which the Roses grow, as soone as ever they are gathered, and then the same places will shoot forth fresh branches and Roses too about Autumne.

HARTLIB to BOYLE — 8 or 9 May 1654

From the printed version in Birch (ed.), *Works* (1744), v, 261–4. Also printed in Birch (ed.), *Works* (1772), vi, 83–9.

Dear SIR,

I PERCEIVE, by your last most welcome letter, of the 25th of April, that all my three former letters are safely arrived to your hands: your intended stay till the 24th of June is such a passage, as pierces my soul, for divers very weighty reasons and considerations, which is but bootless to name for the present.[b] Nor dare I entertain your departing again from *Dublin* with any delight or satisfaction, in reference to our communications, which might have been more readily exchanged, if you had continued in that central place. But we must quietly submit to a wiser providence, than we can set up by our own desires or affections, though never so ardent and sincere. I hope you have received likewise the great packet, with the desired Arminian books, which could hardly be gotten at the second hand.[c] The monies, which I laid out for them, I received again, according to your appointment. If I should have apprehended so long a stay as to the 24th of June, I would have added something else to the packet, besides five copies of the desired interrogatories; to divers of which I have procured a sufficient answer.[d] It would much further that design, if every ingenious head amongst you would take notice of whatsoever worth the observation occurreth in any place, that so by little and little

[a] This person has not been identified.

[b] Boyle informs Clodius of this intended date of departure from Ireland in Boyle to Clodius, early May 1654. For Boyle's extended stay in Ireland see above, pp. 135n. and 152.

[c] For the Arminian books see above, p. 158n.

[d] For Hartlib's *Interrogatory* see above, p. 158n. The *Interrogatory* was designed to collect information for the continuation of Gerard Boate's *The Natural History of Ireland* (1652).

we might perfectly come to understand the natural history of all the parts in that country. There are some things worth a philosophical pen in these places, *viz*. How it cometh to pass, that there are not frogs, toads, snakes, neither moles nor nightingales, rarely magpies? How some kind of fowls and beasts we have not in *England*? as divers hawks, cocks of the wood, pintails, wolves, foxes, greyhounds wondrous large; as also divers plants and fishes. Farther, to enquire what truth there is, concerning the generation of barnacles, which much abound there.[a] As also of divers things, which the Irish foolishly report of St. *Patrick*.[b] Also it were worth the while, strictly to examine their petrifying fountains, which are said to abound in several parts, whether they transmute all woods, or only holly, as is commonly reported? Whether turf doth grow here much, and how? Also, concerning divers isles, in one of which it is reported, a dog will not bite, and a woman cannot have children in. Also of lakes, some of which are accounted bottomless; another, at certain times, casting forth yellow amber. Also concerning stones like birds, which, they say, St. *Patrick* turned into stone, for chirping when he was preaching. I am glad to hear, that Mr. *Worsley* also is like to engage in the prosecution of these affairs, and this kind of surveying of lands.[c] Concerning the clover husbandry, I am promised a special account, which you shall have, God willing, as soon as it comes to my hands, either in print, or a copy in writing.[d] There is another renowned seed in *Brabant* and *Flanders*, which is as little taken notice of as clover was, before my books were divulged; it is called in Latin *spergula*, and in English spurry-seed; of which one writes unto me, as followeth.[e] 'The spurry-seed, which you have gotten out of the Low Countries,[1] grew, no doubt, in light ground: and, accordingly, if it were mine, it should again be sown in the lightest ground I had; though, for trial's sake, I might, perhaps, bestow a handful or two upon every sort of ground near me.'

The times of sowing it are twice in a summer: the first time is not very early. I should not adventure to sow Dutch seed in *England*, before the middle of May, lest being a stranger, it should take it unkindly to meet with cold May mornings, and discourage me. In June and July it will be in flower, and in August the seed is

[a] Hartlib refers to the barnacle goose (*Anser bernicla*). It was formerly believed that it developed from the crustacean barnacle. BL 7, no. 49, is a letter written by Miles Symner to someone who desired 'an account concerning Barnacles that you might present it to the truly honourable & by me ever honored person'. We suspect that this person was Boyle. The letter has no year in the date, but it most likely belongs to 1654.

[b] St Patrick was the 5th-century missionary and patron saint of Ireland.

[c] Benjamin Worsley was Surveyor General of Forfeited Estates in Ireland. Evidently Hartlib regarded Worsley's work of surveying as a potential contribution in the continuation of the *Natural History of Ireland*. See Webster, *Great Instauration*, pp. 81, 436–7.

[d] Hartlib intended to include this information in the 3rd edition of *Samuel Hartlib his Legacy* (1655), as 'Observations of the Husbandry of Clover from Mr. Tho. Mackworth's friend'.

[e] This letter 'relating the *Braband* Husbandry of Spurry-seed' was printed in Hartlib's *Legacy of Husbandry* (London, 1655), pp. 257–8. Variants between the printed text and Hartlib's transcription in the letter are recorded in the end notes.

usually ripe. The second time of sowing is after hay-harvest, when the *Brabant* husbandman presently ploughs up his ground, and sows it with spurry-seed, that it may grow up, and serve his kine after all the late grass and rowins be eaten up, even till New-years-day:[a] so that this latter sowing yields no seed, but is eaten up green, and the provision for seed is made by the former sowing.

IT will be good in this first trial, to sow it in several parts of the same ground, in different proportions, and to mark, which thrives best. As also, in the same ground, and with the same proportion of seed, to try the difference of encrease there is between the seed newly threshed out, and thrown into new-ploughed ground, and that seed, which is at the same time a year old.

IT is ordinary in *Brabant*, to sell away their May-butter, and to make their winter provision for themselves, and their more /p. 262/ knowing customers, in the end of the year. For many of them prefer spurry-butter before May-butter. I suppose, the principal reason is, because it is not so apt to grow rank, with that summer-heat, which May-butter must endure in June, July and August.

I HAVE known some *Brabant* husbandmen sow Kolls, that is, small round turnips, among their spurry, in the latter seed-time, as being also good to encrease the milk in their kine.

SOME *Brabant* women give spurry to their hens, that will catch it from one another as they do chick-weed: they believe, that it makes them lay the more eggs. Spurry is by some esteemed a sure remedy for a cut, or green wound, if it be bruised green, and laid to the cut. Thus far of spurry-seed. I could give you likewise several accounts concerning la Lucerne, and St. Foyne;[b] but my legacy of husbandry being to be printed the third time, you shall find them all in that edition with the Answer of the late Dr. *Child* to the animadverter, Dr. *Boate*, upon his large letter of husbandry, wherein there are divers excellent observations and experiments, which, by God's blessing, are like to enrich these nations, if their industry be not wanting.[c] By that, which I read concerning Dr. *Child*'s husbandries in the work of *Ireland*, I see what a good foundation of life he hath laid for that honest country calling.[d] But I doubt the colonel cannot shew us any more observations or directions of his in writing, besides what is extant already from his hand; though this would have improved clover, flax and woad, upon many more lands than his own.[e] I have heard no more from Dr. *Horne*, since I have sent him a pretty bulk of

[a] *rowin*, i.e., rowen, the aftermath, or second crop of grass or hay in a season.

[b] Lucerne is similar to clover, used as a fodder crop. 'Saint Foyn', i.e., sainfoin, a perennial herb also cultivated for fodder. See above, p. 157n.

[c] The 3rd edition of Hartlib's *Legacy* (1655) included Arnold Boate's 'Annotations upon the Legacy of Husbandry', which are in fact letters from Paris from July 1651 to Jan. 1652, as well as Robert Child's 'Answer to the Animadversor'. See *Legacy* , pp. 118–72.

[d] Child had contributed 'A Large Letter … of English Husbandry' to the former editions of Hartlib's *Legacy.*

[e] For Anthony Morgan see above, p. 142n.

all sorts of books.[a] I suppose, he will give his judgment upon those, that treat of this subject, as soon as he is settled at *Leyden*, whither he is called to the professorship of history, in *Salmasius*'s room, as I take it.[b] I have seen lately a French book, much commended unto me, called, *Le Jardinier François, qui enseigne a cultiver les arbres & herbes potageres. Avec la maniere de conserver les fruits, & faire toutes sortes de confitures conserves, & massepains. Dedie aux Dames. Seconde edition. A Paris* 1651.[c] Perhaps, this also was amongst the books, which Dr. *Boate* commended for his georgical catalogue.[d] I long to hear more news of that ingenious gentleman, between *Youghall* and *Dublin*, for advancement of these rural studies.[e] I like so well his character already, which you have given him, that I am much inclined to present him with some of these kind of books of mine, that they may be improved and enlarged by his pen, both from his great travels in the eastern countries of the world, as likewise from his eminent husbandries in *Ireland*. The way to have roses twice a year, is very pleasant and fragrant, if it be so practicable, as you have described. For the lord *Digby* would say, speaking of an ancient fair lady, that a rose in Autumn was as sweet as a rose in June.[f] But better travellers and naturalists relate, that the planting of roses is but a late attempt in the *West-Indies*, where they never grew afore; yet since they have been planted there, they have prospered exceedingly, in a most surprising nature, for sight and smell, above all our roses. I am shortly to be acquainted with Mr. *Marshall*, the great master of insects in all *England*, as likewise of the planting of above thirty new sorts or kinds of roses, which are so lively and accurately represented, that three hundred pound sterling hath been offered for that picturary, if he would have sold it.[g] The performance of Dr. *Van Mussig*'s promise concerning saltpetre will be very welcome: but, not taking notice of this, I pray remember my true love and service unto him.[h] If he have any businesses or commands to honour me withall, you may assure him, I shall approve myself always his ancient faithful friend and servant. The author of *Isagoge Phytoscopica* is

[a] For Georg Hornius see above, p. 162n.

[b] Hornius settled in Leiden in 1653. Claudius Salmasius or Claude de Saumaise (1588–1653), French classical scholar and professor of ecclesiastical history at Leiden.

[c] Hartlib refers to *Le jardinier Francois* (1651) by Nicolas de Bonnefons, which was translated by John Evelyn as *The French Gardener: instructing how to cultivate all sorts of Fruit trees and Herbs for the Garden* (1658).

[d] Possibly a reference to the books mentioned by Arnold Boate in *Legacy*, pp. 123–4.

[e] This person has not been identified. He was possibly the author of the letters published in *Legacy*, pp. 244, 248.

[f] Hartlib refers to Sir Kenelm Digby, for whom see above, p. 99n. Digby's love for Lady Venetia Stanley (d. 1633), who became his wife in 1625, was the subject of many of his poems and a large part of his autobiography, none of which were printed until the 19th century. The line in question has not been traced.

[g] Perhaps Alexander Marshall, a painter in watercolour, mentioned by John Tradescant, *Musaeum Tradescantianum* (London, 1656), p. 41.

[h] For Johann Brün, or Unmussig see above, p. 158n. On saltpetre projects see Webster, *Great Instauration*, pp. 377–80.

Dr. *Jungius* of *Hamburg*, one of the best logicians in all *Germany*.[a] For he conceives, if that art were truly understood and applied, not only botanical, but all other real studies whatsoever, would flourish more than they have done since the fall of *Adam*. *Leges Collegii Protonoetici* came from the same forementioned author: but they will scarcely be understood, without the general draught of his philosophical undertakings, which I shalI impart unto you hereafter, God willing.[b] In my last to Mr. *Worsley*, I gave him the contents of a certain treatise, called, *Viridaria Varia Regia & Academica publice in usum magnatum ac philobotanorum collecta ac recognita opera & studio D. Simonis Pauli S.R. Daniæ Andrei Aulici, Hafniæ* 1653. *In quo continentur,* 1. *Catalogus plantarum horti regii Hafniæ.* 2. *Parisiensis.* 3. *Warsaviensis regis Poloniæ.* 4. *Oxoniensis.* 5. *Gymnasii Patavini.* 6. *Horti academici Lugduno-Batavi.* 7. *Horti Groningensis.* 8. *Catalogus tuliparum.* 9. *Laurembergii Botanotheca. Hoc est, modus conficiendi herbarium vivum*.[c] All in one thick volume, in great 12mo. There came over but two copies only from *Denmark*. But a judicious friend of mine writes his censure upon it in these following words.

– *Viridaria regia Sim. Pauli persuadeo mihi opus esse ad pompam verius quam ad usum: cui bono quæso variarum istarum plantarum nomenclatio, si certior earum et fundatior descriptio absit? Et licet ejusmodi nobis potestas, quemadmodum in prolixa horti Eichstedensis descriptione atque in herbariis præprimis nonnullis (puta Matthioli sola se figurarum elegantia insinuantibus) est videre, quid tamen præter inanem oculorum voluptatem lectori adferunt solidi? Nisi forte nobis una virtutes viresque in cibo, potu, aliisque distinctius et accuratius explicent? Sed qui hoc mihi polliceat de uno homine? nisi ut quis scribere libros animum intendat, & nobis denuo apponat, quod cum tædio sumptum est. Unam unus medicus herbam describat; res difficillima in mitiorem cogetur naturam, & sic aliquando plenissimum rei botanicæ systema habebimus. Imo praxis respondebit theoriæ quam proximè, et erit chymico bono cui fidat in posterum. Hodie aliud nihil quam scribunt & exscribunt botanici, rarissime* /p. 263/ *quod docent, quod ipsi experti sunt, ut minoris merito emolumenti ingentia nostra herbaria sint. Verum est alicubi extant certa medicamina & infallibilia, sed illapsa sunt multis dubiis aliis quasi involuta, & nequit nemo docere veritatem illustrius, quam quem ipsa fideliter docuit. Sed de hac re esto domini Clodii judicium.*[d] Thus far a very learned friend, which agreeth

[a] This is a reference to Joachim Jungius (1587–1657), natural philosopher, mathematician and physician. A manuscript version of the *Harmonice et isagoge phytoscopica*, is HP 18/4/1A–1B. On Jungius see H. Kangro, *Joachim Jungius' Experimente und Gedanken zur Begründung der Chemie als Wissenschaft* (Wiesbaden, 1968).

[b] Possibly Jungius's 'Protonoeticae Philosophiae Sciagraphia'. Of this work only a fragment survives in Cambridge University Library. It has been published in Kangro, *Joachim Jungius*, pp. 256–71.

[c] Hartlib cites the work of the botanist and physician Simon Paulli (1603–80), botanist and physician, and professor of medicine at Rostock 1639–48. *Viridaria varia regia* was published in 1653. For further details see *Ephemerides* for 1654 (HP 29/4/6B).

[d] 'I am quite sure that the *Viridaria regia* of Simon Pauli is a work intended more for show than for practical use. For what, I ask you, is the point of having a list of the names of all these different plants, if a more certain and more detailed description of them is lacking? And although we do have the opportunity of looking [at the plants he lists] in that sort of way, that we find in his verbose description of the Eichsted garden and especially in a number of herbaria (one should think that

with your judgment, which you have expressed upon this matter.[a] I thank you for the intelligence given me of my lord of *Leicester*'s inoculating practices.[b] I shall take more notice, from henceforth, of that garden for these, and his other pleasant and profitable civilities and cultures. If we could have a true and faithful description of all these kind of industries which have been, with very vast charges and exquisite skill, bestowed upon the famed duke of *Holstein*'s garden, it would teach us yet more botanical and oeconomical lessons.[c] If I might be so bold, I should be glad to know, what other curiosities Mr. *Worsley* hath communicated to you, besides the most unprocurable part of *Glauber*'s second furnace.[d] Mr. *Morian* writes no more of him, or his other promised magnalia.[e] A great abbot in *France*, intimately corresponding with Sir K. *Digby*,[f] is said to have other kind of furnaces than any of *Glauber*'s, which will be erected, ere long, amongst ourselves, to prosecute really philosophical studies. For you must know, that a general chemical council, not far from *Charing-cross*, sits often, and hath so behaved itself hitherto, that things seem now to hasten towards some settlement; and we, poor and sickly creatures, begin

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those of Matthiolus only insinuate themselves because of the elegance of the illustrations), what solid things do they offer to the reader, beyond an empty visual pleasure? [What good are they,] unless perhaps they explain to us all together in a more clear and more accurate manner the qualities and strengths of the plants in food, drink, and other respects? But what conclusion should I come to about this one man? What else, except that here is someone who might set his mind to write some books, and might finally place in our hands something that we can pick up only at the risk of boredom? One single physician should write a description of one single herb; this most difficult of subjects will be compelled to assume a gentler form, and thus at some point we shall have a thoroughly complete system in botanical matters. Then, indeed, will practice come as near as possible to theory; and it will be a good chemist whom one may trust thereafter. But today our botanists do nothing apart from write and rewrite their books; and it is a very rare thing, if they teach something which they themselves have experienced, thus these huge herbaria of ours are of not much use at all. It is true that somewhere there do exist true and infallible medicines; but they have fallen out of use because they are tied up with many other doubts, and no-one can teach the truth more effectively than a person whom truth herself has faithfully taught. But let the decision of Mr Clodius on this matter stand.'

[a] It is not known who wrote this comment on Paulli's *Viridaria*. His reference to Mattioli is to his *Commentarii in sex libris pedacii Dioscoridis* (1570).

[b] This is possibly Robert Sidney (1595–1677), 2nd Earl of Leicester, Lord Lieutenant in Ireland from 1641–3, although we have not been able to elucidate the reference to his 'inoculating practices'.

[c] Presumably Hartlib refers to Frederick III (1609–70), Duke of Holstein-Gottorp, King of Denmark from 1648.

[d] For Glauber see above, p. 84n. He settled a laboratory in Amsterdam, and became famous for his distillatory furnaces, which made it possible to obtain high temperatures. The work mentioned here is *Furni novi philosophici*, 5 parts (1646–49). Here Hartlib may refer to the second part of it. Glauber's *Furni* was translated into English by John French in 1651; see J. R. Partington, *A History of Chemistry*, 4 vols (London, 1961–9), ii, 341–61. Glauber was closely associated with Johannes Moriaen who introduced him to Worsley.

[e] For Moriaen see above, p. 66n. Moriaen's letters from Holland provided Hartlib and his associates with information on Glauber's activities.

[f] For Sir Kenelm Digby see above, p. 99n.

to conceive hopes of being able shortly to support our burthens.[a] As for Mr. *Clodius*'s philosophical wonders, if they were in my hands, or possession, you should soon be an eye-witness of them, though you were at this distance. But my chemical son assures me, they are fittest to be reserved to that happy conversation, which is so much prayed and longed for on both sides.[b] In the mean time, though the great medicinal arcana be not yet prepared, he hath done, with God's blessing upon certain specificks, so many and strange cures already, as are counted no less than miraculous; or, to use Sir *Kenelm*'s words, conjuring. They are about an universal laboratory, to be erected after such a manner, as may redound, not only to the good of this island, but also to the health and wealth of all mankind. I suppose you have heard, how that Sir *Kenelm* is in very good favour with the lord protector; his sequestration is taken off, and as soon as he hath gotten his lands into his own possession, (which will be suddenly) he speaks of engaging seven hundred pounds for his own part in the foresaid laboratory, besides some other friends, which he can procure.[c] He protested seriously unto me, that in all his travels and converses with the choicest wits, both in Italy and France, he hath not met so much of theoretical solidity, and practical dexterity, both together, as he finds in my chemical son; and therefore is resolved to improve that prize accordingly, which providence hath brought to his hands. He hath many excellent secrets and experiments of all sorts, yea, some arcana of the highest nature, which he hath already freely (yet *sub fide silentii*)[d] imparted into his breast; and is purposing to send for all his papers out of *France*, that he may put them into his custody and management. Both their judgments and experiences agree mightily together, to the very amazement of each other. And there wants nothing to the perfecting of the grand design, but that you are not present with them, without whose interest we have no mind, that it should be consummated. In the mean time, he hath been instrumental to ingulph my son with the practice of physick into ten or twelve families of the greatest of his acquaintance, which take up so much already of his time, both day and night, that he hath no leisure to devote himself to your service, and desires of corresponding with you, or making out of the better sort of physicks, with some of the much desired and longed for arcana.[e] He hath written for an expert ancient old laborant, which hath lived with Mr. *Morian*, who is like to be here very shortly, now the peace between both commonwealths hath been proclaimed so many days ago.[f] The

[a] Perhaps a reference to a 'Chemical Council', which involved Clodius, Digby, Starkey, Brün, John French and Thomas Smart. See Dobbs, *Foundation* (above, p. 93), pp. 75–8.

[b] Hartlib's 'chemical son' was Clodius.

[c] An Order in Council of 30 Jan. 1654 freed Digby's estates from sequestration, allowing him to repay part of his debts; see *CSPD*, 12 Jan. 1654. Digby was on intimate terms with Cromwell from 1654.

[d] 'under the faith of silence'.

[e] For Kenelm Digby's patronage of Clodius see below, p. 180n.

[f] The laboratory assistant was Franck or Franken Remeus, an apothecary who had lived for a time

laborant also is very much commended for his mineral skill in divers respects. My son assures you, that he will not fail to prepare the ludus after *Helmontius*'s way, as soon as it is possible.[a] The rare medicine for curing the gout is yet but extant in the recipe or process, which Mr. *Morian* got from *Coen*, and hath since communicated to Mr. *Clodius*, who promised to send some other medicines, which are ready, by the first occasion, as you have directed.[b] The famous lithotomists course for the stone is very welcome, but is counted no great jewel by my son.[c] Sir *Kenelm* commends hugely the medicine of the *virga aurea*,[d] which *Barcleius*, in his *Euphormio*, hath so remarkably discovered to the world, though little taken notice of, in the comparison of those few, which have used the same with admirable success. I am now endeavouring to get the sight of the forenamed book, and, by my next, God willing, you shall have a transcript of it. The greatest secret you ever knew in surgery, which you mention, as imparted and enclosed in Mr. *Clodius*'s letter, was not found in it.[e] I hope it is not otherwise miscarried. That of the lithotomists to me, was found in the company of your dearest sister,[f] which she faithfully delivered unto me, not knowing how it was come into the letters written to herself. I beseech you, Sir, do not forget to send in your next the forementioned secret with those other chirurgical rarities, which you have made a shift, as your phrase is, to possess yourself of. The rare chirurgical ones, which I have purchased of late, are contained in the adjoined printed paper of Mr. *Morian*'s communication, which Mr. *Van Mussig* can interpret.[g] The chirurgical several oils, therein mentioned, are sent unto me by the forenamed laborant; of which I /p. 264/ shall give you farther notice, when they are arrived. The peace with the Hollanders doth no less rejoice us, than it doth those nobler souls in *Ireland*.[h] To further the philosophical commerces therefore, in some measure, I am intending shortly to write to the possessors of the late Dr. *Boate*'s papers, to publish those in print beyond the seas, which contain the Natural History of *Ireland*, written in Low-Dutch originally, as he told me in his life-time.[i]

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with Moriaen, and moved to England in 1654. See Young, *Faith, Medical Alchemy and Natural Philosophy* (above, p. 66), pp. 51–2. The Treaty of Westminster, ending the first Anglo-Dutch War, was ratified in Apr. 1654.

[a] For van Helmont see above, p. 91n.

[b] For Johann Baptista Coen see above, p. 155n.

[c] See *Usefulness I*, *Works*, vol. 3, p. 339.

[d] 'goldenrod'. The leaves and flowers were formerly used medicinally. Hartlib refers to John Barclay (1582–1621), author of *Euphormionis lusinini satyricon*, 2 parts (1623–7).

[e] Clodius's letter to Hartlib has not been found.

[f] i.e., Lady Ranelagh.

[g] Hartlib probably refers here to a publication commissioned by Moriaen on Hartlib's and Dury's behalf. For Moriaen's printing activities see Young, *Faith, Medical Alchemy and Natural Philosophy*, pp. 38–41.

[h] See above.

[i] For Gerard Boate and his authorship of *Irelands Naturall History* (1652), see above, p. 157n.

For I suppose, this may be one means, whereby *Ireland* may be peopled again, and get good tenants; especially, if the other parts, which are wanting to that history, were more particularly discovered and described. *Coen* hath neither *England* nor the *Low Countries* made happy by his last visits. For Mr. *Morian* hath written twice, that he is arrived at *Hamburgh*, where he hath found, that other *Faber*, which was before engaged in some mineral and chemical works.[a] But since they have been together, the good man at *Amsterdam* complains, that both of them have been (to use his own words) *magis muti quam pisces*.[b] If he knew, that my son hath lately gotten from some other hand his greatest mystery, I dare prophesy, he would not be so long silent and suspense, as hitherto he hath been. I read with some pleasure, that Dr. *Petty* and yourself have lately been making fine discoveries in anatomy.[c] The ingenious doctor told me, divers months ago, of certain musical and dialling anatomies, invented by him.[d] But because I have heard nothing more of them, a farther discovery from your hand will always be very welcome. There are other fine discoveries made by the Bohemian baron *Misneck*, lately sent to this commonwealth from the duke of *Courland*, whereby both watches and dials will suffer much, if he can make good his invention.[e] The discoveries are as yet made only to a few of his most confiding friends. Only I have learnt in the general, that he can make a most exact and perfect dialling use, as I may so call it, from the knowledge of the circulation of blood in a man's body, if I have been rightly informed. If I could have gotten a copy of two pretty large volumes, lately brought over by a gentleman of singular quality, and who lodgeth in the best room of my house (for so much my chemical son doth love and honour him) at this present; I would have sent it into *Ireland*, to put it to a trial, whether you could find any more of these fine discoveries, which you promise to impart at more leisure.[f] The titles of them are these. *Thomæ Bartholini Vasa Lymphatica nuper Hafniæ in Animantibus inventa. Et*

[a] There is no evidence for Moriaen's residence in Hamburg. At some point between Apr. and Oct. 1654 he moved to Arnhem, where he resided as a guest of Küffler. See Young, *Faith, Medical Alchemy and Natural Philosophy* (above, p. 66), p. 52. For Coen see above, p. 155n. Hartlib's further reference is to Albert Otto Faber (1620–86), physician, who settled in England and became physician to Charles II. See J. Crossley (ed.), *The Diary and Correspondence of Dr J. Worthington*, 3 vols (Manchester, 1847–86), i, 363, n. 1; and ii, 6, 41, n. 1, and Harriet Sampson, 'Dr Faber and his Celebrated Cordial', *Isis*, 34 (1943), 472–96.

[b] i.e., 'more mute than fishes'.

[c] On Petty's and Boyle's early anatomical investigations see Frank, *Harvey* (above, p. 66), pp. 93, 101–2. It is likely that Boyle studied anatomy with Nathaniel Highmore. See above, p. 143.

[d] It is not known what these are. Petty had written some lectures on music, and a treatise of irregular dials; see Lansdowne, *Petty Papers* (above, p. 64), ii, 261. No letter from Petty to Hartlib detailing such inventions has been found.

[e] Baron Misneck has not been identified. Hartlib possibly refers to Jacob Kettler (1639–82), Duke of Courland.

[f] Hartlib refers to Johann Friedrich Schlezer, who lived with him during his visit to Cromwell as a representative of the Elector of Brandenburg. See Turnbull, *H. D. & C.*, pp. 3, 276.

Hepatis Exequiæ, 1653. 2. *Ejusdem Dubia Anatomica de Lacteis Thoracicis. Et, an Hepatis Funus immutet Medendi Methodum*, 1653. 3. *Ejusdem historiarum anatomicarum centuria* I. & II. 1654.[a]

From *Upsal* in *Sweden* was likewise sent unto me somewhat, which I have not imparted to you, for ought I can remember: it is called, *Nova Exercitatio Anatomica. Exhibens Ductus Hepaticos aquosos. Et Vasa Glandularum serosa. Nunc primum inventa aeneisque figuris delineata. Ab Olao Rudbeck Sweco, Cui accessere aliæ ejusdem Observationes Anatomicæ*.[b] Thus you see what the Danish and Swedish world is attempting and transacting in these affairs of learning. I wish, that Dr. *Petty* would shew himself to the world by some rare piece or other. For since the non-performance or non-divulging of the invention of his double writing, his credit is mightily impaired in *England*, and other nations, which have heard of it. Those, that know the way, which Mr. *Wren* doth use, say, his art of double writing is not worth a rush; for it can never be readily practised.[c] Honest Mr. *Dymock* is blamed almost by every body, though the fault, in my judgment, be as much, if not more, in them, that blame him.[d] The earl of *Worcester* is buying *Vaux-hall* from Mr. *Trenchard*, to bestow the use of that house upon *Gaspar Calehof* and his son, as long as they shall live;[e] for he intends to make a college of artisans; which, if it go forward, I shall get Mr. *Dymock* into it, though I had rather he should superintend a college of husbandmen, whensoever it can be founded. Yesterday I was invited by the famous *Thomas Bushel* (for I suppose you have seen his *Mineral Overtures* in print) to *Lambeth-Marsh* to see part of that foundation or building, which is designed for the execution of

[a] Hartlib refers to Thomas Bartholin (1616–80), Danish physiologist and anatomist. In 1649 he was chosen to succeed Simon Paulli in the chair of anatomy at Copenhagen. In *Vasa lymphatica nuper Hafniae in animalibus inventa* (1653), he recognized that the lymphatics formed a physiological system. The other two works by Bartholin here mentioned are his *Dubia anatomica de lacteis thoracicis* (1653) and *Historiarum anatomicarum rariorum centuria* (1654).

[b] This work, published in 1653, is by Olof Rudbeck (1630–1702), Swedish anatomist, botanist and historian. He claimed that he discovered the lymphatic system in 1650, three years before the publication of Bartholin's *Vasa lymphatica*.

[c] For William Petty see above, p. 64n. He invented a system of double-writing in 1647, which he advertised in his *Advice to Mr Samuel Hartlib* (1648), dedicated to Boyle. Petty was granted a patent for his invention in 1648. See *An Ordinance of the Lords and Commons… to grant his Majesties Letters Patents to William Petty*, published in W. Petty, *A Declaration concerning the newly invented Art of double writing* (1648). Hartlib also refers to Christopher Wren (1632–1723), natural philosopher and architect. One of Wren's early inventions was a double-writing instrument, which in Hartlib's opinion, evidently compared unfavourably to Petty's.

[d] For Cressy Dymock see above, p. 88n.

[e] For Edward Somerset, 6th Earl and Marquis of Worcester, and the property at Vauxhall see above, p. 79n. John Trenchard, MP, obtained ownership of Vauxhall following its confiscation by Parliament at the time of the Act for the sale of crown property in 1649. Eventually it was proposed that the house should pass into the hands of the Marquis. The Dutch mechanic Caspar Kalthoff (fl. 1664), had been employed at Vauxhall before the Civil War. See W. H. Thorpe, 'The Marquis of Worcester and Vauxhall', *Transactions of the Newcomen Society,* 13 (1932–3), 75–88. Kalthoff's son has not been identified.

my lord *Verulam*'s *New-Atlantis*.[a] I make no question, your dearest sister hath written to you of Mr. *Dury*'s going into *Germany* with Mr. *Pell*.[b] Since his departure, I have printed a treatise of his, concerning a body of practical divinity, to be compiled out of English authors, which is very worth your reading, and therefore shall send you some copies of it.[c] *The Political Vision* be pleased to tender, with my humble service, to your noble brother, the earl of *Corke*.[d] Thus, begging your pardon, for giving you so tedious a trouble, with my large scribbling, and presenting again the humble and faithful services of my wife, sons, and daughters, I profess myself unfeignedly,

Dear Sir,
your most affectionate,
and most obliged
humble servant,
May 8, 1654. SAM. HARTLIB

HARTLIB to BOYLE 15 May 1654

From the printed version in Birch (ed.), *Works* (1744), v, 264–6. Also printed in Birch (ed.), *Works* (1772), vi, 89–91.

Dear SIR,

MY last was dated the 9th of *May*, which was a very huge, if not voluminous answer to your last of the 21st of *April*, with a short letter also from my chemical son.[e] Yesterday I sent you a packet, wherein were 15 copies more of the interrog-

[a] For Thomas Bushell see above, p. 168n. Bushell had been a protégé of Francis Bacon, and he proposed to establish Solomon House, in London or at Wells, plans for which were first presented by Bacon in his *New Atlantis* (1625). Hartlib must refer to *The Case of Thomas Bushell … Together with his progresse in minerals* (1649).

[b] For John Dury see above, p. 56n. Dury was in Germany from June 1655 until July 1656, for the purpose of establishing ecclesiastical peace among Protestants. See Turnbull, *H. D. & C.*, pp. 279–80. Hartlib also refers to John Pell (1611–85), mathematician, F.R.S. 1663, who in 1647 was appointed professor of mathematics at the newly-founded University of Breda. From 1654 to 1658 Pell acted as Cromwell's political agent in Zürich. There is no evidence that he accompanied Dury to Germany. Lady Ranelagh's letter to Boyle referred to here has not been found.

[c] Dury sketched a 'Body of Practical Divinity' in *A Summary Platform of Practical Divinity* (1654).

[d] The *Political Vision* has not been identified.

[e] Hartlib refers to his son-in-law Frederick Clodius as his 'chemical son'. The letter referred to is presumably the lengthy one, dated 8 May, printed above. The 'short letter' from Clodius, however, is not extant. The date given for Boyle's letter to Hartlib is perhaps an error for 25 Apr.

atories for *Ireland*, two copies of Mr. *Dury*'s last treatise concerning a body of practical divinity, and an Helmontian manuscript which Mr. *Clodius* had lent to Mr. *Morian*.[a] I caused it to be transcribed out of the original, which is very faulty in divers places, so that scarce any sense can be made of them; but I fear /p. 265/ the transcript is much more faulty, which I had not time to read over, lest I should have neglected the present opportunity of sending packets. The title of the foresaid manuscript is, *Magna virtus verborum et rerum*, about five sheets of paper.[b] I suppose Mr. *Clodius* will be able to supply the defects, who was fully resolved by this very occasion to have sent you some of his medicaments, but that the best of them, which is now preparing, could not be ready. But he hopes it will be done within six or eight days, God willing, and then he purposeth to send it with the first, with a proof of his other physical preparations, which he counts not so extraordinary. In the mean time I cannot but transmit this way the high respects, which he beareth towards your own person: for Sir *K. D.* of whom I have written so largely in my last, being yesterday morning with me at my own house, and pressing most earnestly the accepting of his generous offers towards my son (for a plentiful provision of himself and family for two years, with the furnishing of a complete laboratory) I would give him no other answer, but that I would acquaint Mr. *Clodius* with his resolves, leaving him to the freedom of his own determination.[c] He hath not yet been with Sir. *K.* but when I related the matter unto him, before I could pass my opinion upon it, he replied – *Timeo Danaos sua dona ferentes*[d] – I will determine nothing before Mr. *Boyle* be arrived. For whether his estate will suffer him to contribute little or much for the carrying on of all our physical and chemical affairs and designs, he alone is to be entrusted with a full and entire communication of them all and others, as we shall advise amongst ourselves. He said indeed, that Sir *K.* was as gallant a gentleman as ever he had met withal, but yet he could discern rather gallantry than goodness in the frame of his spirit, and of all his actions, both which he had found so eminently and superlatively in your own conversation. For my part, I was more thoroughly gladded (if you dare believe me) with this solid judgment and affections of my son, than with any treasure of knowledges and experiments, which he seems to possess or to pursue. After he hath conferred again with Sir *K.* he will, it may be, testify, under his own hands, these very respects unto

[a] For Hartlib's *An Interrogatory Relating more particularly to the Husbandry and Natural History of Ireland* see above, p. 158n. For John Dury's treatise on practical divinity see above, p. 179n. For Johannes Moriaen see above, p. 66. For the Helmontian manuscript see below.

[b] The title of Helmont's manuscript is 'The great virtue of words and things'. It is mentioned in Hartlib's *Ephemerides* for 1654 (HP 28/2/68A).

[c] Hartlib refers to Sir Kenelm Digby, for whom see above, p. 99n., and to Clodius. Digby intended to finance a 'universal laboratory' under the enterprise of Clodius. See C. Webster, 'English Medical Reformers of the Puritan Revolution: A Background to the "Society of Chymical Physitians"', *Ambix,* 14 (1967), 16–41.

[d] The quotation is from Virgil, *Aeneid*, ii. 49, 'I fear the Greeks when they bring their gifts'.

yourself. I have found that passage concerning the cure of the stone, which the gallant knight so highly extolled, in *Barcl. Euph*. Satyr. p. 1. of a *Leyden* or *Amsterdam* edition in these following words.[a]

– *Statim notissimam herbam oculis meis subjicit Æsculapius, quæ calculo bellum indixit multo felicius, quam aut veratrum amentiæ, aut vulneribus Asciros. Hæc lanceatis foliis piloque ita brevi, ut pene curiosos oculos fallat, crenis denique tenuibus, et sæpe in obtusam speciem oras secantibus, mediocriter assurgit. Radix caulisque lignea subtiliora succam in herbam transferunt. Planta ad ingenium terræ nunc cubitalis, plerumque eminentior, insigne fastigium floribus ad examen turgentibus cingit, et virgæ aureæ est nomen, sive quoniam aureæ ac pæne divinæ virtutis est, sive quod præstantis metalli colorem exigui floris venustas æmulatur. Cæterum contusum in renibus calculum in innoxium pulverem solvit. Non in latere, non in vesica dolor; adeo ut tam facili remedio pudeat calculum timuisse. Et enim in hyemem siccatur æstivis umbris planta, et ubi gravitas lateris coeuntem morbum præsagit, aureus pulvis ad drachmam mere delibutus sumitur, sive ovo livissime cocto permixtus. Sed mihi non erat ad manum tam prætiosus pulvis. Itaque recentem adhuc herbam jubeo Fibullium mandere. Nihil eo die visum est ad morbum fecisse medicamentum: sed biduo deinde repetitum, supra fidem est, quam egregie refellerit acerbissimum morbum: sordidus pulvis abunde vesicam exonerabat, cænosumque saccharum pæne sanguinis imagine pingebat. Jam ventriculo robur redierat, jam corpori toti vigor, et mihi ad perfectionem artis medicæ sola deerat laurea et emptitii testimonii liber. Hactenus Berclaius*.[b] If Mr. *Clodius*'s laborant

[a] For John Barclay, author of *Euphormionis lusinini satyricon* (1623–7) see above, p. 176n. The quotation occurs on pp. 63–4 of the 1623 Leiden edition and on pp. 95–6 of the 1627 Amsterdam edition.

[b] 'Straight away Aesculapius placed under my eyes a most famous herb, which waged war on the stone with much greater success than either hellebore can achieve against madness, or St Peter's wort against wounds. This herb grows up to a moderate height, and has lance-like leaves, and hair so short that it could almost pass unnoticed when looked at by an inquisitive person, and finally delicate notches often cutting the edges into a blunt form. The root and woody stalk carry the sap into the herb. According to the nature of the ground, the plant is sometimes about a cubit high, and very often taller, and surrounds its very striking top with flowers that swell out into a mass of blooms. Its name is 'goldenrod' [*virga aurea*]: so called either because it has a golden and nearly divine virtue, or because the beauty of the little flower imitates the colour of that excellent metal. In any case, it breaks up the stone that afflicts the kidneys, and dissolves it into a harmless powder. There is no pain in one's side, and there is no pain in one's bladder; wherefore one might be ashamed of having feared the stone, when so easy a remedy is available. For the plant can even be dried in the shade during the summer for use in winter. When a heaviness in one's side warns one that the disease of the stone is coming on, then this golden powder can either be taken and simply consumed in the amount of a dram, or mixed with an egg that has been cooked very thoroughly. But I did not have this most precious powder to hand. And so I told Fibullius to arrange for some of the herb to be gathered for the purpose. The medicine did not seem to have done anything to cure the disease on the first day; but the dose was then repeated over two days, and it was quite beyond belief, how marvellously it defeated this most painful of illnesses. A dirty powder was copiously voided from the bladder and the muddy fluid was changed almost to the colour of blood. Now strength returned to my belly, and then vigour to my entire body, and all I needed to bring me to perfecting myself in the art of medicine was a university degree and the book of purchased testimonials. This is what Barclay says.'

come in time, I shall endeavour to get this physick also prepared after his better way.[a] By the last post I got from a counsellor's hand of the elector of *Brandenburg* these lines.[b]

– *Invisit me heri quidam nuperrimè Ratisbona profectus, qui ibidem singularem junioris Helmontii notitiam habuit.*[c] *Is probitatem ac beneficentiam ejus insigniter deprædicabat, eumque apud Cæsarem electorem Moguntiacum, aliosque principes, et in sublimi gradu constitutas personas, magna versari in authoritate, mihi referebat, quamvis ipsis Germanam veritatem rotunde dicere non dubitaret.*[d] *Aulici vero status tædium omnino eum jam tum percepisse, solitariamque vitam agere decrevisse. Ratisbonæ commoratum, insignia sibi vestimenta conficienda curasse, ut hoc ipso eo commodior ad magnates sibi pateret aditus. Cum vero locum mutaret, discessumque pararet distributis aliisque dono datis magnificis ac pretiosis istis vestibus, inveteratam rubri coloris togam pelle seu corio subductam, propriaque manu sarcinatam (cum non solum sartoriæ, sed ut reliquarum fere artium omnium peritus sit) induere, iterque suum plurimum pedibus perficere. In egenos ac necessitate pressos valde esse munificum, siquidem Ratisbonæ aliquem, qui solvendo non erat, ne infamiæ notam subiret, aliquot centum imperialibus ex diversorio redemit, nescientibus cæteris, unde tantæ fuit particeps pecuniæ. Curare hinc inde pauperes ancipiti et acuto morbo laborantes. Artem vero aurificam omnino eum repudiare, ludibrioque habitos chemicos hac de causa literis eum invisentes auriperdos vocare.*[e] The letter is dated the 5th of May, 54. Another

[a] Clodius's laboratory assistant is mentioned above, p. 175n.

[b] The Elector of Brandenburg was Friederick Wilhelm, der Grosse Kurfürst (1620–88), Elector from 1640. The Elector's counsellor is possibly Otto von Guerike; see below, p. 245.

[c] For Francis Mercurius van Helmont, son of J. B. van Helmont, see above, p. 127n.

[d] The Elector of Mainz was Johann Philipp von Schönborn (1605–73).

[e] 'Yesterday a certain person visited me who had very recently set out from Ratisbon, and who had had a particularly close acquaintance in that place with the younger Helmont. He spoke highly of that man's [i.e., Helmont's] probity and kindness; and he told me that he was held in great authority by the imperial Elector of Mainz, and other princes, and persons who have positions of the highest rank – although he would not hesitate to tell them the honest truth elegantly. And he told me that since he had indeed by this time already realised all the irksomeness of a life at court, he had decided to live a life of solitude. While staying at Ratisbon, he had taken care to have a fine set of clothes made for himself, so that by this means he could have clear access all the more easily to the magnates. When, indeed, he was going to change the place where he lived, and was getting ready for his departure, he gave away as gifts all the rest of those clothes of his, splendid and expensive as they were, and put on an old cloak of a reddish colour, lined with hide or with leather, which had been patched up by his own hand (since he was skilled not only in the tailor's trade, but in nearly every other art as well), and completed most of his journey on foot. To those who were in need and were oppressed by poverty, he was lavish in his generosity; for, indeed, he paid off a bill of a hundred imperial [crowns] at an inn in Ratisbon, on behalf of a person who was not in a position to pay the sum, to prevent him from suffering the shame of being found out, and he made sure that no-one else knew how the man had got hold of so much money. He used here and there to cure poor people who were suffering from a dangerous and acute illness. And he used entirely to dismiss the art of making gold; he laughed at those chemists who used to send letters to him on that subject, and used to call them "losers of gold".'

counsellor of the said elector, who lodgeth in my house (as I intimated in my former) tells me of an antimonium rosatum, which he had some years ago to smell unto, as far surpassing roses and other curious odours.[a] Also that he had been very credibly informed of another of his acquaintance in *Germany*, which has had aurum rosatum yielding a far more transcendent fragrancy, than that of antimony.[b] If gold could be made thus vegetable, really I should prefer it before the producing of the best roses twice in a year. I fear I shall not be able to keep that worthy forenamed gentleman, who for my sake (for so he is pleased to phrase it) is come into *England* for a short time, so /p. 266/ long till your happy arrival. But having begun to take the next and best course, I could have made him acquainted with your dearest sister,[c] who perhaps will give you such a character of him as he deserves. He presents also his most humble service unto you. There is another, an Englishman, that hath been specially recommended unto me by Sir *K. D.*[d] His name is captain *Saunderson*, who hath been of the king's party, but intends now to settle himself with his family in *Ireland*, where he hath purchased land to the value of 200 *l.* a year.[e] I have devoted him likewise after a special manner to your service. For I find him a very pretty gentleman, full of good arts and contrivances, but his main design is by a new experiment or ferment to make as much saltpetre, as you please out of salt or sea-water. When my chemical son spoke with him, he confessed, that he had hit right on his ferment, which was his secret. I long for more letters from your hands, that they may furnish me with occasions of enlarging myself, and of gratifying your more particular desires. Here you have a rude draught of Dr. *Jungius*'s Protonoetical Philosophy, which as it lyes in a pack bound about with such coarse expressions and terms as he useth, makes no great shew; but if it were fully opened, a great deal would appear to be rich cloth of Arras.[f] This is the judgment or opinion of your,

[a] For Johann Friedrick Schlezer see above, p. 177n. While in London, he stayed with Hartlib.

[b] This acquaintance has not been identified.

[c] Hartlib refers to Katherine Jones, Lady Ranelagh.

[d] For Sir Kenelm Digby see above, p. 99n.

[e] This is presumably Captain Ralph Sanderson, who obtained the lease of East Combe Kent after the Restoration, and commanded the yacht which took William III and his bride back to Holland after their marriage. H. Drake (ed.), *Hasted's History of Kent, Corrected Enlarged and Continued to the Present Time, Part 1, The Hundred of Blackheath* (London, 1886), pp. 49, 80, n. 5.

[f] For Joachim Jungius and the manuscript work mentioned here see above, p. 173n.

Dear Sir,
most entirely assured
faithful friend to serve you,
SAM. HARTLIB.

From my house (which desireth to have their most humble service presented unto you) near *Charing-cross*, May 15, 1654.

— 1655 —

Lost letters dating from 1655 are as follows:

Wotton's list (see above, p. xxvii) includes as no. 6 'Lady Digby'. This is either Beatrice, wife of John Digby, first Earl of Bristol, who lived at Sherborne Castle, close to Stalbridge, or her daughter-in-law, Anne (d. 1697), wife to George Digby (1612–77), second Earl of Bristol.

Miles records the following lost letters (BP 36, fol. 161v):

'Ball Letter of thanks, N[o] W[orth]'. Ball is probably Roger Ball, a letter-carrier, for whom see above, p. 146n.

'Loftus to Mr. Boyle N.W.' This is possibly Dudley Loftus (1619–95), Irish jurist and orientalist. Loftus may have been writing to Boyle about matters connected to his recent appointment as a master of the chancery in Ireland.

'Bisse [?] Private affairs' This may be John Bysse (d. 1679), Recorder of Dublin during the Interregnum and Chief Baron of the Irish Exchequer after the Restoration.

The second Earl of Cork's diary (above, pp. xxvii–xxviii) records a letter to Boyle of 1 October 1655 'about Ma. Whitbeyes taking too much of Fermoy'. This is a reference to Captain Marcus Whitby, of Fermoy, County Cork, mariner, whose will was proved in 1658; see Sir Arthur Vicars (ed.), *Index to the Prerogative Wills of Ireland, 1536–1810* (Dublin 1897), p. 485; cf. below, pp. 207, 208, 324.

For other lost letters that have been placed by date see below, p. 187.

MALLET[a] to BOYLE — 27 March 1655

From the original in BL 4, fols. 8–9. Fol/2.
Previously printed in Birch (ed.), *Works* (1744), v, 630 and Birch (ed.), *Works* (1772), vi, 634–5.

Sir,

Your sicknes in London some moneths since, gave me too much sadnes, either to be silencd on that occasion, or to be exprest with lesse trouble to you, then in

[a] For Mallet see above, p. 103.

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those few sillables, wherein I venturd to confine my griefe; in onely telling you, I was in no small measure sencible of one on that Score: & Now, Sir, having lately understood the much advanced hope of your regaining health, which, if it please God to perfect, by a totall remove of all those lingring attendances on sicknes, & speedily to redouble your strength, which I most zealously beseech him to grant you, my revived joy will be as now my hope of it is already, beyond the expression of a letter: & I longingly wish for the happy opertunity of performing my Congratulating dutyes, when I may have the honor of waiting on you att Stalbridge, where I understand you are shortly expected:[a] But, Sir in the meane time, I could not withold these lines; which yet, I should have assumd the confidence to have sent you two or three weekes sooner; had not *Parthenissa* requird some of my time to entertain her, with most serious observance of her[1] excellent Beauties, which are so illustriously delightfull, that even the ashes & funerall Flames of that Phœnix obscure th[e][2] brightest Princesses & their Romances:[b] Yet her Author must be petitiond not to leave her there, but to revive & prosecute her Oracles[3] engagement; as much for the readers, as can be imagind, for her servants satisfaction; unles possibly, & very truly too, it may be thought a greater happines, to have such a monument, as your Honorable brother hath given her, then any other Fruition could be; & a high recompence of those Vertues, for all their persecutions to be placed in so serene a sphære as that admired story; which were not that way of writing warranted by some sacred presidents, & by ever being the cleerest arguments & tryalls of the most able Genius's & the choycest favors they bestow to enlighten the world with; My Lord Broghill is Authority enough to make Romances need no other, & to prove that none can so well write of such Excellencies as are the Misteries of Love, of State, & Military Glory, but such an Excellent Person who is as much replenisht with the knowledge as highly renownd for his management, of them: & certainly nothing can be said against Romances, after his owning them, whereby they are rendred as safe in his being their Sanctuary, as in their owne Vertue: And if ever they must be Excelld by any thing more serious or devine, it can onely come from the same hand, or his Noble brothers publishing his owne Seraphicke treatises, which heretofore I have been honourd[4] with the sight of, as also by the many other high favors, which have infinitely rendred me[c]

Sir
Your most obliged, most humble
& faithfull servant
John Malet

Pointington.[d] 27 Mar:
1655.

[a] For Stalbridge see above, p. 25n.
[b] For Broghill's *Parthenissa,* see above, p. 84n.
[c] For Robert Boyle's *Seraphic Love*, see *Works*, vol. 1.
[d] For Pointington see above, p. 105n.

To the honorable
Mr. Robert Boyle
in London
present this.

Seal: Oval. Achievement of arms. Shield: three escallops. Crest: issuant from a coronet a dragon's head (?).
Endorsed by Wotton: 'Mr Mallet 1655 Commendation Of Parthenissa' and 'Letters from several Hands from 55 to 87 Some without date'. With ink number: '2'.[5]

WARREN to BOYLE May 1655

Miles's list (BP 36, fol. 145v) records this as 'Warren from Dublin private aff[airs] May 55'. Warren has not been identified.

MURRAY to BOYLE June 1655

Miles's list (BP 36, fol. 162) records this as 'Murray about his Estate at Stalbridge NW. June 55'. For Tom Murray see above, p. 41n.

BRÜN [UNMUSSIG] to BOYLE 3 September 1655

From the holograph original in BL 5, fols 154–5. Fol/2.
Not previously printed.

Generosissime Domine

Ante aliquot septimanas literas ad Te expediebam in quibus (necessitate coactus) a Domino efflagitabam, ut per famulum suum aliquid Salis Armoniaci, praeter alia quædam emi[1] curaret; quoniam vero jam, forte fortuna, incidi in

Most noble Lord,

A few weeks ago, I sent you a letter in which I (driven by necessity) importuned your Lordship to purchase some sal ammoniac as well as other things through his servant. But now, by good fortune, I have fallen upon a good supply of sal ammoniac, and purchased it,

bonam Salis armoniaci copiam, emi eam, ita ut non opus habeam alio. quare in locum ejus 4. libr.[2] Nitri comparari curet, rogo. Nihil ulterius habeo, quam pro vota pro Tua prosperitate, Longaque vita.

Tuus, Generosissime Domine,

Corkeii 3. 7bris[a] ex animo servus
1655. Joh. Unmissig.

Generosissimo Domino
Roberto Boylio. / R.

---

so that I have no need of any more. So in its place I ask that [your Lordship] may see that four pounds of nitre be provided. I have nothing further to say, except to pray for your prosperity and long life.

Cork, 3 September Your devoted servant, most noble Lord,
1655.[a] Joh. Unmussig

To the most noble
Robert Boyle / R.

Seal: Slight traces of wax.

BOYLE to MALLET 5 September 1655

From the original in a scribal hand, signed by Boyle, in the Archives of the Marquis of Bath, at Longleat, Portland Papers, volume 2, Autograph Letters 1613–95, fols 121–2. 4°/2.

Previously printed in Birch (ed.), *Works* (1744) v, 630. Also printed in Birch (ed.), *Works* (1772), vi, 634–5. Calendared in *RCHM* Bath 2, p. 113.

Sir

I find by your very obliging Letter deliver'd me by Mr Mawdesly,[b] that your Civilitys to me are as unwearied as[1] unmerited, this last being neither the first or

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[a] For Brün and his links with the Boyle family, see above, pp. 158n., 163n. It was presumably in this connection that he was domiciled in Cork.

[b] For Mr Mawdesley see above, p. 146n.

the second favor of this Nature, whereby you have bin pleas'd to make me happy. And indeed I should be almost as confounded as I am delighted to receive so many effects of the perseverance of your Goodnes, since I paid You my Acknowledgements for any of them, but that Your Letters are Blessings too welcome to be hindered by Circumstances from being such, & my Resentments wou'd have spoken as early as they were borne (& that was still assoone as ‹I› receiv'd your Favours) had they not bin silenc'd by the Commands of the Physitians whom a distemper in my Eyes engag'd to forbid me the use of a pen, which prohibition hoping my recovery would quickly antiquate it, confin'd my Gratitude to my Heart, where it was (as Passions sometimes are) as great as speechles. But though I was very unwilling to presume to write to you by a Proxy whilst I durst cherish any hopes of being[2] suddenly in a /fol. 121v/ condition of writing to You without One, yet now the Continuing distemper of my Eyes forbidding me to retaine those hopes, my Resentments would not suffer me any longer to containe the humble Thankes I owe You for so many welcome Letters, & commands me to assure You that whilst I was silent, I was as much Your Servant, as if I loden Every Post with Protestations of being so. My Health is yet so unconfirm'd that the Necessity of taking Physicke to prevent the danger, wherewith the fall of the Leafe threatens me, of a Relapse, recalls me for a while to London, which I must thinke an unhappynes if my returnes be so unfortunate as to make me misse the satisfaction You are pleas'd to revive me with hopes of to kisse[3] Your hands in these parts. But my stay where I am going not being intended to be long; I despaire not of finding You at Poinington at my returne to Stalbridge, & if in the meane time my stay at London may be any wayes improv'd to your service You will much injure Your owne ‹Merit› & my gratitude if You decline to honour him with Your Commands who is so Ambitious by his Obedience to them to evince himselfe

Sir
Your most affectionate
most humble & most
Obliged Servant,
Robert Boyle

Stalbridge Sept. the 5.
1655

[4]Sir I shall beg to be nam'd a very humble servant to your Lady[a]

For my highly honour'd / friend John Mallet / Esqr

Seal: non-heraldic; apparently showing a standing figure facing right.
Endorsed on fol. 121. '5 Sept 1655' and 'R Boyle'; and on fol. 122v: 'Mr Boyle 1655'.

[a] For Florentia Mallet see above, p. 106n.

[BOYLE] to [HARTLIB] 14 September 1655

From the holograph original in BP 37, fols 194–5. Fol/2.
Not previously printed.

From Eaton[a] this
14 of Sept.
1655.

Sir

Tis not I confesse without some reluctancy that I dispose my selfe to obey the Commands you were pleas'd to impose on me at our Separation of sending you an account of what I could observe relating to husbandry in my Journey to Stalbridge.[b] For besides that Studyes & Employments of a very differing Nature have long kept my Thoughts very great Strangers to rurall Objects, besides this I say. the strange unseasonablenes of the weather since I left you having[1] almost confin'd me to Highwayes & Innes have rendred my Journey almost as uninstructive as Unpleasant, & reduc'd me to present to your view Nothing but Trifles which I am just enough to thinke very unworthy of You & perhaps proud enough to blush to call them Mine. especially that part of England I have travers'd since I left You being lesse then any other I have seene beholding to the Industry of the Inhabitants. But I know you expect to be obey'd & so you shall be were it but to punish you for having condemn'd me to an employment I am so unfit for. After then my occasions had drag'd me out of Towne I made Oxford my way (though it were many miles out of it) on purpose to visit our Ingenious Freind D[r] Wilkins with whom I spent a day with noe Small Satisfaction his entertainment did as well speake Him a Courtier as his discourse & the reall Productions of his Knowledge a Philosopher.[c] But tho I were used with a huge deale of Civility in divers Colledges during my short stay at Oxford (where I continu'd not full two dayes) yet that which most endear'd[2] to me my Entertainment /fol. 194v/ was the delight I had to find there a Knot of Such Ingenious & free Philosophers, who I can assure You doe not only admit & entertaine Reall[3] Learning but cherish & improve It,[d] & have done ‹& are like to doe› more toward the Advancement of it then many of those

[a] Evidently written at Eton when Boyle was on his way back to Stalbridge. See Maddison, *Life*, p. 85, where a lengthy quotation is given.

[b] As is clear from John Mallet's letter to Boyle of 27 Mar. 1655, Boyle spent some time at Stalbridge in the middle of 1655, leaving shortly after 5 Sept. (see above, p. 189) for London because he was suffering from distemper of the eyes, and then making the return journey to Dorset at the time of this letter to Hartlib a week later. By the end of 1655 Boyle was established at Oxford. See Maddison, *Life*, p. 86.

[c] For John Wilkins, see above, p. 144n. At the time of the Restoration Wilkins attended scientific meetings at Gresham College and was among the founders of the Royal Society.

[d] Boyle refers to the Oxford Experimental Philosophy Club. See Frank, *Harvey* (above, p. 66), pp. 51–89.

Pretenders that doe more busie the Presse & presume to undervalue'um, & during the little time I spent there I had the Satisfaction to heare both the Cheife Professors & Heads of Colledges maintaine Discourses & Arguments[4] in a way so far from Servile that if all the New Paradoxes ‹have›[5] not found Patrons there, tis not their Dissent from the Ancient or the Vulgar Opinions but some juster Cause that hinders their admission, so that ‹much of› what you & I had bin inform'd of concerning the Servilenes[6] & Disaffection to reall Learning of that University may perchance have bin true when the Informers liv'd there but certainely now the Persons are mistaken[a] & so injur'd, they being so far from being Censurable for their Predecessors failings that it ought to[7] be their Praise not to have imitated them, & this I mention to You partly because You will not perhaps altogether slight the Testimony of a Person who has bin noe absolute Stranger to divers forraigne Universities & has not yet had the ill lucke to be look't upon as an enemy to usefull Learning & partly because what concernes Naturall Philosophy in generall must not be thought Irrelative to Husbandry; which is but an application of it to[8] rurall Subjects. In Dr Wilkin's his Garden I saw as fine Indian wheat as I remember to have Seene in any part of Europe, I saw[9] likewise some Nasturtium Indicum which flowers he sayes make excellent Sallads & very wholesome indeed my tast[10] made me apt to thinke that the Plant abounded in volatile salt the chaw'd Leaves having upon the tongue a Penetrancy little inferior to that of Garden Scurvey grasse; There I saw likewise divers bushes of /fol. 195/ the Monthly Rose which beares every Month during the Summer & had then (which was the middle of August) unblowne buttons upon them. To tell You what I observ'd in relation to other Parts of Philosophy would be not only tedious but improper since You have Confin'd me to Husbandry concerning which to loose ‹no more›[11] of your time & spend noe more of my owne then what is necessary to obey You I shall summe up what occurs to me under these following heads.

I Concerning Bees

Dr Wilkins shew'd me in his Garden one of those transparent Hives whose Description you have lately publish'd in Your reformed Common wealth of Bees[b] those industrious little fill'd 2 of the 3 Stories of the Hive pretty full of Juicy Combes, but the other story was nothing neere so well replenish'd which did somewhat discontent the Dr who is as all lovers of reall Learning ought to be a somewhat severe Philosopher but a little Experience will direct us to supply any

[a] Evidently a reference to John Wilkins's and Seth Ward's reply entitled *Vindiciae academiarum* (1654) to Thomas Hobbes's *Leviathan* (1651) and John Webster's *Academiarum examen* (1653), both of which were directed against the universities.

[b] A description of Wilkins's transparent hives occurs in the *Diary of John Evelyn*, ed. E. S. de Beer, 5 vols (Oxford, 1955), iii, 110 (13 July 1654). Boyle refers to Hartlib's *The Reformed Common-wealth of Bees* (1655), where the transparent hives are described in a letter from Christopher Wren to Samuel Hartlib, 26 Feb. 1654, pp. 50–1. On bee-keeping see Adrian Johns, *The Nature of the Book* (Chicago, 1998), p. 266ff.

little deficiency which not expect in our first Experiments of that Nature is to be unmindfull of that Saying (lesse beleiv'd then if deserves) Nihil semel Inventum fuit et Perfectum.[a] In the meane time this transparent hive ‹answers the maine designe of its Inventors by› giving[12] us ‹the› opportunity of prying into the Recesses & Industry of its busy Inhabiters, a thing which I remember in his History of Bees seemes to complaine of the want of & I somewhat wonder that since the Romanes time such an Invention has not till now bin perfected since so famous & ancient a writer as Pliny ‹who› mentions[13] the way whereby Bees are ingendred spectatum Romae (saies He) Consularis cujusdam suburbano, alveis cornu laternae translucido factis lib. XI. Cap. XVI.[b] In the west at a place where I accidently was a Gentleman whom I thinke you also know told me that a Neighbor or a Tenant of his uses to preserve both his honey & his Bees all the Winter by carrying them up when they begin to feed upon the maine stocke into some /fol. 195v/ darker roome whence all Light being excluded & they being kept warme with Blankets or other convenient Coverings they will sleepe all the winter & so leave their Honey untouch't till the Spring inviting them abroad, they may get as well food as Stomackes, This Bee master I would willingly have spoken but he was not then to be had.[c] Relating this to my Gardener at Stalbridge who is very fond of Bees he told me that the last winter when his Neighbours lost most of their Bees he preserv'd his which were more unlikely to survive then any of theirs by laying neere their hives in very shallow vessels a Composition made of[14] 2 spoonefulls of honey 1 small spoonefull of common salt & half a pint of faire water,[15] upon this liquour he strow'd Rosemary for the bees to rest upon & to prevent the danger of their drowing [*sic*] in case they should fall into it he[16] suffer'd not ye liquor to be deeper then the legges of the Bees, who he said devour'd it greedily & thriv'd with it almost to admiration.[d]

LADY RANELAGH to BOYLE — 12 October [1655][e]

From the original in BL 5, fol. 31. 4°/1.
Previously printed in Birch (ed.), *Works* (1744), v, 558. Also printed in Birch (ed.), *Works* (1772), vi, 523–4.

[a] 'Nothing is once invented and perfected'.

[b] Boyle quotes from Pliny's *Natural History*, XI. 16: 'having seen at Rome on the suburban estate of a certain ex-consul, who had hives made of the transparent horn of a lantern'.

[c] This is possibly Nathaniel Highmore, for whom see above, p. 143n.

[d] The text ends at this point. Boyle's gardener has not been identified, but a letter from the gardener to Boyle exists; see vol. 2, pp. 72–3.

[e] This letter has been dated on the basis that Boyle moved to Oxford at some point in the latter part of 1655 or at the very beginning of 1656; see Maddison, *Life*, pp. 86–7.

My Brother,

It has pleased god to bring us safe to oxford & I am lodged at Mr Crosses with dessigne to be able to give you from experience an accoumpt which is the warmest rome, & indeed I am satisfied with neither of them as to that poynt, because the doores are placed soe just by the Chimeys that if you have the benifit of the fier you must venture haveing the inconvenience of the wind. which yet may be helped in either by a folding skreene & then I think that which lookes into the garden[1] wilbe the more Comfortable though he have new hanged & intends to matt that you lay in before,[a] You are here much desired & I could wish you here as soone as you Can. for I think you would have both more liberty & more Conversation than where you are, & both those wilbe necessary both ‹to› your health & your usefullnes, & as I am sure I have aboundantly shared in the latter from you soe, I must proffese[2] to be very hartely Concerned for the forme, & ‹must›[3] beg that you would be soe too, & let me see you are by your Cares for its preservation, which are the teermes upon which for ought I see you must have that blessing, & I am sure you ought not to grudg your selfe your Cares. since by affording them there, you bestow them too upon your friends & upon mee[4] I am sure in the most obligeing way. who wil not give any of that[5] number that pretend to that relation to you the preceedency in poynt of the affection belonging to it, though I must many In poynt of the other qualifications, & Alass how evident is it, that we had need of better things then the best Injoyments of creatures to make us happye. when e'ne friendship its selfe brings its Sencible afflictions as well as refreshments with it, the late Experience I have had of this in our parting. wil not I hope bee without instruction to me, as I am sure it has not binn without great evidence of the much obligation that lyes upon me in poynt of gratetude as well as of inclination to be yours

affectionatly & Constantly

K.R.

[6]the 12 of 8ber

I received the favour of the bookes from you by my sister Corke.[b] & hope you wil also give me leave to pay for them.

[7]My service to Deare Broghill, my sister Barrymore & Sister Broghill, & the same very affectionatly to my Deare Lord President and his Lady.[c] I shall writ to them al shortly, if it please god

Endorsed by Wotton: 'Lady Ranelagh (4)', and with Miles's ink number: 'No 4'.[9]

[a] Mr Crosse was Boyle's landlord in Oxford.

[b] The 2nd Earl of Cork's wife was Elizabeth, Countess of Cork, for whom see above, p. 111n.

[c] For Alice, Dowager Countess of Barrymore, see above, p. 86n. Lady Ranelagh also refers to Lady Margaret Broghill, for whom see above, p. 23n. Henry Lawrence (1600–64) became Lord President of Cromwell's Council of State in 1654. His wife was Amy, daughter of Edward Pelham.

— 1656 —

Lost letters dating from 1656 are as follows:

Wotton's list (see above, p. xxvii) includes the following:

No. 9 'Anonymous with chymical Receits'. This item has not been identified. It is conceivable that it accompanied a series of recipes sent to Boyle by one of his associates in these years, which were abstracted in his work diaries; see Michael Hunter and Charles Littleton, 'The Work Diaries of Robert Boyle', *NRRS*, 55 (2001), forthcoming.

No. 10 'Mr. Farrar'. This might be Dr Richard Farrar, friend of Sir Kenelm Digby; see above, p. 94n. It could also be James Farrer, who was assessed for two hearths in South Parrat Tithing in the Hundred of Beminster, Forum and Redhond, Dorset, in the early 1660s. See C. A. F. Meekings, *Dorset Hearth Tax Assessments*, 1662–4 (Dorchester, 1951).

No. 11 is listed as 'Id[em]'.

No. 12 'Mr. Maundy'. Possibly Mr Mawdesley, previously Boyle's steward at Stalbridge. See above, p. 146n.

No. 356 'Mrs Supple 1656'. In 1622 William Supple, Cork's ward, married Katherine Smyth, daughter of Richard Smyth and Mary Boyle, sister of the first Earl of Cork. See Townshend, *Life and Letters* (above, p. 30), p. 58; Maddison, *Life*, p. 298.

Miles records the following lost letter (BP 36, fol. 149): 'Letter from Dantzic 1656 chiefly political: extract Mr Comenius of the miseries he and his country men were under &c'. This letter, either from or referring to Jan Amos Comenius (1592–1671), may well be on the subject of the destruction of Leszno in Poland in the course of the Russo-Polish wars of 1654–6. See Turnbull, *H. D. & C.*, p. 374.

In addition, a letter to Boyle from the second Earl of Cork, dated 14 January 1656, is mentioned in the second Earl of Cork's diary (see above, pp. xxvi–xxvii).

The following letters, referred to in surviving letters, are no longer extant:

A letter from Boyle to Clodius, 22 February 1656 (below, p. 197).

A letter from Bathurst to Boyle before 14 April 1656 (below, p. 204).

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CLODIUS to BOYLE 3 March 1656

From the holograph original in BL 2, fols 17–18. 4°/2.
Not previously printed.

Extract. Litter. ad me ex Germania[a]
Transmissarum.

In sale ♆ri volatilisando diu est quod sudaverim, Tandem vero, et ipsa expertus sum, omnes spiritus acidos, id efficere, per creberrima cohobia, si iis ♆rus ad albedinem calcinatus, imprægnetur, addendum vero est acidis illis seu corrosivis menstruis, optimè deflegmatis, tertia pars spiritus tartari et vini depuratissimi. Sic melius et potentius fixa salis alkalizati domicilia reserantur. Cum itaque tartarus tuus ad albedinem vi ignis perductus, ac præ satietate nihil amplius spirituum acidorum imbibere valet, eum retortæ vitreæ lutatæ injice, ac summâ ignis violentia[1] triduum integrum urge, ad exprimendum omne id quod salinum est. Sin vero præter spem subtilitate gustus adhuc micam Salis in ☉ deprehendas, suadeo ut deponas seu rejicias id contemnasque quod pauculum est remanens, sed liquorem tortura ignis profectum huic capiti mortuo iterum adfunde, secundaque vice proelo[2] ignis torrido id subjice donec laticis hujus philosophici fontem omnino exhausiveris. Liquori huic mirabili soleo admiscere tartari salis, aliquoties per deliquium perpurgati, nonam partem, iterumque, per retortam, post præmissam destillare digestionem, sic augeo et deflegmo[3] acetum hoc acerrimum, ut potis sit cunctorum durissimorum corporum claustra perrumpere. De sulphure quæ refers

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Extract from a letter sent to me from Germany:[a] I have long sweated over the problem of volatilising salt of tartar; at length, indeed, I have learned that all acids can achieve it, through thorough cohobation; if the tartar, calcined to whiteness, is impregnated with them, and if there has been added to those acids, or corrosive menstrua thoroughly dephlegmed, a third part of spirit of tartar and distilled wine. Thus the fixed abodes of the alkalisate salt are better and more firmly laid open. When your tartar is reduced to whiteness by the flame, and, being saturated, cannot absorb any more acid, put it into a glass retort covered with lute and for three whole days heat it with the hottest possible flame, in order to drive out all salty matter. But if contrary to your desires you perceive, by the subtlety of its taste, that there is still the least bit of salt in the *caput mortuum*, I advise you to put it aside, reject it and despise what little is left, and instead to pour the liquid which has been distilled by the fire back onto the residue [*caput mortuum*], and subject it to a second fierce heating, until you have exhausted the fountain of this philosophical water. I am accustomed to mix with this miraculous liquid a ninth part of salt of tartar, several times thoroughly purged *per deliquium*, and again putting it into the retort to distill that solution after a period of digestion, and so I augment and dephlegm this most sharp vinegar so that it becomes able to break open the prisons of all the most solid bodies.

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[a] Clodius was in correspondence with Dr Walter of Hamburg, and it is possible that he was extracting material from Walter's letters. See below, p. 223n.

mihi ex parte notissima sunt. qui enim hujus mineralis virtutes non expertus est, vix unquam induci poterit, ut credat stupenda illa quæ eo perficiuntur. Multa quoque & ego[4] tamquam propria inventa addere possem, nisi aliquid subesset, quod prohibeat, quo minus hujus epistolæ fidei plurima committantur. Itaque ubi confessus fuero, illa quæ de sulphure helmontius proclamavit esse certissima, unicum hoc adjicere audeo. quod notus sit mihi modus extrahendi sulfur externum, à vulgari currente ☿ quod in re medica et chymica usurpatum, multis parasangis vulgare sulphur præcedit.[a] Atque ut aliquid singularis oculis tuis subjiciam. En nullo tibi dono hujus particulam, quæ si[5] æque te ac me admiratorem inveniet, forsan majora sequentur. /fol. 17v/

Cæterum[6] illud quod de Alexipharmacorum differentiis notas, non possum quin proferam aliquid rari et notatum dignissimi.[7] Sume Araneam magnam eamque vitro include ac Soli expone donec exurerit infectum hoc aridum frica inter digitos, reperies lapidem parvum omnium amuletorum[8] et alexipharmacorum summum, nullum enim venenorum genus est quod ab hoc non expugnetur. In peste vero quanti sit usus si dicerem, vix fidem mihi haberes. Intra corpus non nisi unicus adsumitur, quia sudorem sed profluvium aquæ ‹potius› excitat. refellandus est tamen æger dum hoc operatur pharmacum, elixiri Limonum[9] cum succo facto extrinsecus vero in syndone regioni cordis appenditur. &.

The information about sulphur which you give me is already quite familiar. For someone who is not familiar with the virtues of this mineral would be able to be brought to believe the amazing results which are carried out with it. I could add, myself, many further discoveries of my own, were I not prevented by the fear of putting too much into this letter. And so, after I have confessed that those things which Helmont proclaimed about sulphur are most certain, I dare to add only this: that I know a method of extracting an external sulphur from the common running quicksilver, which, used in medicine and chemistry, is many leagues in advance of common sulphur.[a] And so that I may place something extraordinary before your eyes, look, I am giving you a small part of this, which, if both you and I find it admirable, greater things may follow.

On other matters, since you note the differences among antidotes, I cannot but show you something most rare and noteworthy. Take a large spider and put it in glass; expose it to the sun, until you have burnt off the infection; rub it when dried between your fingers, and you will find a small stone, the highest of all amulets and antidotes, for there is none among poisons that is not expurgated by it. Indeed if I told you of all its uses against plague, you would scarcely believe me. It can only be taken into the body alone, because it excites a sweat, or rather a cascade of water. But the patient must be restrained[?] while this medicine operates, and the elixir of lemons made with their juice can be placed externally on a bandage in the region of the heart, etc.

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[a] For van Helmont, see above, p. 91n.

Vir Nobilissime

Respondissem citius literis tuis 22 Febr. Oxonii datis nisi necessitudines et curæ meæ supra modum fuissent insignes, quibus tamen cito remedium adfuturum spero.[a] ‹Nam›[10] Præterita hebdomade literas à Medico holsatiæ Principis accepi, incitantes me ad redeundum in patriam, atque conditiones haud ubivis obvias offerentes:[b] Fateor equidem mihi molestissimum fore ex Anglia exire, et tot amicos derelinquere, verum si res angusta, domi non fiet angustior cogar id facere, quod animus meus odio habet, id est servilem agere vitam inque aulis principum vivere. Sed hac de re forsan plura proxima vice. Iam vero mitto tibi extractum literarum ad me ex germania transmissarum existimans nihil ad rem futurum, si reliqua non chymica[11] et pharmaceutica[12] misissem. /fol. 18/

Cæterum euge te rogo, ne obliviscaris Aquæ hirundinum mihi promissæ, quæ tamen forsan eadem ut cum illa quam phamacopæa Augustana præscribit.[c] Unguentum quoque et remedia ad partum Doctoris Chamberlainii ut mihi communicare velis vehementer precor.[d] Quod superest vale et fave.

Dabam e Museo meo 3 Martii Anno. 1655.

T. devinctiss. F. Clodio

Most noble Sir,

I would have replied more quickly to your letter from Oxford, dated 22 February, had my cares and difficulties not been unusually pressing; for which, however, I hope there will soon be a remedy.[a] Last week I received a letter from the doctor of the Prince of Holstein, encouraging me to return to my homeland and offering me a situation of the sort that one rarely meets with.[b] I must say that it would be most painful to me to go out of England, and leave so many friends; and indeed if my narrow personal circumstances are not to become still narrower, I shall be compelled to do, what my spirit detests, that is to live the life of a servant at a prince's court. But more of this, perhaps, in my next letter. Now, indeed, I send you an extract from a letter sent to me from Germany, in the belief that nothing to the good will be achieved, if for the rest I do not send you chemical and pharmaceutical news.

On another matter, I ask you not to forget the water of celadine that you promised me; this is perhaps the same as that which the *Augustana pharmacopaea* prescribes.[c] Also I earnestly beseech that you may wish to send me the unguent and remedy for childbirth of Dr Chamberlain.[d] For the rest, may you be in good health, and well disposed towards

Written in my laboratory, 3 March 1655.

Your most humble servant, F. Clodius

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[a] This letter written from Oxford on 22 Feb. does not survive, but is the earliest positive evidence that Boyle was established at Oxford.

[b] Probably Joel Langelot (dates unknown), for whom see *Works*, vol. 3, p. 383n.

[c] i.e., the *Pharmacopoeia Augustana* (1573), from Augsburg, of which many editions appeared in the 16th and 17th centuries.

[d] This is a reference to Peter Chamberlen (1601–83), physician specialising in midwifery. He advocated the incorporation of midwives. See Webster, *Great Instauration*, pp. 261, 290–1.

For the / Honourable Robert Boyle
at / Mr. Crosses house / over against Al soules' Colledge in / Oxford.
2d

Seal: Octagonal. Seems to be heraldic. Bird (not of prey). Possible crest/wreath visible.

JOHANN FRIEDRICH SCHLEZER[a] to BOYLE 14 March 1656

From the holograph original in BL 5, fol. 68. 4°/1.
Not previously printed.

Illustris ac Generose Domine,

Tanta Illustrissimæ Sororis tuæ in me extant merita, Tanta mea erga ipsam existit veneratio,[b] Tam insignis porro eximiarum Virtutum tuarum mihi facta est prædicatio, ut quoties animum meum subit vestri memoria (obversatur autem illa mihi ferè continuè.) toties mirificâ quâdam consolatione recreer, magnamque partem felicitatis meæ reputem, quod non tantum notitiâ vestri benigno quodam sydere[1] beatus sim, sed quod favoris quoque ac benevolentiæ vestræ haud dubitata documenta ex Angliâ reportaverim. Quo magis grata mihi fuit occasio illa, quam Nobilissime Hartliebius mihi obtulit, studium observantiam ac officiosam promptitudinem meam vobis declarandi.[c] Atque utinam lætior illa fuisset, licuissetque sano potius ac valenti, quam ægro ac infirmo grata ac accepta ministeria præstare.

Worthy and noble Lord,

I have so great a sense of your illustrious sister's[b] merits, such veneration for her, and furthermore such particular respect for your own remarkable virtues, that whenever I remember you (which is almost continually) I am renewed by a certain wonderful consolation, and I consider it a major part of my happiness, that not only am I blessed by some benign star with your acquaintance, but also that I have brought back from England undoubted proofs of your favour and kindness. So I was most grateful for the chance, which the most noble Hartlib afforded me,[c] of declaring my zeal, respect and eager readiness to serve you. Would that the occasion had been happier, and that I could have offered welcome services to a healthy and flourishing man, rather than to one sick and infirm.

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[a] For Schlezer see above, p. 177.
[b] Schlezer refers to Lady Ranelagh.
[c] For Schlezer's residence with Samuel Hartlib, see above, p. 177n.

Sed quandoquidem DEO visum fuit illustrem animam non satis commodo in domicilio collocare, dubium mihi quidem non est, quin Tu viribus animi, gratiâ Divinâ corroboratis, debile corpus sustentes: Nostri autem tanto magis officii est, quæcunque excogitari poterunt remedia ac solamina summâ curâ subministrare. Gratulor autem mihi, quod ab aliquo jam tempore amicitia mihi intercedat cum Clarissimo Domino D. Bonneto,[a] cui cum affectum tuum tam arthriticum, quam Nephriticum, corporisque ad tabem inclinationem exponerem, precibusque cum eo agerem, ut, quâ in re Medicâ pollet arte et industriâ, expertorum ac elegantium aliquot medicamentorum contra mala ejusmodi copiam nobis faceret; dicam quod res est, Nihil me ipso vidisse humanius, nihil candidius, neminem magis cupidum egregiorum tuique similium virorum commodis /fol. 68v/ inserviendi. Præbuit igitur liberali manu, quas jam ante sextiduum Hamburgum misi, inde Londinum [*sic*] ad Dominum Hartliebium quam primùm curandas, sex grandiusculas, duasque minores pixides. Quarum quidem postremæ medicamina interna, colore (alterum albo,[1] alterum flavo præditum est.) distincta, conti[ne]nt.[2] Album autem 30 vel 40, imo, si constitutio corporis illud ferat. 50. 60 vel 70 guttarum quantitate in haustulo cerevisiæ, contra affectum arthriticum vel Nephriticum (uterque autem ejusdem naturæ habetur) singulis diebus horis 5. vel 6. ante prandium recipiendum erit, donec quicquid hujus liquoris albi in vitro illo habetur consumptum sit. Postea ad flavum accedendum, cujus tamen usus ‹quotidie jejuno

But although God has chosen to place an illustrious mind in an uncomfortable body, I have no doubt but that by your strength of mind, further strengthened by divine grace, you will sustain your weak body. I consider it a great part of my duty to minister with the greatest care whatever cures and palliatives can be discovered. Therefore I congratulate myself, that I have been for some time on friendly terms with that most distinguished Dr Bonnet, so that I could explain to him the nature of your condition, as much arthritic as in the kidneys, and the inclination of your body towards wasting away, and beg him that he might use all his exceptional skill and industry in medicine, in order to make us a supply of tried and tested and subtle medicines against this sort of disease.[a] To tell the truth, I have seen nothing more humane or considerate, nobody more desirous of serving the comfort of distinguished men such as yourself, than he.

And so with great generosity he supplied six slightly larger, and two smaller, boxes, which a week ago I sent on to Hamburg and thence to London, to be cared for initially by Mr Hartlib. The latter of these contain medicines to be taken internally, and distinguished by colour (one white and the other yellow). The white medicine is to be taken in quantities of thirty or forty (or, indeed, if the body's constitution can bear it, fifty or sixty or seventy) drops, in a draught of beer, and acts against arthritic or kidney pains (for both have the same nature). It should be taken daily, five or six hours before dinner, until all the white liquid that that glass [bottle] contains is consumed. Then you should move on to the yellow

[a] Schlezer is referring to Andreas Nicolaus Bonnet, Paracelsian iatrochemist and physician to the Elector of Brandenburg, who corresponded with Digby and Moriaen. See *Ephemerides*, 1654 (HP 29/4/1A and 2B).

stomacho continuandus›[3] erit, instillatis absorptisque in haustu exiguo vini 30 guttis. Grandioribus pixidibus medicament[u]m[4] externum unum idemque includitur, partibus affectis in dolore art[hri]tico calefactum semel vel bis de die manu lenitèr illiniendum. Plura melioraque etiam contra Phtisin pollicetur, quam primum ea pa[r]ata habebit, modò Generositati Tuæ collibitum fuerit horunce medicamentorum effectus quâvis occasione ipsi notos facere. De diætâ, rebusque non naturalibus, quas Medici vocant, ut Generositatem Tuam, propriâ sollicitudine ductus, moneam, nihil attinet. Ad manum enim sunt, qui valetudinem tuam hâc in parte regere poterunt, nullusque dubito, quin cum Tiberio Cæsare videre illos soleas, qui trigesimum ætatis annum nacti, in iis quæ ad sanitatem tuendam faciunt, quaeque corpori utilia aut noxia sunt, aliorum consilio egeant.[a] DEUM saltem precor, ut salutaria Tibi esse velit medicamina illa, utque omnibus animi corporisque bonis florentem Te, inclytamque familiam Vestram quam diutissimè conservet, Illustris Generositatis Tuæ

Berolini. d. 14°. Martii. S.V. devotus
A°. 1655. J. F. Schlezer.

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medicine; this should be taken continually, each day, on an empty stomach, having been dropped in and absorbed in a small draught of wine, in the quantity of thirty drops.

The medicine in the larger boxes is all the same, for external use; heated, it should be gently rubbed onto places affected by arthritic pain, once or twice a day. He also promises more and better medicines against consumption; as soon as he has them ready, if only it would be pleasing to your Lordship to make the effects of these medicines known to him at some point. Nothing is useful in regard to diet and those things which are not natural as the physicians call them, which I (led by my concern for you) would suggest to your Lordship. For at hand are those that would be able to bring you to health, and I doubt not at all that you are wont to view alongside Tiberius Caesar those who, having obtained the thirtieth year of age in those things which they make for maintaining health – everything either useful or noxious to the body – still act by the counsel of others.[a]

At any rate I pray God, that these medicines may prove salutary to you, and may long preserve you and your noble family in every comfort of body and mind;

Berlin, 14 March your Lordship's humble servant,
1655, Old Style J. F. Schlezer

[a] This is a reference to Tiberius Caesar, Roman emperor AD 14–37.

[BOYLE] to [HARTLIB] 19 March 1656

From the extract in a scribal hand in HP 55/4/8A–8B.[a]
Not previously printed.

Ex Literis Domini Boyl:[b] 19. Martii. 1656.

The Helleboraster you mention, is a Plant, that I have had occasion to take notice of upon the score of its confuting an Observation of our Incomparable Friend Sir Francis Bacon,[c] I find it used to kill the wormes in Children, but tho to them it has bin observ'd to bee a somewhat churlish Medicine, yet I dare not deny but it may have the virtues, Your Friend ascribes to it, if it is to be us'd by men, & I remember, Paracelsus do's indeed much commend it, but I thought his praises had rather belong'd to the blacke Hellebore, then the Plant wee speake of.[d]

Idem

Rhubarb, may probably be very good, but will hardly I feare be practicable by you, that way of taking Rhubarb being one of the most distastfull wayes, that ever I met with, & tho I be pretty well accustom'd to unpleasing remedies, yet I confesse, I deserted the taking of Rhubarb in Substance, upon the score of its odiousness to the tast. And as for its efficacy against the stone, though I thinke it may bee usefull there, not only as the Kidney's are a part of the body, but because Rhubarb has the priviledge of a freer accesse to them, then other medicines, as appeares by the tincture it gives the urine, yet I should promise myselfe much more releife in that disease from specifickes, then from such generall Cathartickes, however, if it have any singular Virtue, I heartily wish it may bee to the utmost operative in You.

HARTLIB to BOYLE 25 March 1656

From the printed version in Birch (ed.), *Works* (1744), v, 266. Also printed in Birch (ed.), *Works* (1772), vi, 91–2. The opening of the letter is marked by Birch with a line of asterisks, indicating that it is truncated.

* * * * * But before I shut these, I purpose to send to him for his answer to your last letter, to inclose it in mine.[e] Mr. *Morian* writes again of *Glauber*, that he

[a] This extract appears among a group of copy letters on the use of rhubarb and related topics, HP 55/4/7A–8A, endorsed on 8B 'Stone'.

[b] 'From the letter of Mr Boyle'.

[c] Hartlib refers to Francis Bacon (1566–1626), Baron Verulam, statesman and natural philosopher. It is unclear where he made this observation.

[d] The identity of the friend to whom Boyle refers is unknown. For Paracelsus see above, p. 119n.

[e] It is not known which correspondent Hartlib is referring to here.

hath had a very dangerous fall from a waggon, spitting much blood, and if the fever prevail upon him, he fears his life; which I pray God may be yet continued, for giving many good hints, at least to the studiers of nature and arts.[a] For, *Deus varie colit hunc mundi hortum & velut per areolas*, as *Lipsius* speaketh.[b] Last Friday, the sad news was brought to my lord protector, of the death of that truly gracious, learned, and incomparable primate of *Ireland*, of whom, no doubt, you will hear more particulars from others.[c] In my last I sent a wrong letter for Mr. *Austin*, *A Monsieur Tugontloben*, which I desire may be returned; for the gentleman, I hear, is gone to the duke of *Holstein*, and I am to send this letter after him.[d] I shall count it true civility in him, if he shall acquaint me with the proceedings of *Coen* from thence, according to my instructions.[e] For hitherto I have been able to learn nothing, but that that chemical and experimenting man hath spent vast sums of monies out of the foresaid duke's purse, and that he hath brought nothing yet to perfection. But my son is greatly to blame for not writing to him so courteously as he is bound to do, according to that of the apostle's, 'in honour preferring one another, *&c &c*.'[f] The adjoined is the true letter to Mr. *Austin*, as doth appear by the superscription.[g] Sir *Richard Napier* can bear witness, how I waited two several days to have spoken with my lord protector, but could not. [h] That good and industrious soul will not be persuaded of our dulness and untowardness for peopling of *England* with fruit-trees.[i] Be pleased to let him know so much, and that Mr. *Batchelor* of *Eaton*, and Mr. *Langly* of *Pauls*, have promised to second our applications with all their might and interests.[j] When you are returned, God willing, you must needs make a visit also into Kent, to colonel *Blunt*'s several plantations, which will as much delight your observations. For I dare believe the well-grounded relations, that have been made unto me, from time to time, of all his choice oeconomical and georgical industries.[k] If we cannot help Dr. *Horne* with that true and excellent

[a] For Johannes Moriaen, see above, p. 66n., and for Johann Rudolph Glauber, see above, p. 114n.

[b] Hartlib refers to Justus Lipsius (1547–1606), Dutch humanist. 'God variously cultivates this garden of the world, and as it were in little plots'. It is not clear in which of his writings this passage occurs.

[c] Hartlib alludes to Oliver Cromwell (see above, p. 114n.) and to James Ussher, archbishop of Armagh, for whom, see above, p. 40n., who died on 21 Mar. 1656.

[d] This is possibly John Austin (1613–69), Catholic writer, who travelled in Europe; or, more likely, Ralph Austen, for whom see below, p. 293. For the Duke of Holstein, see *Works*, vol. 4, p. 383.

[e] For Johann Baptista Coen see above, p. 155.

[f] Hartlib presumably refers to his son-in-law, Clodius. Hartlib cites St Paul in Romans 12, 10.

[g] The attached letter for Austin is not extant.

[h] Hartlib refers to Sir Richard Napier (1607–76), physician.

[i] A reference to Hartlib's and Ralph Austen's project of general plantation of fruit trees in England. See Webster, *Great Instauration*, p. 478.

[j] Hartlib possibly refers to John Batchelor, Fellow of Eton 1647, perhaps the Puritan minister of Lewisham. John Langley (d. 1657) was the high master of St Paul's School in London.

[k] This is a reference to Thomas Blount or Blunt (1604–after 1668), F.R.S., parliamentary colonel and inventor, who lived at Charlton in Kent.

spirit of vitriol, for the present, yet I believe a good account of Sir *K. Digby*'s MS. at *Oxford* will be obliging in the mean while.[a] There is lately a very accurate and full catalogue made of all the MSS. in the several colleges of *Cambridge*, which I wish might be communicated in print; for I suppose there may be some chemical, physical, medicinal, and mechanical amongst them.[b] I am writing to Mr. *Brereton*, for the birch-water; for I remember he told us last year, that he could procure a great quantity of it out of *Cheshire*.[c] In my great paroxysm I used it very much, but found no benefit by it. Mr. *Schlezer* presents again his most humble service to you. He bids me to tell you, that he hath an excellent nephretical stone, which shall be at your devotion, when you please to call for it.[d] I thought to have mentioned something concerning a very considerable husbandry, last week imparted unto me, but I dare not weary your eyes or ears too long; subscribing myself ever,

SIR,
your entirely faithful
and most ready friend,
to serve you,
S. HARTLIB.

Charing-Cross,
March 25, 56.

BOYLE to RALPH BATHURST[e] 14 April 1656

From the version printed in Thomas Warton, *The Life and Literary Remains of Ralph Bathurst* (London, 1761), pp. 162–5.[f]

To my highly honoured Friend, Dr. RALPH BATHURST, &c.

SIR,

I had earlier acknowledged your late favours, if I had not been on the post day

[a] For Georg Hornius, see above, p. 162n. On Sir Kenelm Digby's manuscripts in the Bodleian see F. Madan and H. H. E. Craster, *A Summary Catalogue of Western Manuscripts in the Bodleian Library*, 8 vols (Oxford, 1922), ii, 69–70.

[b] This is likely to be a reference to Thomas Smith's 'catalogue of all the manuscripts in Cambridge', which was not printed and is no longer extant. See J. C. T. Oates, *Cambridge University Library. A History. From the beginnings to the Copyright Act of Queen Anne* (Cambridge, 1986), pp. 300–1, 487.

[c] For William Brereton, see above, p. 160n. After the end of the war Brereton received the chief forestership of Macclesfield forest, Cheshire.

[d] For Johann Friedrich Schlezer, see above, p. 177n. Nephretical stone was a remedy for kidney disease, particularly the calculus.

[e] Ralph Bathurst (1620–1704) divine, F.R.S. 1663.

[f] Warton states that the original of this letter was communicated to him by the Rev. Thomas Payne, Prebendary of Wells to whom Bathurst's papers had descended (*Ralph Bathurst, M.D.*, p. 164).

invited out of towne, to waite on Dr. Wilkins to see some rarityes, which detained us abroad long enough to reprieve you, that night, from the trouble you now receive. And this is the reason, Sir, why I have beene so slow in returning you the humble thankes I beseeche you to accept, for the welcome processe you were pleased to send me concerning roses, and the /p. 163/ obliging and florid letter wherein it came enclosed; and which sufficiently manifested, that you can write flowers, as skillfully as distill them.[a] The secresy that you command in reference to the receipt, its owne nature would have exacted from me: but as for the unwelcome orders you send me, concerning your excellent lectures, Dr. Wilkins has solemnly dispensed with my obeying them, and has undertaken to justify a proceeding, which is too favourable to my desires, to let me question the decision of so authenticke a casuist:[b] In whose dispensation I am more ready to acquiesce, because you yourselfe press to have those jewells sent backe to Oxford, – but, in case I intend not speedily to carry them to a place, where I have received too many civilityes, and too much satisfaction, not to have as eager desires of returning, as my tenderness of your patience will allow me.

When I have told you that I have taken physicke to day, I suppose you will not expect that I should entertaine you with the newes, /p. 164/ especially since that which is most the towne talke, concerning our friend Dr. W.W.W., has been publicke enough to have been proclaimed in the markett-place.[c] And therefore I thinke myselfe obliged in charity to you, to exempt you from the trouble of a tedious letter, from a person, who is like so suddenly, (God willing) to bring you the trouble of the visit of,

Sir,
Your most affectionate,
most obliged, and most
April 14. 1656. humble Servant,
St. James's. RO. BOYLE.

P.S. I see I need, and must therefore beg your pardon for this hasty blotted scribble; and I must withall beseech you, to name me, as I am, a most humble servant to Dr. Willis, Dr. Ward, and the rest of those excellent acquaintances of yours, that have been pleased to tolerate me in their company.[d]

[a] Bathurst's letter to Boyle is missing.

[b] Evidently Boyle refers to Bathurst's *De respiratione praelectiones tres* (published posthumously in Warton, *Ralph Bathurst*). For John Wilkins, see above, p. 114n.

[c] The abbreviation stands for Dr Wilkins, warden of Wadham College. Warton suggests that Boyle alludes to Dr Wilkins's marriage in 1656, which was contrary to the statutes of Wadham College, but for which he obtained a dispensation from Oliver Cromwell.

[d] This is a reference to Thomas Willis (1621–75), physician and professor of natural philosophy at Oxford, and to Seth Ward (1617–89), divine and natural philosopher, at this point Savilian professor of astronomy at Oxford.

MARY RICH to BOYLE [late 1656][a]

From the original in Boyle Letters 5, fols 185–6. 4°2. Text begins on fol. 186. Previously printed in Birch (ed.) *Works* (1744), v, 622 and Birch (ed.) *Works* (1772), vi, 622.

My Dearest Dearest Squire

when I heare from you it bringes me to great a Joy not to tell it, realy my deare Squire I must confes my Selfe to be guilety of so much Selfe love as to reade of your being pleased at oxforde with some regret, because I am so much my one frend as to deasire with great impatiancy the Satesfaction of Seeing you heare, the hopes of which I may with a great deale of trueth say was the greatest motife I could use to my Selfe to perswade me to be willing to leave the swet quiet of the Countery for the horred confusion of the toune, in which now my deare Sister Raneloughe and you are out of it I[1] have very littull /fol. 185v/ to please me in it, thoughe we are like to be very great for the lad Is like to be a souksesfull lover[.][b] my Lady Deavenshire is god be thankte like to recover[c] I envey the Countesse who will be so happy as to see you, and deasire when you are togeather you will wiesh with you

my Deare Squire
your afectenate humble
Sarvant
M Riche

mr Riche Is your Sarvant, and my Lady warwicke presentes her Sarves to you,[d] my sarves to my neafuse,[e] and pr[ay][2] tell dike Jones that thoughe I writ a lettar to him I neaver herde a word from him[f]

[a] This letter to Boyle from his sister Mary (for whom see above, p. 31n.), wife of Charles Rich, who succeeded as 4th Earl of Warwick in 1659, has been dated on the basis of the various clues available from the information given separately in the footnotes that follow. In addition, it is worth noting that Mary's reference to Boyle's pleasure at being in Oxford suggests a relatively early date after his arrival there in late 1655 or early 1656.

[b] The reference is evidently to Mary's nephew, Robert Rich, son of the 3rd Earl of Warwick, who died in 1658; he married Frances Cromwell in Nov. 1657.

[c] i.e., Elizabeth, Countess of Devonshire (1620–89); it is unclear whether 'the Countesse' is a reference to the same person.

[d] This is evidently the wife of the 2nd Earl; Mary's husband, Charles, is referred to as 'Mr Rich' as he had not yet inherited the title.

[e] i.e., Charles and Richard Boyle, sons of the 2nd Earl of Cork, who matriculated at Oxford on 25 Nov. 1656.

[f] i.e., Richard Jones (for whom see above, p. 75n.), son of Lady Ranelagh, who was at this time in Oxford, prior to leaving for his European tour in the spring of 1657.

For mr Roberte
Boyle my deare
Brother these

Seale: Oval. Broken in two. Antique head; not heraldic.
Endorsed by Wotton: 'Lady Warwicke' (also '2').

— 1657 —

Lost letters dating from 1657 are as follows:

Wotton's list (above, p. xxvii) includes the following items:

No. 13 'Mr. Clendon'. Possibly Thomas Clendon (d. 1677), Church of England minister, sequestered from his living of All Hallows Barking in London in 1643.

No. 16 'id. [i.e., Hartlib] paying £5 to a German for Mr Boyle'. Since this matter is not referred to in any extant letter, the reference must be to a lost one, possibly that noted below.

No. 358 'Lady Ranelagh', unless this refers to one of the letters with no year that we have placed on pp. 208–10 and 215–16 below.

No. 359 'Lord Cork'.

No. 360 'Lady Cork', unless either this or the previous entry refers to the letter with no year that we have placed on pp. 215–16 below.

Miles records the following letters (BP 36, fol. 161v):

'Smith Ben: of his Fars. Death & about private affairs'. This possibly should be Boyle Smith (d. c. 1662), whose father Sir Percy Smyth died in 1657. Sir Percy Smyth was the son of Boyle's sister Mary.

'Coxe T a Lr of thanks for recommending him at Oxon'. Boyle's correspondent here is evidently Thomas Coxe (1615–85), physician, incorporated at Oxford in 1646.

Letters from the second Earl of Cork to Boyle are recorded in the second Earl's diary (above, pp. xxvii–xxviii), dated 22 April, 12 June (enclosing 'Mrs Whitbys demands') and 27 October (with an enclosure from Mrs Whitby and 'Mr Vanderlure'). Mrs Whitby was presumably the wife of Marcus Whitby (see above, p. 185); the other figure could be John Vanderleure, an alderman of Cork in 1662; see *CPSI 1660–2*, p. 496. In addition, under 4 September there is a reference to a lost letter from Broghill to Boyle.

Lost letters referred to in surviving letters are as follows:

Boyle to Oldenburg, 11 April 1657 (below, p. 210).

Boyle to Clodius, 4 July 1657 (below, p. 223).

DOI: 10.4324/9781003253839-19

Boyle to Hartlib, 29 August 1657 (below, p. 229).

Boyle to Oldenburg, 2 September 1657 (below, p. 238).

Boyle to Hartlib, 5 September 1657 (below, p. 233).

Hartlib to Boyle of about 8 September 1657 (below, p. 232).

Boyle to John Nicholls, before 12 September 1657 (below p. 234).

Two letters from Boyle to Worsley, both prior to 14 October 1657 (below, p. 241).

Boyle to Hartlib, 28 December 1658 (below, p. 247).

LADY RANELAGH to BOYLE — 7 January [1657?][a]

From the original in BL 5, fols 19–20. 4°/2.
Previously printed in Birch (ed.), *Works* (1744), v, 556 and Birch (ed.), *Works* (1772), vi, 521.

My Brother

Yours which[1] inclosed one to my brother Corke & another to Capt Whiteby Came to my hands by the last post, those two I yesterday dispatched, & that which by the post before Came to me for Will: Sumers I endeavoured to have delivered to him with a like diligence, but his being out of towne kept me from effecting it, he is now returned & has it, but was faigne to come to me, to make him understand what you meant by the Counte.[b] I would gladly have gott the returne you desiered from him to have sent you by this dispatch but he says hee cannot get it, til the next & then it shalbe sent you, I hope the misfortune you are fallen under by the Ignorance or mistake of your lawyer, is noe new one, but if it bee I promise my selfe that god wil make you a greater gainer by those disapiyntments he orders you to meete with in your fortune than if you had received the intyre revenew thereoft, experience being a greater Treasure than mony, to those who are instructed to make a right use thereoft, & for your estate I should not wish it more unless I had seene that god had taught you to Imploy ‹it› soe, as to make it useful both to your selfe and others. but haveing seene that I durst trust you with It[2] if it were tenn times as much & Can't but think that as much as it is or honestly may

[a] This letter has been dated on the grounds that the 17th Earl of Kildare had succeeded to the title in Dec. 1656, and it seems likely that he is the earl referred to.

[b] Boyle's letter is not extant. Captain Whitby is evidently Marcus Whitby of Fermoy; see above, p. 185. This, and the fact that Boyle had enclosed with this a letter for the Earl of Cork, suggests that Lady Ranelagh was at this time in Dublin. Will Sumers is referred to with Marcus Whitby in an indenture recorded in the catalogue of Boyle's papers in the late 1650s in BP 36, fols 20–1; 'the Counte' has not been identified.

be made to be should rather be. yours than any /fol. 19v/ of your agents, Our young Earle of Kildare, I have perswaded into a sence of the fitnes of his haveing some person of Consciense knowledg & discreetion as also of civilty & good fashion to be with him as a Companion that might also doe him such services as a man ‹not› soe qualefied could not doe, & he is willing to give such a one £50 a yeere, his diet, lodging washing the use of a servant of his to doe necessary things about him. & a horse kept at his Charge for him to use upon his or his owne occasions, & desierous that you would give your self the trouble of Inquireing him out such a one which I bescheech you doe & take the assistance of honest Dr Cox herein, for whose & for his wives preservation from that Loathsome disease I desier to be truely thankful to him who was their preserver & who In them has preserved me two friends to whom I have binn very much obliged & am very really affectionate & soe I besheech you assure them from me & present unto them my unfayned service,[a] For Mr Waller I never heard one word from him since I left him but what you sayd in your last, & I know his calling as a Poet gives him lisence to[3] say as great things as he can without intending they should signiefie any more than that he said them, or have any higher end than to make him admired by those /fol. 20/ whose admirations are soe volatile as to be raysed by a sound of words, & the less the subject he speakes of or the partty hee speakes to deserves the great things he says the greater those things are, & ‹the› greater advance they are to make towards his being admired, by his Poetical laws.[b] therefore if he would be but as litle proud of saying great things to me, as I hope I shalbe in heareing them from him he would I am apt to think scape some guilt that now his fine sayings lays him under, & I Could never give my selfe a reason why he who can say such things upon things that soe litle deserved them should be soe unwilling to applye that faculty to those subjects that were truely excellent, but this. that there his subject would have binn debased by his highest expressions, & he[4] humbled in the exersise of is wit, but where he has Imployed it. his subjects have binn raysed by his fancy and him‹selfe›[5] by reflecting upon it, I shal therefore returne his great proffesions with a playne hartty wish, that he may Partake in guifts more excelent than his wit, & Imploy that for the time to Come upon subjects more excelent than hetherto he has donn, & without Complement I should gladly be serviceable to him or his wife to whom I am a servant upon a /fol. 21/ much better accoumpts than hee hetherto makes it possible for me to be to him.[c] I shal onely mind you that our young Earle needs one that may know how a litle to governe & direct without leting him see he

[a] Lady Ranelagh refers to Thomas Coxe (for whom see above, p. 207), for a lost letter from whom see above, p. 207; see also *Works*, vol. 3, p. 390; and vol. 13, p. 243. Coxe's wife has not been traced. The 'preserver' alluded to is possibly Boyle himself.

[b] The reference is to the poet Edmund Waller (1606–87), who had published laudatory verses of Cromwell in 1655.

[c] Waller's second wife was Mary Bracey.

intends to doe soe, & as soone as you Can find such a one I besheech you give notice thereoft to me, that order may be taken for his Comeing over by

This 7th January Your K R

For my Deare Brother
Mr Robert Boyle neere
the stable yards at st
Jeamses London

Seal. Oval. Estoil within two interlaced triangles (or stars of David), broken in two pieces, one obscured by paper.
Endorsed by Wotton: 'Lady Ranelagh. Character of Waller the Poet Jan. 7'. Also, a deleted note by Miles: 'this Letter must be about', and the number '(1)'. The MS contains printers' marks.

HENRY OLDENBURG to BOYLE 15 April 1657

From the original in Early Letters OB 1. 4°/2.
Previously printed in Birch (ed.), *Works* (1744), v, 299, Birch (ed.), *Works* (1772), vi, 140, and *Oldenburg*, i, 117–19.

Sir,

Though I am much obliged to you for the favour of your speedy dispatch hither of what came to your hands from Ireland, yet am I litle beholding, I think, to the Post, which hath been crawling rather, than posting; yours, being dated the 11th, which was Saturday, not coming to me, till this Wednesday night, whereas, if it had not stuck somewhere, it might very well have been here on Munday.[a] But my thanks to you, Sir, are not a whit the lesse for that, and other testimonies of your goodnes and affection towards me, which I can give no retribution for, unles you will please to accept of my reall esteem of your deserts, and make use of my readines to serve you with what my litle power can compasse.

The non-resolution of the busines written about by My Lady Ranalaugh, though it be somewhat uneasy to me, because I cannot well delight to be in a place, where people think me to stand in their way; yet doe I purpose, if God will, to differre our remove, till I receave one letter more from Ireland, and if that bring

[a] This letter is not extant.

no resolution with it, after a whole winters debate, I must, I think, take the liberty of chusing another place, where yet I shall have /1 (1)v/ care, that your nephew may not more ‹loose› his time, than he doth now here.[a] Only his and my losse will then be, Sir, our absence from you, which I reckon a very great one, and should never chuse, if the forementioned consideration did not compell me to't. Yet, before we part to a greater distance, it would trouble me exceedingly, if I should misse the advantage of conferring with you, Sir, about some things, which are concernfull to your Nephew and me. Wherefore, least we should fall at one and the same time upon a crosse Journy to and from Oxford, I beseech you, you would give yourself so much trouble, as to acquaint me by a line or two with the time of your setting out again for Oxford, till the reception of which news he is very unwilling to stirre, that is cordially

Sir,

Mr Jones is your most humble servant.
Oxford the 15th April
1657

Your obliged and very humble
servant,
Henry Oldenburg

To my noble friend
Robert Boyle Esq at
his lodgings at St Jameses
At Mrs Tooby's next door to
the Stableyard
London 4d
4d

Seal: Remnants of broken seal.
Endorsed on 1 (1) at head of page by Wotton: 'Mr Oldenburgh the Tutor to Lord Ranelagh at Oxon. Apr. 15. 1657'. Birch: 'No 1' on 1 (2)v. Also with Miles's crayon number: 'No. 1' and ink number 'No. 1'. The manuscript has printer's marks.

[a] Oldenburg (for whom see below, pp. 509–10) refers to negotiations between himself and Boyle's sister Lady Ranelagh on the matter of his departure for the continent with her son, Richard Jones (for whom see above, p. 75n.). Evidently discussions had continued through the winter, with Boyle as mediator, without reaching a conclusion. In fact Oldenburg and Jones set out for Europe early in May.

JOHN EVELYN[a] to BOYLE 9 May 1657

From the holograph original in the British Library, Add. MS 4229, fols 52–3. 4°/2. Collated with the copy in Evelyn's Letterbook, British Library, Evelyn Papers, JE A, no. 111, and significant differences noted.
Previously printed in Birch (ed.), *Works* (1744), v, 397. Also printed in Birch (ed.), *Works* (1772) vi, 287–8, and from there, in J. Forster (ed.), *Diary and Correspondence of John Evelyn*, 4 vols (London, 1852), iii, 92–3.

Says-Court:
9: May: 1657.

Noble Sir,

I should infinitely blush at the slownesse of this Addresse, if a great indisposition of body, which obliged me to a Course of Physick, and sinc, an unexpected journey (from both which I am but lately delivered) had not immediatly intervened, sinc you were pleased to command these Trifles of me. I have omitted those of Brasse &c: because they properly belongue to Etching, & ingraving, which Treatise, with[1] five other (viz: paynting in Oyle,‹in› Minuature, Anealing in Glasse, Enamiling & Marble paper) I was once minded to publish (as Specimen of what might be farther don in the rest)[2] for the benefit of the Ingenious.[b] But I have sinc bin put off from that designe; not knowing whither I should doe well to gratifie so barbarous an Age (as I feare is approaching) with curiosities of that Nature, delivered with so much integrity as I intended them: and, least by it, I should also[3] dissoblige some, who make those professions their living; or at least, debase much of their esteeme, by prostituting them to the Vulgar. Rather, I conceived, that a true, and ingenuous discovery of those, and the like Arts, would, to better purpose, be compiled for the Use of that Mathematico-Chymico-Mechanical-Schoole designed by our noble friend Dr Wilkinson;[c] where they might (not without an Oath of seacresy)[4] be taught to those that either affected, or desired any of them; and from thenc (as from another Salomons house), so much of them[5] made publique as should, from tyme to tyme, be judged convenient by the Superintendent of that Schoole, for the reputation of Learning, and benefit of the Nation.[d] And upon this score there would be a most willing contribution of what ingenious per-

[a] John Evelyn (1620–1707), diarist and virtuoso.

[b] Evelyn evidently refers to his collections for the 'History of Trades'. He did eventually publish his material relating to engraving and etching as *Sculptura, or the History and Art of Chalcography and Engraving in Copper* (1662). See Michael Hunter, *Science and the Shape of Orthodoxy. Intellectual Change in Late Seventeenth-Century Britain* (Woodbridge, 1995), p. 74ff.

[c] Evidently a slip of the pen for Wilkins. It is unclear whether Evelyn knew about the 'experimental school' to which John Wilkins (for whom see above, p. 144n.) contributed £200 in 1653, or whether he is simply referring to Wadham College. See Hunter, *Science and the Shape of Orthodoxy*, p. 68, notes 82–3.

[d] For Solomon's House, based on Bacon's model in the *New Atlantis*, see above, p. 179n.

sons know of this kind; and, to which I should most freely dedicat what I have. In the meane tyme, Sir, I transmitt you this Vernish,[a] and ‹shall› esteeme my selfe extreamely honoured, that you will farther Command whatsoever else of this, or any other kind[6] is in the powre of,

Sir,
your most humble, & most obedient Servant
J Evelyn.

I beceech you Sir, to make my most humble Service acceptable to Dr Wilkinson;[b] and that you be pleased to communicat to me, what successe you have, in the processe of this Receipt (my selfe not having had tyme to examine it) that in case of any difficulty, I may have recourse to the person from whom I receivd it.[7]

For my most honoured
friend Mr Boile
I desire Mr Martine, at the Bell in St Paules Church-yard to send this Letter to
Oxon:

Seal: Oval, bottom half only intact. Same as that on Evelyn to Boyle, 13 April 1659.
Endorsed at head by Wotton: 'Mr Evelyn' and by Miles in red crayon 'N. 1'. On fol. 53v 'Mr Evelyn No. 1' in Birch's hand and in pencil in a nineteenth-century hand 'Printed in Boyle's *Works*, v, 397'.

BOYLE to EVELYN — 23 May 1657

From the scribal version signed by Boyle in the hands of John Wilson, autograph dealer, July 1992. 4°/2.
Not previously printed.

Sir,

I should not have so long restrain'd the just Resentments I had of your late Favours, had I not been daily in Expectation to be able to snatch some time from

[a] This could be the recipe now in BP 26, fol. 141, but is probably not. It is possibly the one supplied to Thomas Henshaw. See Hunter, *Science and the Shape of Orthodoxy* (above, p. 212), p. 81.
[b] See above.

my Occasions to pay you my Acknowledgements at your own House: But now the Uncertainty of some Affaires that detain me here, beginning to make me feare least my silence might be imputed to a wrong Cause. I think myself engag'd to delay no longer to returne you my humble Thanks for the favour of your obliegeing Letter & to assure you that tho' the Excellency of what you write cannot but make me thinke Your silence an unhappines, yet I was lesse troubled at your not writeing, than to find your Indisposition has been the cause of it, For it cannot but be unwellcome News to a Person addicted to experimentall Learning, to be inform'd that soe great a Master in it & Patron of it as Mr Evelyn is hinder'd by the Unkindneses of Nature to prosecute his skillfull[1] Enquiries into the secrets of it;[a] But as your Indispositions may well passe for the general Calamitys of the Commonwealth of Learning, soe I hope you will make the returne of your Health an universal Advantage to it, by imparting (at least to Natures Votaries) those curious & useful Arts with whose knowledge you had design'd to obliege & enrich them, For though /fol. 1v/ You but too justly complain, that the Age & Country we live in, doe not value reall Learning as highly as it merits, yet I confesse I am apt to thinke that the surest & most obligeing way to make Men value it, is to lett them see by it's reall & usefull Productions how vast a Disparity there is betwixt experimentall & notionall Learning, which makes me become an earnest suitor to you, that you will be pleas'd to vouchsafe, at least to some Friends to Philosophie & to Mr Evelyn a sight of those very desirable Particulars which you mention in Your Letter & I despaire not when I shall next have the Happines to exchange a few Words with you, but that some Expedient may be found to reconcile the disclosure of many secrets, with the keeping up & secureing the Reputation of Learning, In the meane time I must returne You my merited Thanks for the Receipt of the Vernish, which though I doe not yet thoroughly Apprehend (by reason of Your Friends obscurity in some Expressions) I am indeavouring by tryall to understand better,[b] & to the Acknowledgements I must add others as due as they, for the wellcome Favour you were pleas'd to doe me in allowing me to obey Your Command, by presenting you the way of preserving some sorts of Flowers which I enclose verbatim as I found it in a Paper wherein I set it down for my own Remembrance[c] /fol. 2/ And as for your other Commands concerning Dr Wilkins I have lately had an Opportunity to obey them, & find[2] him as I expected very sensible of your Civility's to him, & soe much your servant, that he is almost as much soe, as he that is most Ambitious to deserve the Title of[d]

[a] Presumably Boyle refers to Evelyn's letter of 9 May.
[b] For the varnish sent by Evelyn to Boyle see above, p. 213.
[c] This recipe does not appear to survive.
[d] For John Wilkins see above, p. 144n.

Sir
Your most affectionate
most oblieged & most humble
May 23th servant
1657 Ro: Boyle

I beg the favour of haveing my most humble service presented to you most excellent Lady[3a]

Endorsed at head of letter [by Upcott?] 'The Philosopher Boyle to Mr Evelyn' and on fol. 2v: 'Mr Robert Boyle to Mr Evelyn, 1657'.

LADY RANELAGH to BOYLE — 3 June [1657][b]

From the original in BL 5, fols 27–8. 4°/2.
Previously printed in Birch (ed.), *Works* (1744), v, 557, and Birch (ed.), *Works* (1772), vi, 522–3.

My Brother

This inclosed my brother Corke sends me word Contains an accoumpt of what he has donn in your affayres, to which he says a speedy answere from you will be necessary to enable him to proceed therein to your advatage [*sic*], a list of your Connaught lands I received from him with this & not before, I have already sent 2 of them to the two persons he & I have ingaged to try what rents they may be Raysed too & when I receive their accoumpts I shal god wiling hasten them to him that he may persue what wil most tend to your benifit, whose wearynes of a place & Company that instead of helping you to Improve your time does in spite of your teeth steale it from you[c] I wonder not at, nor doe I think there is any thing we are more Concerned not to Consent to then the parting with that Treasure unless it be

[a] Evelyn's wife was Mary Evelyn (1635–1709).

[b] Charles Webster argued that this letter was 'probably composed in June 1647' (Webster, 'New Light on the Invisible College' (above, p. 42), p. 21n.). But the reference to 'two lady Bristols' suggests that it was written in the widowhood of Beatrice Digby, Countess of Bristol, whose husband, John Digby, 1st Earl of Bristol died on 21 Jan. 1653. As his heir was already married there were two Lady Bristols until Beatrice's death on 12 Sept. 1658. The reference in the postscript to Broghill's membership of 'that Comite where the act is like to pass', suggests that this letter dates from 1657: the first session of the second Protectorate Parliament lasted from 17 Sept. 1656 to 26 June 1657 and Broghill was a member of the committee for Irish affairs in that Parliament.

[c] For Boyle's lands in Connaught, see above, p. 29n.

towards the acquireing or performeing some of those things in order to which it was given us, since al other talents must be Improved whilst we are here. by the help of that & when our measure of that is spent, our worke ends /fol. 27v/ & we must begin to receive those recompences that we shalbe receiveing for ever, & which wil be Suteable to what we have donn with & in our time, The other being from one of your owne fraternety, who thinks[1] himselfe in the highest Class of your Philosophicall Society wil I presume without my Solicitation be afforded a speedy returne[a] I therefore onely beg that may Come thorough my hands open as this does, & for gratetude for that favour I shal solicite a replye, if this find you in the west let be [*sic*] besheech you to present my humble Service to my two lady Bristols.[b] & wish you would disapoynt Frank by bringing a wife of your owne to Stalbridge a bussynes I must Stil mind you off though you give me Cause to doubt you wil as hardly pardon me those few words as the rest of the trouble given you here by[c]

Your K. R.

If this find you at London let it a litle Cal upon you to be Mr Worley's [*sic*] advocate to Broghil who is of that Comite where the act is like to pass that if not prevented wil put him out of his place.[d] This 3d of June /fol. 28/

Some Single Piony rootes I beg may be Sent me fit to plant, here, if you Can without to much trouble get any

Endorsed on fol. 28v by Miles: 'Lady Ranelagh numberd' with Miles's crayon number 'No. 1' deleted and ink number '(2)'.

[a] Probably a reference to the group of experimental philosophers at Oxford of which Boyle formed part.

[b] Presumably Lady Ranelagh refers to Beatrice, Lady Digby, wife of the 1st Earl of Bristol, for whom see above, p. 106n., and her daughter-in-law Lady Anne Digby (for whom see above, p. 185), wife of the 2nd Earl of Bristol.

[c] Presumably this is not Francis Boyle, but Lady Ranelagh's daughter Frances Jones, for whom see above, p. 75n.

[d] Broghill was among those appointed to the committee for Irish affairs of the Second Protectorate Parliament on 23 Sept. 1656. The Act in question may be 'An Act for the Assuring, Confirming, and Settling of Lands and Estates in Ireland', 9 June 1657. Although it does not mention Worsley specifically, it gave the Lord Deputy (Henry Cromwell) and Council of Ireland the power to re-survey forfeited or exchanged lands. Worsley was officially Surveyor-General of Ireland but he was out of favour with Henry Cromwell and most of the work of surveying was done by William Petty. Worsley lost the surveyorship in the following year. *Commons Journal*, vii, 427; Firth and Rait, *Acts and Ordinances*, ii, 1100–10; Barnard, *Cromwellian Ireland* (above, p. 152).

OLDENBURG to BOYLE 24 June/4 July 1657

From the copy in R.S. MS 1, fols 21v–2.
Previously printed in *Oldenburg*, i, 119–21.

De Saumur le 4
de juillet 1657[a]

A Monsieur Boyle

Ayant ‹asteure›[b] estably nostre domicile pour quelque temps icy ‹et reglé nos petites[1] affaires› tout aussitost que ‹je trouvois› ‹la *maniere*[2] vacation› je pensois de ne ‹la› pouvoir ‹pas›[3] mieux employer, que de vous advertir d'abord, que nous nous trouvans[4]‹grandement› en peine pendant que sommes destitués de l'information de vostre santé,[5] dont l'incertitude de nostre sejour, depuis que nous sommes hors d'Angleterre, nous a[6] jusques icy entierement privé. L'ayant asteur plus fixe nous nous flattons de l'esperance, de[7] Jouir de vos nouvelles aussi frequemment, que vos meilleures et plus utiles occupations le permettrant.[8] Je l'advouë, Monsieur, que ‹plustost que de vous solliciter à me faire ceste faveur lá›, je devrois[9] vous laisser travailler à l'immortalité de vostre propre gloire, et au bien, que le genre humain tirera des[10] labeurs, dont vous vous entretenez si ‹heureusement›;[11] mais l'‹extreme› passion, que j'ay pour ‹la›[12] prosperité de vostre personne et travail m'emporté ‹à vous faire cette requeste›[13] ‹de vouloir› interrompre quelquefois vos[14] plus serieuses meditations, et me faire part de ce qui se passe chez vous et en vostre laboratoire. Il y a grand bruit icy touchant une victoire, que la flotte Angloise ait gaignée sur les Espagnols dans le havre mesme des isles de Canarie: quoyques

Saumur[a] 4
July 1657 [N.S.]

To Mr Boyle

Since we have now[b] fixed our abode here for some time and arranged our little matters of business, I thought as soon as I gained a brief respite that I could not better employ my time than by first advising you that we are greatly troubled so long as we lack news of your health; of this the uncertainty of our residence since we left England has until now entirely deprived us. Now that we are more settled we flatter ourselves with the hope of rejoicing in your news as often as your better and more useful occupations will allow. I confess, Sir, that rather than solicit this favour from you I ought to permit you to secure immortality for your own glory and those benefits that humanity will draw from your labours, which you pursue so successfully. But the extraordinary desire that I have for the well-being of your person and your work leads me to make this request, that you will sometimes break in upon your more serious reflections in order to let me know how things are with you and in your laboratory. There is a strong rumour here of a victory that the English fleet has

[a] A town on the Loire below Tours.
[b] i.e., 'A cette heure'.

quelques uns par mocquerie disent, que les Anglois ont pris /fol. 22/ plaisir de deschirer la bourse, apres que l'argent en estoit dehors.[15a] Sil est vray, ce que les gens affectionnées[16] à vostre Estat rapportent, ‹on pourroit dire,›[17] ce me semble, que le continuel bon succes du Protecteur parle hautement, que le Ciel veut faire quelque chose d'extraordinaire de luy.[b] Nostre grand et bon Dieu vueille, que ce soit[18] pour l'eslargissement de sa gloire et verité, et le soulagement des peuples gemissans soubs[19] la tyrannie de corps et ‹de› conscience. Il n'y a rien icy, qui soit digne de vostre conoissance,[20] si ce n'est, que l'air est bon, le pais beau, et le peuple humain et debonnaire: Et si ces qualites ‹avoient le›[21] pouvoir de vous tirer ‹à› ce quartier icy, nous vous recevrions à bras ouverts, et particulierement

Monsieur
Vostre tres humble et
fidelle serviteur
H. O.

---

gained over the Spanish within the harbour at the Canary Isles; although some for scorn say that the English have been pleased to rip up the purse after the money was put away.[a] If this is true, as those who favour your nation declare, one might say (it seems to me) that the continued success of the Protector is an evident sign that Heaven has some extraordinary task for him.[b] May our great and good God purpose that this be for the extension of His glory and truth and the relief of those peoples who groan under physical and spiritual tyranny. There is nothing here worth your notice, unless it be that the air is good, the countryside beautiful, and the people kind and gay. If these attributes had the power to attract you to this region we should receive you with open arms, and especially,

Sir,
Your most humble and
faithful servant,
H. O.

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[a] After the English had attacked the Spanish plate fleet in Sept. 1656, they moved on to the Canaries, where they attacked and destroyed a Spanish fleet in the harbour of Santa Cruz de Tenerife on 20 Apr. 1657.

[b] The reference is to Oliver Cromwell, Lord Protector from 1653.

ELIZABETH BOYLE, COUNTESS OF CORK,[a] to BOYLE 26 June [c. 1657][b]

From the original in BL 2, fols 48–9. 4°/2.
Previously printed in Birch (ed.), *Works* (1744) v, 623, and Birch (ed.), *Works* (1772), vi, 623.

Lismore June
the 26th

My Deare Brother

thoe I confesse I have bin a great while silent I shall nott feare you will conclude me faulty butt rather civell in that forbearan[ce] since all that was necessary or worthy your knowledge I know you rec[eived][1] weekly by better hands from this place, to trouble you than, to answer my insignificant letters: I doubted wold be a burthen your civilitye wold[2] impose upon your self & this has bin hitherto the true ground of my silence what is now the present motive[3] of my writing is to begg your oppinion of your nephewes passing their times & whether they improve them to their most advantage,[4] where, in the 1st, place tis most necessarye they be well grounded in pietye which is the cheefe Bulwark to preserve them from those temptations their age condition &[5] conversation (too generall in the world) is likely to assault them with all especially in their travells to which my Lord ere long designes them, & therfore I humbly begg you wold make choyce of some good[6] Bookes & reccomend them to their perusalls & to the Drs[?] to supervise & cleare /fol. 48v/ what may seeme obscure to them in that studdye; to which all their other studdyes ought to strike sayle & to that cheefly intend in order to which I know nothing more probable[7] to perswade them than your good precepts seconded with your example & practise this ‹shall› be[8] the cheefe intent of this letter:[c] though[9] I could much inlarge ‹it› with resentments of my neere approaching unhappinesse in parting with[10] my Dearest Sister did I nott consider that this deprivation restores to you a happinesse I must nott grudge you, butt studdye rather ‹the meanes› to hasten over to be a sharer in your mutuall satisfactions till when my complaints must keep[11] home & I shall only ‹heer› trouble you with the insignificant yett very sincere & hartye professions of my ever remaining[d]

Deare Brother your most affec:
faithfull & obliged servant
E Corke

[a] For the Countess of Cork see above, p. 111.

[b] This letter has been dated on the basis of the fact that the Countess's two sons had matriculated at Christ Church Oxford on 25 Nov. 1656.

[c] Boyle's nephews, the sons of the Earl and Countess of Cork, were Charles Boyle, Viscount Dungarvan (1639–94) and Richard Boyle (1641–65).

[d] The Countess refers to Lady Ranelagh.

[12]I begg you to present my service to Dr: Willis when you see him[a]

For Mr Robert Boyle
my Deare Brother / these at
Oxford

Seal: Circular. Out of a ducal coronet a *wyvern* surmounted by an earls coronet. Endorsed by Wotton under date on fol. 48: 'Lady Corke'.

HARTLIB to BOYLE 30 June 1657

From the printed version in Birch (ed.), *Works* (1744), v, 266–7. Also printed in Birch (ed.), *Works* (1772), vi, 92–3.

Honoured SIR,

YESTERDAY I received your last, signifying your return to *Oxford*.[b] I pray God, that your health may be continued and encreased, that it may be instrumental for the good and refreshment of many.[c] I am still extremely full of pains, and have much ado either to write or to do anything else.[d] But if the Lord would discover the like powerful /p. 267/ remedy against the inward piles, as he has done against the stone in the kidneys by a new medicine of my son *Clod* (which he is resolved not easily to impart, and always to disguise under some other name,) I suppose I should draw near to a perfect cure.[e] Above all recipes and medicines Dr. *Glisson* has commended to my son that of the lieutenant of the *Tower* against the piles.[f] I expect my son every day, and if the aforesaid doctor has had any of those suppositories in readiness, I hope he will bring some of them along with him. In the time I need not tell you, that the most learned famous English Æsculapius (I mean Dr. *Harvey*) is departed this world.[g] I expect your censures, observations, and communications, upon my former letters. Here you have a vindication of the decaying clover-grass,

[a] For Thomas Willis see above, p. 204n.

[b] This letter is not extant.

[c] On Boyle's health, see above, pp. 198–200.

[d] On Hartlib's ill health see Turnbull, *H. D. & C.*, p. 21.

[e] Hartlib refers to his son-in-law, Frederick Clodius.

[f] This is a reference to Francis Glisson (1597–1677), physician and natural philosopher. The Lieutenant of the Tower at this time was John Barkstead (d. 1662), Cromwellian officer and regicide.

[g] William Harvey, likened by Hartlib to the Greco-Roman god of medicine, died on 3 June 1657.

written and sent unto me by Mr. *Wood* from *Dublin*.[a] If you could furnish me, I would say it were very fit, that some directions were published concerning clover-grass, as proper to take off the prejudice that is of late against it, and to inform punctually, in what soil it is an improvement, and in what manner it is to be used.

AS first, It may be laid down at a certainty, how deep the root descendeth; where it proves best, and where it is indifferent, and where it faileth to be an improvement, for want of due depth.

SECONDLY, How it proves in a stiff clay land, or wheat land; how in a hot sandy rye land; how in a very stony land; and how in a chalky land, *&c*. and in which kind of soil it lasteth longest.

THIRDLY, It may be laid down, what best use may be made of the ground, when the clover decays.

FOURTHLY, It should be carefully advertised, how it is to be used; for sometimes it hath been seen good, and yet come to nothing, by many kinds of miscarriages.

IF the cattle bite it the first year, some therefore will destroy, and some they will pull up by the root; and sometimes, the second year, it will be rooted up, especially after moist weather, and after a long drought; if it be bitten, it will die; and if it be mowed in unsettled weather, it will soon be tainted; if it be suffered to be too far seeded, before it be mowed, it will be like hard sticks, too coarse for most kind of cattle. We want clear directions, how we may follow the custom of *Flanders*, to decline all these inconveniencies. I long to see what has occurred to you in your journey.[b] To me, of late, out of *France*, have occurred these following lines.

'In passing by *Tours*, and hearing there of certain strange engines, by which they water the tabbies and mohairs, we went to see them, and found it an excellent invention, brought out of *Italy*, from *Luca*, by the father of him, that hath at present the chief workmanship thereof, named, monsieur *Chauma*.[c] I wonder the engine is no more taken notice of, nor the use thereof brought into *England*; which certainly might easily be done, by such as are skilled in mechanicks.' Thus far a travelling friend.[d] I shall tell this Dr. *Kuffler* (whom I have not seen these fourteen days) of your intimations to tell strange stories of the benefit to be made by the watering of land.[e] I suppose you remember the great expectations I have of the

[a] This is a reference to Robert Wood (c. 1622–85), F.R.S., mathematician and astronomer, and Accountant General for Ireland. See Webster, *Great Instauration*, pp. 227–8, 240.

[b] It is not clear whether Hartlib is referring to a journey of Boyle's, or whether this is part of the letter he is quoting. If the former, nothing is known of the journey taken by Boyle to which Hartlib alludes here.

[c] *Luca*, i.e., Lucca in Tuscany. Monsieur Chaumes was an inventor, mentioned in HP 33/1/25A–26B.

[d] The author of this letter is possibly Henry Oldenburg, who in May 1657 had gone to France as tutor of Richard Jones, Boyle's nephew.

[e] Hartlib refers to Johannes Sibertus Küffler (1595–1677), inventor, who married Catherina, daughter of Cornelis Drebbel. He was responsible for showing the Commonwealth government a weapon to sink ships.

Quaker of *Durham*, *Anthony Pierson*, his promises of husbandry.[a] I have not yet obtained any thing from his hands; but major general *Lilburne* pretends to know his Universal Compost; and a friend of his was pleased to entrust me with it, in these words.[b] 'Plough up your barren ground, and cross-plough it, as they use to do those lands, which they burn for bate or betting. Then gather the turfs, and lay the first course of turfs (*e.g.* of two yards square, the grassy or heathy side upwards) and sprinkle upon it a small quantity of unslacked lime. Then lay the second course (less than the first) with the green side downwards, upon the lime; and so build up your heap. Let it lye half a year thus. If you will sow winter corn (as wheat or rye) upon it, let it lye from spring to seed-time. If you sow barley, *&c.* let it lye from autumn to seed-time. The best time to turn it up is, when it is most moist; for that will make the lime run and burn the better. A greater quantity of lime, or laid in any other manner on the land, burns out the vegetable salt, and spoils it, as is experienced in the West by colonel *Monck*.[c] When it hath lain half a year thus, it will be so mellow, that it will run like ashes. Then spread, harrow, and sow it. If it want depth of earth, upon the harrowing, to cover the seed, plough it again.' Thus I have discovered unto you, that magnet of husbandry, without any reserves; for I am very ambitious to shew myself, upon all occasions,

Honoured Sir,
your most humble and
ever faithful servant,
S. HARTLIB.

Charing-Cross, June
30, 1657.

CLODIUS to BOYLE — 7 July 1657

From the holograph original in BL 2, fols 18–19. 4°/2.
Not previously printed.

[a] Anthony Pearson (1628–70) was the author of *The Great Case of Tythes* (1657).

[b] Robert Lilburne (1613–65), parliamentary officer and regicide. Lilburne's friend, mentioned here, has not been identified. The letter from Lilburne is in HP 26/70/1A–2B.

[c] This is a reference to George Monck (1608–70), later 1st Duke of Albemarle. He had been in command of the army in Scotland and head of the administration there since 1654. He inherited an estate in Devon in 1647 and it is highly probable that he acquired land in Connacht, and perhaps also Ulster and Leinster during the Interregnum. See Maurice Ashley, *General Monck* (London, 1977), pp. 71–2.

Vir Nobilissime Amice singulariter venerande,

Nisi tuæ 4to hujus Mensis scriptæ, hodie[1] mihi traditæ fuissent, adhuc inscius essem, qua[2] ubinam locorum degeres, vel potius, an adhuc inter vivos esses.[a] Jam itaque[3] cum sciam quænam te habeat terra,[4] quod nondum à vivis discesseris, sæpius, ut[5] abeunti promisi, ad te literas dabo. Antepilepticum tibi nuper communicatum scire aveo, In cujus permutationem te docebo, quod Glissonius me ante octiduum[b] colcestriæ[c] docuit. Sumit secundinam masculi primogeniti, illamque rectà, absque lotione, vel abstersione exsiccat, in clibano, post panis extractionem. Exsiccatum in tenuem pulverem redigit, eique vinum Rheninum in vitro superfundit, ut fiat tenuissimum pultis instaru ‹mixtura›.[6] hujus cochlearia duo (ubi scilicet vitrum probe concusserit) quovis mane propinat,[7] sanatque quosvis epilepticos, etiam inveteratos, certissimè. /fol. 18v/

Nuperrime literas Hamburgo accepi, in quibus amicus meus, (à quo olim spiritus tartari mihi communicatus)[d] plurima notatii dignissima promittit.[e] Inter reliqua, confectionem vitrioli ex Antimonio absque corrosivo facti, cum sapphiro

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Most noble Sir, and my most particularly respected friend,

Had I not received your letter of the fourth of this month, which was given to me today, I would still be ignorant of the place of your abode, or rather, of whether you were still among the living.[a] And now, when I know what land lies under your feet, and that you have not yet departed from the living, I shall be enabled to send you more frequent letters, as I, on your departure, promised that I would do.

I am keen to learn the details of a remedy for epilepsy of which you have recently been informed, in exchange for which I shall inform you of the things which Glisson imparted to me a week[b] ago at Colchester.[c]

He takes the afterbirth of a firstborn male child, and straight away (and without washing or cleansing it) he dries it out completely in an oven, which should be as hot as it is directly after the bread is taken out of it. When it has been dried, he grinds it into a fine powder, and he then pours Rhine wine over it in a glass vessel so as to make a very thin pap, like a mixture. Of this mixture he drinks two spoonfuls (after the spoons have thoroughly stirred the contents of the glass) every morning; and it most surely cures epileptics, even inveterate ones.

I have very recently received a letter from Hamburg in which my friend there (who once informed me about spirit of tartar)[d] sends me many further pieces of information that are worthy of particular note.[e] Among other things, he tells me of a method of producing vitriol from antimony, and this made without corrosives, and with a colour that rivals that of

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[a] This letter has not been found.

[b] The Latin reads literally as 'eight days'.

[c] i.e., the town of Colchester. For Francis Glisson see above, p. 215n.

[d] See above, pp. 195–7.

[e] It is clear from a letter from Hartlib to Boyle (1 Sept. 1657) that this friend in Hamburg is Dr Walter, a physician and chemist, who corresponded with Clodius and Moriaen. Clodius's letter to Boyle of 3 Mar. 1656 is an extract from a 'German letter', which may also be from Dr Walter.

de colore certantis, saltem nonnulla à me iterum petit; quæ si ipsi obtinere potero vel nancisci, et mihi illud non denegabitur.[a] Mei[8] labores interea ‹tantum non› quiescunt nisi quod in paucissimis sim occupatis essentiis plantarum præparandis, sed jam me incoepti fere poenitet, nam tædiosissimus est labor, et ‹ante›[9] deum, ad minimum, coagulationem et solutionem non perficitur.[10] Inter omnes autem, credo me nobilissimam essentiam ex Carduo benedicto repertiorum. Nam ea jam, si parum deponatur, in[11] salem Nitro simillimum sed amarum concrescit ‹essentia[12] vero› Cichorea in [*sic*] insipidum &c: Medicinam contra calculum quod adtinet,[13] ea ex lapide est ossifrago,[b] sed tædiosissimae præparationis, et preciosa ad modum, propter maximam spiritus salis copiam, quæ in ea paranda, consumitur. Sed certissime mihi persuasum habeo, verum esse calculi et podagræ curatiorem, adeo quod helmont non insulse quæstionem de lapide ossifrago proposerit, quidni scilicet sit curaturus podagram Calculum &c?[14] In liquoris vero forma est hæc medicina, valde amara et ex luteo viridescens.[15] Observavi quod ab ejus usu Socer meus turbidissinam urinam cum mucilagine et[16] innumeras calculorum frustulis exurinat.[17c] /fol. 19/ præcipue vero observandum[18] [est qu]od nuper eminperit muciluginem urinæ supranatantium, tenacem quæque vitro bid-

the sapphire; in any case, he requests a few things from me in return, and, if I should be able to obtain or light upon them for him, then he will not deny me this.[a]

My own work, meanwhile, is almost at a standstill, except that I have been busy in preparing a few little essences from plants. But I am now almost sorry that I began this task, for it is a most tedious work, at least before the coagulation and solution is finally finished. Among all of these, however, I believe that I am about to discover a very noble essence from blessed thistle. For if a little of this is set aside, it coalesces into a salt very similar to that of nitre, but bitter in taste, though indeed rather insipid when compared to the essence of chicory. As for a remedy against the stone, there is one that can be produced from the lapis ossifragus;[b] but the preparation of this medicine is very tedious, and quite expensive, because of the very large amount of spirit of salt which is used up in its production. But I am absolutely and thoroughly convinced that this is a true remedy for the stone, and for the gout. Indeed, Helmont asked a far from foolish question about the lapis ossifragus: why would it not be able to cure the gout, the stone and other things? Indeed, this medicine is in the form of a liquid, is extremely bitter and from being yellow, turns green. I have observed how, by using it, my father-in-law expels a very turbid urine, with a mucilage and innumerable fragments of stones.[c] Indeed, it is particularly to be observed that he recently urinated a thick mucilage which floated upon the urine, and which in two days hardened

[a] i.e., the new vitriol recipe.

[b] i.e., osprey stone. Osprey stone, or osteocolla, is a deposit of carbonate of lime, forming an incrustation on the roots and stems of plants, and often used as a treatment for setting bones.

[c] 'my father-in-law', i.e., Hartlib.

uum duresceret. Interim vero[19] nullum symptoma malum accedit. Sed plura hac de re coram.

Cæterum Mercurii Sublimati jam nactus sum quinque libras quarum tibi toii ℓℓ; servo, (ut inter nos convenimus).[20] Alia quoque ad minimum decem habeo translata ex germanico idiomate, quæ[21] cuncta, si cupiveris ad te mitti poterunt, vel, pro te, hic adservari. Plura hac viæ quæ addam, non habeo. Nisi[22] quod sum

Vir Nobiliss[imus]
T[uus].
dum vivo
F Clodius.

Queenestreete
the 7 of July
Ao 1657.

upon the glass vessel. Meanwhile, in truth, no dangerous symptom occurred. But I shall tell you more about this matter when I meet you face to face.

For the rest, I have just laid my hands on five pounds of sublimate of mercury, of which I am keeping two and a half pounds for you (as we agreed). I have also translated at least ten other items from the German language; all of these, if you wished it, could be sent on to you, or alternatively, I could keep them here pending your arrival. I have nothing more to add at this time, except that I remain,

most noble sir,
Yours, while I live,
F. Clodius

For the Honorble
Robert Boyl Esqr.
At
Oxford.
[23]at Mr Crosses house over against
All Soules Colledge.[a]

Seal: Part missing. Full achievement of arms. Shield: per fesse charged with a rose [?]. Crest missing.

[a] For John Crosse see above, p. 193n.

HARTLIB to BOYLE 4 August 1657

From the printed version in Birch (ed.), *Works* (1744), v, 267–8. Also printed in Birch (ed.), *Works* (1772), vi, 93–4.

Aug. 4, 57.

Honoured SIR,

LAST Tuesday, July 29, I wrote largely, enclosing a great packet from *Ireland*, and something of weather-glasses, which I thought would have been very welcome unto you; but I have not had one line from you, whether they have been safely delivered or not.[a] The enclosed I got yesterday by the post from *Ireland*, with a letter from Mr. *Worsley*, dated at *Holy-head*, July 29.[b] He presents his most humble service. I am told again – As oft as you commend heath, you may do well to put them in mind of adding some cordial plant, as sage, or balm, which will add some help, to keep the drink the longer. And you may put them in mind of Roman wormwood,[c] which agrees with all the months /p. 268/ that have *R*, as for oisters. We (in *Herefordshire*) begin to plant it, a little of it does much towards the preservation of the beer.[d] But that heath begets madness, is against our long and constant experience; and how can it be so, it being apparently a release to a hard spleen, as perfectly as tamarisk? But I insist upon the necessity of adding some other cordial herbs, to prevent the drink from sourness. In *Herefordshire*, as a powerful preserver, they bake wormwood in a loaf of coarse bread, and break this bread very small into the ale or beer. They say it does much please the taste, and preserve the drink. You may smile at it, but my witty neighbour, to encrease the store of his Roman wormwood, pleached it down in the way of propagation, and it succeeded in great plenty. I rest ever,

Honoured Sir,
your most faithful
and assured servant,
S. HARTLIB.

[a] This letter is not extant; the packet from Ireland has also not been found.

[b] In his letter of 29 July 1657 Worsley sent Hartlib the astrological tract ('Problema physico-astrologicum'), which was subsequently published in Boyle's *General History of Air*. See *Works*, vol. 12, pp. 48–56.

[c] i.e., Artemisia pontica.

[d] Hartlib is probably identifying himself here, and later in the letter, with the activities of John Beale who lived in Herefordshire, and first came into contact with Hartlib in 1656.

OLDENBURG to BOYLE 30 August/8 September 1657

From the original in Early Letters OB 2. 4°/2. A draft version survives as R.S. MS 1, fols 27–8, with which this text has been collated and significant differences noted.
Previously printed in Birch (ed.), *Works*, (1744) v, 299–300. Also printed in Birch (ed.), *Works*, (1772), vi, 141, and *Oldenburg*, i, 133–5.

Saumur the 8th Sept,
1657 st.n.

Sir,

I think myselfe obliged to you, that after the troublesome Journy,[1] you mention in your letter, you would give yourselfe the trouble of excusing your silence to my former;[a] though I confesse, I was glad to see it broken, and[2] withall to find ‹an›[3] intention in you of being larger, when your Academicall Hurry should be over. As for us here, we are, through the goodnes of God, in perfect health, and, your nevew having spent these 2 or 3 months, we have been here, very well and in more than ordinary diligence, I cannot but give him some relaxation in taking a view of this province of Anjou, during this time of vintage; which though it be a very tempting one to a young appetite, yet shall I hope, by a carefull watchfulnes prove unprejudiciall to his health.[b] I am persuaded, Sir, if you were here, and would please to make with us such a little, but very pleasant tour, as this is to my knowledge, who have made it heretofore, it would conduce very much to your health. But, I doubt, your desire[4] of knowing and of advancing knowledge, and the opportunities of doing that much better, where you are, than here[5] (the way you take) will deprive us ‹still› from the happines of enjoying your company here. Well, if the publique doe but thrive, we ought to bear privat losses with patience.[6] In the interim, give me leave, Sir, to acquaint you with an observation, I made th'other day in reading a piece of Thuanus, which made me[7] reflect upon your discours about the nature of Poisons, wherein, if I remember well, you seeme to incline to the opinion, that the poison of vipers consists rather in the rage, wherewith they bite, than in any part of their body, which hath alwaies a deadly poison in it: Confirming it with instances, from the madnes of a dog /2 (1)v/ making his teeth poisonous, which before were not so, and from an inraged cocke, killing a man by a slight hurt.[c] The author, I named, gives another instance, which, if true, may in

[a] Oldenburg refers to his letter to Boyle of 4 July 1657. Boyle's letter, to which Oldenburg is replying, is not extant.

[b] For Richard Jones, travelling under Oldenburg's care, see above, p. 205n.

[c] This is a reference to *Historiarum sui temporis … libri CXXXVII* (1604–20), by Jacques Auguste de Thou (1533–1617). The story is related on pp. 159–60 of vol. 1 of the 1620 Geneva edition. The work by Boyle to which Oldenburg refers is 'An Essay of Turning poisons into Medicines', of which Oldenburg's version is published in *Works*, vol. 13, p. 237ff.; it is summarised in *Usefulness II. sect. 1* (1663), in ibid., vol. 3, pp. 324–6. Oldenburg exaggerates: the Scotsman was bitten by the 'dentem rabidum ac paene mortiferum' ('enraged and almost deadly teeth') of his captive.

my opinion, justly claime a place among the rest. He relateth, (lib 4. ad ann. 1548)[8] that the Scots then besieging a towne, which he cals Hadina,[9a] taken from them by the English, and having both French and Highlanders in their army, one of the latter, seing the French fighting stoutly, and thence stirred up to emulation, soon rushed into the thick of the Ennemy sallying out, ‹and› in his fury laying hold on one of the English soldiers, threw him,[10] being a lusty fellow, upon his shoulders, and running away with him into the camp of his Generall,[11] was by the way so bit in his shoulder (he going half naked) by the enraged teeth of the Englishman, that he failed very litle, as the author saith, of being killed by that wound. The story seems at least as credible, as that of the cock, unles you'l say, a cock can be chafed to greater rage,[12] than an English soldier carried away by a naked Scotsman on his shoulders into the Camp of the Ennemy. To this story I shall adde[13] another, and then, Sir, end your trouble; but the author, I had it from, is not so authentique, as famous Monsieur de Thou. It was an Italian, who told me but the other week, that Pope Urban VIII. never did eat any pullets or other tame fowle, but such as had been fed and fatned by the flesh of vipers, and that his long Popedom was ascribed (humanitus loquendo)[14] to the vertue of such food.[b] The thing itselfe, I beleeve, Sir, you'l think very credible, seeing men ordinarily enough eat broath, wherein viper-flesh hath been boiled, ‹for› to fortify or recruit nature.[15] I wish cordially, you also may find means, powerfull to preserve and strengthen yours,[16] /2 (2)/ for the good of the learned Commonwealth, in which preservation would be particularly involved much Joy and advantage to him, who, as long he liveth, desireth to be

Sir,
Your
faithful and humble servant,
H. Oldenburg[17]

Your nevew and selfe entreat your favour of presenting our humble services to ‹all› our noble and learned friends at Oxford.

To his noble friend
Robert Boyle Esquire
at Mr Crosses[c] / in / Oxford.

[a] 'Hadina' is Haddington, the English garrison, 15 miles east of Edinburgh, which was besieged by Scottish and French troops during 1548.

[b] Urban VIII (Maffeo Barberini), Pope from 1623 to 1644, is notorious for his association with the trial and condemnation of Galileo. Oldenburg's Italian source has not been traced. *Humanitus loquendo*, 'speaking in a human way'.

[c] For John Crosse see above, p. 193n.

Seal: Circular. Damaged. Three fleurs de lis.
Endorsed at head of page on 2 (1) with Miles's crayon number 'No. II' and with Birch ink number 'No 2' on both 2 (1) and 2 (2)v, where it is deleted.

HARTLIB to BOYLE — after 1 September 1657

From the printed version in Birch (ed.), *Works* (1744), v, 268–9. Also printed in Birch (ed.), *Works* (1772), vi, 94–5.

Honoured SIR,

ON Monday I received your last, of Aug. 29, but could not answer the same, (by reason of divers commissions and letters, which my lady had laid upon me) on Tuesday next, but sent only under a covert one from Mrs. *Drury*, and another from Mr. *Worsley*, which also by the last post I received from *Ireland*.[a] It seems, that the 26th of Aug. (which is the date of his letter) he did not yet know of the council's order, which my son hath sent unto him.[b] For, besides that to yourself, he sends another to my lord deputy, and is very earnest, that it may be seconded.[c] But, on Tuesday last, I told my lady, that the business was not only fully past the approbation of the council, but likewise his highness's consent; so that what remains must now be dispatched in *Ireland*.[d] My son believes, that the foresaid order will give Mr. *Worsley* ample satisfaction. I am more troubled at your weakness and distempers, than at my own pains, which rather, God be thanked, diminish, than encrease. The ulcerous matter is likewise no more so discernible, as it was for divers weeks before; but every day almost there comes away little pieces of stones, whereby my son *Clodius* concludes, that the stone is dissolving.[e] Mr. *Van Mussig* shewed me his

[a] Boyle's letter of 29 Aug. is not extant. For 'Drury' read 'Dury'. Mrs Dury, Dorothy Moore, was related by marriage to Boyle's brother-in-law, Arthur Jones (d. 1670), 2nd Viscount Ranelagh. See Maddison, *Life*, p. 62.

[b] Worsley's letter to Hartlib of 26 Aug. is not extant. On 18 Aug. 1657 the Council of State issued an order authorising the Lord Deputy and the Council of Ireland to fulfil Richard Eccleston's and James Rand's proposal for the sale of forfeited estates in Ireland to pay arrears of salary to officers and soldiers in Ireland. Part of the profits were to be used to support Hartlib's schemes for the advancement of learning. See Turnbull, *H. D. & C.*, pp. 54–6, and Webster, *Great Instauration*, pp. 75–6, 462. Hartlib refers to Samuel Hartlib junior (b. c. 1631), who was Worsley's clerk in the Council of Trade. For Hartlib junior see Turnbull, *H. D. & C.*, pp. 8–9.

[c] This is a reference to Charles Fleetwood (d. 1692), Lord Deputy of Ireland from 1652 to Nov. 1657. The letter to Fleetwood from Worsley has not been found.

[d] i.e., Mary Burningham, for whom see above, p. 60n. As was his custom, Hartlib refers to Oliver Cromwell as 'his highness'.

[e] Hartlib refers to his son-in-law Frederick Clodius.

doctoral charter; but alas! this will cure no distempers nor diseases. Within two or three weeks he is going for *Ireland*, presenting his humble service.[a] As for the elixir proprietatis, he is very positive and peremptory, that there is no better comforting cordial in the world, for weak spirited, or aged people. Truly I have found it so hitherto, without any inconveniency at all. The publick adviser of this work gives this following advertisement. 'Next unto *Vaux-hall*, in *Lambeth*, liveth one *Thomas Smart*, an artist, who, considering the necessity of the times, and also being moved thereunto by divers pious and godly ministers, for the welfare of this nation, doth hereby signify, that he hath one medicine, which, by God's blessing, perfectly cures all gripings of the bowels, loosenesses, bloody fluxes, and their kinds. Also another medicine, that is a speedy and perfect cure for epidemical, feverish, and aguish diseases, that now so much annoy. The medicines are safe, not unpleasant to take, and for one half crown, as much as will be sufficient for one person. *Probatum est*.'[b] Thus far the adviser. Do you believe these medicines? Some weeks ago, Dr. *Broome* told me himself, what a wonderful cure he hath performed on Sir *James* (as I take it) *Cunningham*; but, poor gentleman, is brought over-against my house, where he is to be cut of the stone, within a day or two.[c] Dr. *Walter*, at *Hamburg*, writes very substantial and experimental letters to my son.[d] I advise him to entertain carefully a strict and faithful correspondence with so able and successful a physician. I had a cursory reading of one of his letters, wherein he commends hugely essentium cervinum.[e] Yesterday I had from *Tunbridge* these following lines.[f]

'It hath pleased God to visit me with a long and lasting ague, which gives little intermission for study. I have had a relapse or two, and, after them, such immoderate sweats, at night, as have consumed me to skin and bones. For the sweats, the physician and I am not pleased; only the last week, by God's good providence, a gentlewoman, who came to visit me, assured me, upon her own knowledge, that two persons, visited with this late sickness, and by sweats likewise brought into a consumption, have, within a fortnight, or little more time, recovered, and are now also grown fatter and healthier than formerly, by the only use of the Turkish drink coffee. The one of these persons thus cured was a young gentlewoman, and the other an ancient gentleman; and of the truth of this I doubt nothing, the authors

[a] For Johann Brün, or Unmussig, see above, p. 158n. Brün settled in Ireland during the Protectorate. See Webster, *Great Instauration,* p. 302n.

[b] i.e., 'It has been proved'. Hartlib refers to the *Publick Adviser*, 15 (Mon. 24 Aug.–Mon. 31 Aug. 1657), p. 260. Thomas Smart was a chemist and chemical assistant to the Marquis of Dorchester. See Webster, *Great Instauration*, p. 304.

[c] It is possible that Hartlib confuses two people here. He may be referring to James Cunningham (d. 1662), advocate and town clerk, or alternatively, to Sir John Cunningham (d. 1684), lawyer. The physician who performed the cure was Philip Broom (fl. 1639–57).

[d] For Dr Walter of Hamburg see above, p. 223n.

[e] i.e., *spiritus cornus cervi*.

[f] Hartlib's correspondent in Tunbridge has not been identified.

being all persons of quality and credit. Upon this, I was earnestly pressed to send for a bottle; and so I had one last week; and though I have taken it but three mornings, yet I find my stomach more clean, and stronger to digest, my brain clearer, and my sweats somewhat abated. And I am the rather convinced of the efficacy of it, because, as my lord *Verulam* commends it, it is the Turks wine; and they, as I understand, are generally healthy, strong, fat, and big men.[a] And as their chief feeding is rice (which also I find a great nourisher, and amongst the variety of meats provided for me, I am weary of them all but this) so their chief drink is coffee, at which they tipple, with a fool to make them sport. Now, Sir, the intent of this relation is not to inform you, either of the drink, or berry it is made of (of which I have tasted, and find the drink to have its only taste without other ingredient) or the virtues of it; to all which I /p. 269/ believe you are no stranger; but only give you in this testimony, that you may spread its benefit towards this new disease, which I hear is with you; and not only in these parts, but elsewhere, in *Oxfordshire*, *Norfolk*, in *Hampshire*, *&c*. wheresoever an epidemical disease useth to rage in the inlands and sea-coasts by us, *Rochester*, *Dover*, *Rye*, *&c*.[b] Another purpose of this paper is, to beg of you some of the freshest berries, which may be had of some Turkish merchant, with his directions to make it drink; which, if it may be had, I know you may command; and this for my own recovery. I have sent now for another bottle, and it will last me a week more; but, to save this trouble, I beg yours, and hope they will spare of their store, and discover the use of it to one, who intends no gain by it. Sir, now I am upon this seeking for cordials (which daily I take, to support my spirits in this weakness) I find in the Arabian cordials in our *Pharmacopæia*, in Andromachus or Venice Treacle, a great quantity of raw silk; some of which I desire of you likewise, if you can direct me withal, whether it hath any correctives, or may be taken alone, as I find it prescribed by *Culpepper*.[c] I shall once more trouble you for eggs of the worm. For here we have trees, and I intend to plant more. But of this not at present.' Thus far a publick-hearted learned friend. Sir, do you know whither to address me for the B*berries?[d] I have written to know what will please the secret-monger. Mr. *Wood* tells me of a rare one for a new kind of graffing of vines, which he hopes to attain, and to communicate to me.[e] If you have perused my discourse concerning *Ireland*, I desire still your

[a] Hartlib's correspondent refers to Francis Bacon (for whom see above, p. 201n.) and to Bacon's *Historia vitae et mortis* (1623), where Bacon writes about the invigorating properties of 'a kind of herb, called "coffee"' used by the Turks; see J. Spedding, R. L. Ellis and D. D. Heath (eds), *The Works of Francis Bacon*, 14 vols (London, 1870), v, 271. Boyle discusses the properties of coffee in his *Usefulness I*, see *Works*, vol. 3, pp. 454–5.

[b] The 'new disease' has not been identified.

[c] Here Hartlib probably refers to Nicholas Culpeper's 1653 edition of *Pharmacopoeia Londinensis*.

[d] The reference is presumably to coffee berries as requested by Hartlib's correspondent.

[e] For Robert Wood see above, p. 221n.

impartial opinion about it.[a] Since my last I have not seen Dr. *Kuffler*;[b] but when I do, I shall acquaint him with what you have written, being upon this, or any other occasions,

Honoured Sir,
your most assured
faithful servant,
S. HARTLIB.

Just now Mr. *Dalgarno* is come to my house.[c]

HARTLIB to BOYLE 8 September 1657

From the printed version in Birch (ed.), *Works* (1744) v, 269–70. Also printed in Birch (ed.), *Works* (1772), vi, 96–7.

Sept. 8. 57

Honoured SIR,

NOT only Mr. *Dalgarno*, Mr. *Morstein*, Sir *Charles Culpepper*, but also another Polonian gentleman have kept me so long, that I cannot enlarge, having several things, which must also, by this very post, be imparted to *Ireland*.[d] The one of the enclosed I received by the last post from thence, and the other from *Saumur*.[e] Dr. *Van Mussig* purposes to go to *Oxford* on Thursday next.[f] He triumphs to have lighted upon a special secret, or medicine (*multorum morborum curativum*) at *Amsterdam*.[g] But I durst not ask the receipt of it, he prizing the same at so high a rate; or, it may be, he suspects me, as if I would communicate the same into your bosom, and therefore resolves rather to gratify you with it by his own hands; at which kind of charity, or ambition, I shall never be offended. If he make no offer, I pray use freedom to signify to him, that I have intimated something unto you, concerning

[a] This is possibly a reference to material related to the planned continuation to the *Natural History of Ireland*. See Webster, *Great Instauration*, pp. 432–4.

[b] For Johann Sibertus Küffler see above , p. 221n.

[c] This is a reference to George Dalgarno (c. 1626–87), author of schemes of philosophical languages.

[d] For George Dalgarno see previous note. Faustus Morstyn, a Pole who had studied at Oxford, brought Dalgarno to Hartlib's notice and contributed to projects of universal languages. 'Sir *Charles Culpepper*' is probably Sir Cheney Culpeper, for whom see above, p. 63n. The other 'Polonian gentleman' has not been identified.

[e] The letter from Ireland is missing. The letter from Saumur is possibly Oldenburg's letter to Boyle of 8 Sept. 1657. Oldenburg was resident at Saumur in France from July 1657 to Mar. 1658.

[f] For Johann Brün, or Unmussig, see above, p. 158n.

[g] 'a cure for many illnesses'.

a special medicine, which he rejoices to have found at *Amsterdam*. I received a letter for Mr. *Oldenburg*, which shall be sent by the next post, with all care and faithfulness. Mr. *Oldenburg* complains, that, besides the two great packets, he has received no more letters.[a] But he may thank himself for it, having sent the address for them but a few weeks ago. I am sure there is no want on my part. Your last is dated Sept. 5.[b] I am surprised with a kind of astonishment, that Mr. *Worsley* hath not answered my son's nor my own letters, which he might have done fourteen days ago.[c] For I have answer upon my other letters from thence, which were sent at the same time. By this very post I have written again, and my son promises to do the like, with sending another copy of the order, with its amendments, and a report, that it is passed both his highness's and the council's consent.[d] If he had signified his satisfaction (for the order is fully granted and drawn up, according to all the instructions, which he left behind) the foresaid order might have been sent by this post to the council in *Ireland*. My son is now more and more contriving, how, with the best grace and advantage, it may be transmitted. For, as soon as he shall have understood his approbation, he intends, that the order, with the addition of some affectionate clauses, shall be turned into a letter, written by the council here to the council in *Ireland*, under the council's own seal, that it may be distinguished from the ordinary passing or imparting of orders from hence to *Ireland*, that it may appear a business of extraordinary import and concernment. The next post I hope will bring Mr. *Worsley*'s resolves. I have also pressed much upon him the performance of his other promise, concerning cellars and vinifications of liquors.[e] Mr. *Brereton* proposes thus.[f] 'I like well Mr. *Beale*'s addition of heath, and I have not yet received the promised account of it from the physician I wrote to you of. [g] Your friend there speaks of recovering sour or dead beer by fermentation, and that hops doth well to keep beer long together. I am of opinion, that if it be very well fermented and purified at first, it will keep of itself, provided you exclude air. And that it is really so, is seen in the Scottish ale, whereof I gave you the process, which you have inserted in your last edition of your *Legacy*, page 231.[h] Now, to prevent that wasting, which is there spoken of, I think it would be good to put so much oil

[a] Neither this letter for Henry Oldenburg, nor the others that are alluded to here, are extant. See *Oldenburg*, i, 149.

[b] This letter is not extant.

[c] For the last letter received from Benjamin Worsley see above, p. 229. For Hartlib junior's connection to Worsley see above, p. 229n.

[d] For the Order of the Council, passed by Cromwell, who is referred to by Hartlib as 'his highness' see above, p. 229n.

[e] We have been unable to find out any more about these projects on Worsley's part.

[f] For William Brereton see above, p. 160n.

[g] Beale's 'addition of health' has not been identified.

[h] This is a reference to Hartlib's *Legacy of Husbandry* (1655). The *Legacy* was collaboratively written. Brereton's section, on p. 231, bears the title 'The Scotch way of Brewing their strongest and best ale'.

at the top of the vessel, as would cover the whole surface of the drink, at the largest part of the vessel; /p. 270/ by which means, the oil still lying on the top of the drink would infallibly keep in the spirits, as is known to divers merchants, vintners, and gentlemen about *London*: for so they keep in bottles, that hold about two quarts, their rich *Italian* wines, which will not by themselves endure the sea; and I have drank of them at *London* in April, so that they were above half a year old, and very pleasant, full of spirit, and no taste of the oil at all. But because oil of olives would be too dear, let it be considered, whether rape oil may not be so clarified, as to serve the turn. For I remember, that in *Holland* they use to fry their fish in it; which surely they would not do, if it gave any ill savour: and if it do not, I do not see, why the same oil may not serve again and again. For all this while I suppose, that the drink so kept must be first exceedingly well fermented, clarified, and drawn off the lees.' Thus far he. I pray give in your observations upon this to him, who is really,

Honoured Sir,
your entirely devoted servant,
S. HARTLIB.

JOHN NICHOLLS[a] to BOYLE — 12 September 1657

From the original in BL 4, fols 85–6. Fol/2.
Not previously printed.

Honourd Sir

In Answere to your Honours last letter to me. according to your direction I went to Stalbridge and there ‹I tooke› out the Conveyance of Stalbridge; and I finde it thus setled.[b] By Indenture dated ult[imo] Novembri 16°. Car:[c] Richard Earle of Corke conveyes the manor of Stalbridge to Edward Lord Howard of Escricke, and Robert Lord Digby of Geshill in Ireland to the use of Robert Boyle Esquire his youngest sonne dureing his naturall life the remaynder to his first sonne & the[1] heyres males of his body the remainder to his second sonne, and the heyres males of his body. with the like remaynders to other sonnes.[d] The

[a] John Nicholls is mentioned in Boyle's will as 'Gent and Steward' of his estate at Stalbridge. See Maddison, *Life*, p. 259.

[b] For Stalbridge see above, p. 25n. Boyle's letter to Nicholls is not extant.

[c] i.e., 30 Nov. 1640, lit. '16th year of the reign of Charles'.

[d] Edward, Lord Howard of Escrick (d. 1675), was uncle to Lady Margaret Howard, who married Boyle's brother Broghill in 1640. Cork intended Boyle to marry Howard's daughter Anne Howard; see Townshend, *Life and Letters* (above, p. 30), p. 349 and Maddison, *Life*, p. 55. Robert, Lord Digby of Geashill (d. 1642), married Boyle's sister Sarah in 1626.

remaynder to Francis Boyle another sonne of the said Earle of Corke for Terme of his life with the like remaynders to his sonnes; The remaynder to Roger Lord Broghill one other of the sonnes of the said Earle of Corke for Terme of his life with the like remaynders to his sonnes; The remaynder to Lewis Vicount Boyle of Kynalmeachy one other of the sonnes of the said Earle of Corke for Terme of his life with the like remaynders to his sonnes; The remaynder to Charles Boyle Esquire sonne and heyre apparent of the Lord Dungarvin one other sonne of the said Earle of Corke, and the heyres males of his body with divers remaynders over; The remaynder in Fee to the use of the right Heyres of Richard Boyle of maismore in the County of Gloucester for ever;[a]

In which said Indenture there is this proviso (videlicet) Provided allso and the true meaneing thereof is; That it shall & maybe lawfull to & for the said Robert Boile Francis Boile sir Roger Boile knight Lord Boile Baron of Broghill, sir Lewis Boile knight Lord viscountt Boile of Kynalmeachy and the Issues males or heyres males[2] of their bodyes respectively, and to & for Charles Boile Esquire sonne & heyre apparent of the Lord of Dungarvin, and the Issues or heyres of their bodyes respectively; And to & for every other person or persons respectively that shall have the use in possession of the said manor & premisses by any Limittation in this Indenture, after he or they or any of them respectively haveing the use in possession; shall attayne to the age of one & Twenty yeeres to make any Lease or Leases for life or lives not exceedeing Three lives or for yeere or yeeres not exceeding one & Thirty yeeres absolute or for any number of yeeres determinable upon one Two or Three lives of the said manor & premisses or any parte thereof (Except the Cappitall mansion howse of the said manor wherein the said Earle of Corke doth now dwell or Inhabite together with all stables outhowses gardens orchards & demeasne Lands now in the proper occupation or Tenure of the said Earle, and used as demeasne Lands togeather with the said howse; And allso except the Advowson and right of Patronage of the Church of Stalbridge aforesaid to any person or persons: soe as the said Leases be not to take commentsment before the former gr[an]t Leases Termes or estates now in being or hereafter to be made or gr[an]ted as aforesaid be within Three[3] yeeres spent or Runn out by Effluxion of tyme, and not by any advantage of any forfeiture to be taken of any of them nor by any other determination or Cosenous surrender.[b] And soe as upon every[4] such lease or graunt the former reserved rents dutyes & service at the least or more be thereby reserved, and payeable yeerely unto them, and unto every other persone or persons in remaynder haveing the use in possession respectively by any Limittation in this Indenture;

[a] Boyle's brothers mentioned here are Francis Boyle, for whom see above, p. 23n., and Lewis Boyle, Viscount Kinalmeaky, for whom see above, p. 21n. Charles Boyle (1639–95), Viscount Dungarvan, was Boyle's nephew, the son of the 2nd Earl of Cork. Richard Boyle of Maismore was the 1st Earl of Cork's godfather. See Townshend, *Life and Letters* (above, p. 30), p. 7.

[b] 'Cousenous', i.e., fraudulent.

during the whole continuance and being of such Lease or Leases grant or grants respectively; And soe as allso the severall & respective Rents dutyes & service upon every such Lease to be reserved, as aforesaid be duely & yeerely bona fide to be payd and satisfyed to the Lessors & ‹to› all others in remaynders haveing the use in possession respectively according to the Lymittation thereof in these presents before mentioned without any release diminuton abatement or other discharge of the said Rents dutyes or services or any parte thereof; And whereas[5] by Indenture beareing date the Tenth day of december in the :15th: yeere of king Charles[a] made betweene the Right Honourable James Earle of Castlehaven; Francis Lord Cottington, master of his majesties Courte of Wards and Liveries, Gabriell Hippesley Esquire & Edward mannyng gent. /fol. 85v/ of th'one parte;[b] And the said Earle of Corke and Gerrald Booth[6] and William Chettle gent. servants to the said Earle of Corke of th'other parte;[c] It is recited & mentioned that Mervyn late Lord Audely and Earle of Castlehaven did by Indenture beareing date the :14th: day of July: In the :22th: yeere of[7] King James of England Sc[otland]:[d] demise graunt and Lease the said manor & premisses with th'appertenances unto sir Ferdinando Tuckett knight of the Honourable Order of the Bath; Sir John Underhill knight then Esquire, John Anketill Esquire and Walter Tite gent. for the Terme of Three score yeeres to be accompted from the said :14th: day of July in the said :22th: yeere of King James over England Sc[otland]:[e] which lease for Threescore yeeres and all th'estate & Interest of & in the premisses thereby demised and graunted to the said Ferdinando Tuckett Sir John Underhill, John Anketill and Walter Tite, and all the remnant or residue of the said Terme for Threescore yeeres that is yett to come and unexpyred is now by meane assignements come to the said Gerrald

[a] i.e., 1639.

[b] This is James Touchet (c. 1617–84), 3rd Earl of Castlehaven in the Irish peerage. He sold Stalbridge to the 1st Earl of Cork for £5,000 in 1636. See Townshend, *Life and Letters* (above, p. 30), pp. 290–1. For Francis Lord Cottington see above, p. 63n. Cottington was Chancellor of the Exchequer 1629–42 and Master of the Court of Wards 1635–41. Also mentioned is Gabriel Hippesley, younger son of John Hippesley of Somerset, equerry of the king's hunting stable. Gabriel Hippesley was also involved in the 1st Earl of Cork's purchase of the manor of Marston for Broghill; see Townshend, *Life and Letters*, p. 473.

[c] Gerald Booth has not been identified. William Chettle is known only through the 1st Earl of Cork's will, in which it is stated that Chettle had waited on the Earl in his chamber and carried his purse for more than 26 years; see Maddison, *Life*, p. 56.

[d] This is a reference to Mervyn, Lord Audley (c. 1593–1634), 2nd Earl of Castlehaven, who was executed for sodomy and assisting in the rape of his wife in 1634, at which time his English title, the Barony of Audley, was forfeited to the crown. The 22nd year of James I's reign was 1624.

[e] Sir Ferdinando Touchet, made Knight of the Bath in 1610, was the 2nd son of George Touchet, Lord Audley, later 1st Earl of Castlehaven, and the uncle of the 2nd Earl. Sir John Underhill was knighted on 22 July 1626 at Oatlands; see W. A. Shaw, *The Knights of England*, 2 vols (London, 1906) ii, 191. John Ankill (b. 1597), was paid £800 by the 1st Earl of Cork for the manor of Buttevant of the Earl of Barrymore; see Townshend, *Life and Letters*, p. 482. Walter Tite was assessed for four hearths in the Stalbridge Tithing in the early 1660s; see Meekings, *Dorset Hearth Tax Assessments* (above, p. 194), p. 57.

Booth and William Chettle, upon Trust for the said Earle of Corke, They the said Gerrald Booth and William Chettle being his servants and the assignement thereof being made to them[8] by his nomination and appointment and the money payd or given for the same being payd by the said Earle of Corke as by the said Indenture beareing date the Tenth day of December: in the Fifteenth yeere of King Charles more fully appeareth; It is now further Testifyed by these presents and declared and agreed by the Earle of Corke That the said Gerrald Booth and William Chettle their Executors Administrators and assignes shall from henceforth dureing all the said Terme[9] for Three score yeeres that is yet to come and unexpyred permitt & suffer the Rents Issues and profitts of all and singular the ‹said› manor and premisses with th'appurtenances to be taken receaved and enjoyed First by the said Earle of Corke, during his life; and after by the said Robert Boile Esquire: during his life and after his decease then by all and every other such person and persons respectively unto whome any use or estate thereof or therein is before Limitted, in and by these presents, and according to the Limittation of use or estate in that behalfe Lymitted or declared in and by these presents respectively without any rent accompt or recompence for the same to be made yeelded or given unto them the said Gerrald Booth and William Chettle or eyther of them then or eyther of their Executors Administrators or assignes. And that it was meant and intended by the said Earle of Corke ever since his purchase of the said Manor and premisses, That the said Assignement of the said Lease for yeeres which he caused to be taken in the name of the said Gerrald Booth and William Chettle should respectively goe according unto and wayte or attend uppon such disposition Conveyance or assurance of the said Manor and premisses, as he the said Earle of Corke should or shall make or cause to be made thereof at any tyme dureing his life;

In this provisoe is conteyned your power and Lymittations, in the Conveyance only there is something mentioned for preservation of the howsehold stuffe mentioned in the Inventory to the Conveyance annexed: I could have given your Honour a shorter accompt of the substance of it but that by your letter you directed me to transcribe the Clauses of what power was given you, and the Lymittations mentioned in the said Conveyance; Noe more at present to trouble you withall at present but to assure you, that I am & ever willbe your Honours humble & faythfull servant to serve you in what I may.

Shafton:[a] 12°: September *1657*: Jo: Nicholls

[a] i.e., Shaftesbury, Dorset.

[10]These
For the Honourable Robert Boile
Esqr; at his lodgeing in St. / James neere Chaseing Crosse.
or at the white heart at Charing / Crosse London;
mris Hutchings[a] if mr Boile[11] / is not at his lodgeing at St. James
then I pray send this letter with / all Speede to his lodgeing at mr.
Crosses howse over against Allsoules
Colledge in Oxford; to be
presented with care; & speede,
post pd 3d / 2d[12]

Seal: Damaged. Octagonal. Shield: *three pheons*. Paper impression of seal from another letter.

OLDENBURG to BOYLE 12/22 September 1657.

From the original in Early Letters OB 3. 4°/2. A draft version survives in R.S. MS 1, fol. 29.[b]
Previously printed in Birch (ed.), *Works*, (1744), v, 300, Birch (ed.), *Works*, (1772), vi, 142, and *Oldenburg*, i, 136–9.

Sir,

Yours from the 2[d] of Sept. (receaved by us the last of the same) intimating, that you had not heard from us a very long while, obliged me, soon after the receit thereof to acquaint you, that we have taken the freedom to visit you twice by our letters in our Journy from London to Saumur, and as often, since we have been at Saumur; but been so unhappy, as never to hear from you, but once before this, which we now humbly thank you for.[c] I hope, since our letters have once found the way to and fro, they will not misse hereafter; and I rejoyce to heare you speak of your indisposition in praeterito,[d] adding my hearty wishes and praiers, that the goodnes of God would please to confirme your health, and to keep from you all

[a] Mrs Hutchings has not been identified. For John Crosse, see above, p. 193n.

[b] The draft is dated 2 Oct. 1657. A damaged recapitulation of OB 3 appears in Oldenburg's hand in Oldenburg to Boyle, 19/29 Mar. 1658 (below, pp. 256–7), which suggests this letter never reached Boyle.

[c] Oldenburg refers to Boyle's lost letter of 2 Sept. 1657. The two letters apparently written to Boyle en route for France are not extant. The letters written from Saumur are those of 4 July and 8 Sept.

[d] i.e., 'former'.

sicknes in time to come, but that usefull one, which, as you say, maketh men fond of charcoale and loame:[a] with which I find none in this place to be troubled[1] at all, having made so little stay in the other towns, which we have passed thorow, that other occasions did not permit me to make inquiry after the lovers of that knowledge. In making our tour hereafter, I flatter myself with the hopes of finding some such at Montpeillers and Marseilles, and if I could meet with a Peireskius in those parts or any where, that is not too far out of our way, I should exceedingly rejoyce.[b] Making use here of an Italian, to teach your nevew something of practicall geometry and fortification, I found, he had a way of writing to others very secretly,[2] which though he would not exchange with me for another, I have by your favor, yet he did it at last for that,[3] which, as the Lirique poet saieth, perrumpit omnia,[4] potentius ictu fulmineo.[c] And thinking, you have not this way,[5] I did venture to send it here inserted,[6] being tried by me and doing very well.[d] It may be of great use, ‹among others›[7] for besieged towns, to encourage them with ‹unseen›[8] promise of succours, unsuspected by the besiegers.[9] The white caracters being written over by black ones of quite another sense, which[10] may be such, as that the besiegers, if the messenger[11] should fall into their hands, would not stop, but rather be glad to let passe; which yet the besieged will by a water, mentioned in the receit, blot out and make appeare what concerneth them and their relief.

I am /3 (1v)/ hugely pleased, that the councill hath granted your desires for the promotion of knowledge;[12] which I suppose to be those, that were couched in a certain petition, you were pleased to impart unto me at Oxford wherein, if I remember well, a matter of 12000 lb sterl. was offred to purchase ‹confiscated›[13] land and houses with in Ireland, and to commit the profit thereof into the hands of certain Trustees, for to employ it in the entertainment of an Agent, Secretary, Translators, ‹for› keeping intelligence, distributing rewards etc.[14] in order to the end aforesaid.[15e] I beseech you, Sir, to favor me with acquainting me with the progresse of this busines, and, if it[16] discommode you not too much, with what else occurreth notable in England; Half a word, or a word ‹used› per antiphrasin (seeing you must use the pen of a servant) will be enough to make me understand your

[a] For Boyle's ill health, see *RBHF*, pp. lxxviii–lxxix.

[b] Nicolas Claude Fabri de Peiresc (1580–1637), scholar, famous patron and amateur of science at Aix-en-Provence.

[c] Oldenburg implies that he paid the unidentified Italian for this code, as money is 'more powerful than the thunderbolt, it breaks down every barrier'. The allusion here is to Horace, *Carmina*, III. xvi. 10–11.

[d] Boyle subsequently included this recipe in a part of *Usefulness* that he never published: see *Works*, vol. 13, p. 308.

[e] The petition was made to the Council of State by Hartlib and others 'for the Advancement of Universal Learning' on behalf of one of Hartlib's schemes first proposed about 1648. Among those sponsoring it were Boyle and Dury, and (in Ireland), Benjamin Worsley and William Petty. For the Rand–Eccleston proposal ordering the sale of estates forfeited in Ireland to pay arrears of salary owed to the army in Ireland, see above, p. 229n. See also Turnbull, *H. D. & C.*, pp. 54–6.

meaning, especially if you shall please to adde but a NB to such matters, as you ‹shall›[17] not think fit to speak freely and plainly of to such kind of persons. Whereby you will very much increase your obligations upon

Sir
your faithful and humble
Servant,
H. Oldenburg.

Receit

Prenez 1 ou 2 ounces de vinaigre distillé, et ½ ounc. de Lithargiron en pierre, et ayant pulverisé cestuy-cy, mettez-le dans le vinaigre, et avec cela escrivez en lettres blanches tout ce que vous voudrez enseigner secretement à vostre amy. Apres, bruslez un morceau de Liege (corke) jusques à ce qu'il soit tout charbonné et ne brusle plus: alors esteignez le avec un peu d'eau de vie. Mettez ce charbon en poudre, et y ayant mis un peu d'eau de gumme, faitez en de l'ancre, avec lequel vous escrirez tout une autre chose sur les predites[18] lettres blanches. En fin, prenez 1 ounc. d'orpiment, et l'ayant aussi pulverisé, meslez[19] le avec 2 ounc. de la chaux vive, qui soit bonne et vigoreuse, et apres mettez les ensemble dans une phiole de verre ou d'estain, tenant une chopine (an English pinte) et l'ayant remplie de l'eau commune, agitez le par ¼ d'heure: Et cest'eau servira à merveille pour effacer[20] /3 (2)/ les lettres escrites de l'ancre, et pour faire apparoistre à vostre amy tout ce que vous aurez escrit en[21] lettres blanches.[a]

To his noble friend
Robert Boyle Esquire
At / Oxford

Seal: Damaged, partially visible. Shield with probably *three fleurs-de-lis* (two visible only).

[a] 'Take 1 or 2 ounces of distilled vinegar and ½ ounce of litharge in the form of stone; having pulverized this, put it in the vinegar and with this mixture write in white letters whatever you wish to send secretly to your friend. Afterwards, burn a piece of cork until it is all carbonised and burns no more; then extinguish it with a little brandy. Powder this charcoal and after adding a little water with gum, make an ink with which to write something else on the formerly mentioned white letters. Finally, take 1 ounce of orpiment and, having pulverised it, mix with it 2 ounces of quicklime, good and strong, and then mix these together in a glass or pewter vial, holding a pint, and after filling it with ordinary water, shake it for a quarter of an hour. This water will be wonderfully effective in effacing the letters written in ink and in rendering visible to your friend everything which you have written in white letters.'

Endorsed in on 3 (1) at head of page with Miles's crayon number 'No III' and also in hand of Miles 'no 3'. On 3 (2) in hand of Miles: 'NB. date must be about end of year 1657 or beginning of 1658'.

BOYLE to HARTLIB — 10 October 1657

From the original note in Hartlib's hand in HP 60/4/19A. 4°/1.
Not previously printed.[a]

Mr Boyle October 10. 57.

Stone

The paines of the Stone being so obstinate I cannot but once more recomend to you the frequent use of

Oile of sweet Almonds.

newly drawn without the assistance of heate. For I after many others have found it both to ease paine and carry of gravel.

WORSLEY to BOYLE — 14 October 1657

From the printed version in Birch (ed.), *Works* (1744), v, 630–1. Also printed in Birch (ed.), *Works* (1772), vi, 635–6.

Dublin, Oct. 14, 1657.

Dearest Sir,

I HAVE had the honour of two from you since my last coming into *Ireland*, for both which I have been somewhat too long, and too unjustly your debtor.[b]

I AM very glad of your success in the two experiments you mention about copper and antimony, though the former seems to be the more noble, the other being more familiar, if not by the same, yet by other menstrua.[c] But that of copper may perhaps be useful, if we can guess the ground of that rightly, and can reduce it unto or demonstrate it from some principles of nature. Though I should account it also much more useful and luciferous, if part of the copper, were so separated, and the

[a] This recipe from Boyle is preserved in a group of notes in the Hartlib Papers, and is almost certainly from a now-lost letter.

[b] These two letters from Boyle are not extant.

[c] See *Usefulness I*, in *Works*, vol. 3, p. 208.

rest of the body of it were some other definite and similar substance, than if the whole body be made inflammable.

FOR experiments, I have been able to make none since I came, but one or two œconomical about drinks; and about a more perfect way of conserving of green flowers and fruit, /p. 631/ than those I did the last year, by observing some error in the former.

FOR the plot, that was laid at the Rhenish wine-house, I look upon it like the story of *Columbus*, who having satisfied himself, was not discouraged in his attempt from the unusualness of the undertaking or difficulty he found in the entertainments of it; but waited with patience until a seasonable time to effect it.[a] And I am told, that this also, which you mention was there discoursed of, was not taken out of any old manuscript, or found by chance under an altar-stone obscured by a dark hieroglyphical character, which might be taken in I know not how many senses like the Delphick oracles.[b] But it is in part real experiment; the grounds of it solid; the law of it nature; the method of it certainty, or rather necessity. That it is not a thing framed in the will of any man, or upheld by the opinion of antiquity; but is a real door, a key, a light to things visible, and to the harmony between them and other things invisible. But the times, seasons, and opportunities for all things are in the hand and dispose only of the Lord.

YOU are pleased to mention a book lately come forth, endeavouring the reconciliation of the Dogmatist with the Helmontian, which I would be glad to receive your opinion further of.[c]

I AM much affected with the generality of your late contagious feverish distemper, but am able to offer little that is peculiar, having made no observations peculiarly of it. The best general remedy I have yet had an opinion of is your Radix Virginiana, which as it is an effectual and potent alexipharmacon against the virulent poison of the rattle snake or adder, so it is looked upon by some as one of the best simples of many to resist all contagious putrefaction. I think it however a safer and more innocent medicine than many other.

IF you thought that large letter worth the communication to our learned friend with you there at *Oxford*, I would be glad to receive something, that might offer a further occasion for discussion and debate, being no way tied to this or that opinion or expression I am,[d]

---

[a] The plot at the Rhenish wine house has not been traced.

[b] In classical times the Delphic oracle was the supreme oracle of Greece presided over by Apollo.

[c] This is likely to be an allusion to James Thompson's *Helmont Disguised* (1657). Nothing is known about Thompson's life.

[d] For Worsley's astrological tract, drafted in 1657, which circulated among members of the Hartlib circle see above, p. 226n. See A. Clericuzio, 'New Light on Benjamin Worsley's Natural Philosophy', in Greengrass, Leslie and Raylor, *Samuel Hartlib* (above, p. 138), pp. 236–46. It was eventually published in Boyle's *General History of Air* (1692); see *Works*, vol. 12, pp. 48–56. The identity of the 'learned friend' in Oxford (see also below, p. 244) is unclear.

Dear Sir,
your hearty affectionate servant,
B. WORSELEY.

HARTLIB to BOYLE — 8 December 1657

From the printed version in Birch (ed.), *Works* (1744), v, 270. Also printed in Birch (ed.), *Works* (1772), vi, 97–8.

December 8, 1657.

Honoured SIR,

LAST Thursday I sent divers letters, which I then received by the post, under my cover. This enclosed I had from *Saumur*.[a] I got also a short one from Dr. *Petty*, in these words: 'The resentment I had of the challenge, was not such, as to need so formal and troublesom an apology. To shew you, that I am not angry, or vindicative upon the gentleman, I will forbear noting several impossibilities in his contrivances of the dials to all the senses. When I am got clear of Mr. *Worsley*, I will have such another bout at learning, as shall both strain my abilities, and demonstrate my willingness to advance it. In which persuasion, I desire you and my friends to remain; for what I have been doing here is but to prepare me thereunto. This is the 12th letter I have written this night; wherefore excuse this brevity.'[b] Thus far the rich doctor. I have written to Mr. *Worsley*, that he would unriddle his meaning in that one passage. I have the dial, with most of the senses, in my possession, and therefore cannot but smile at his threatened impossibilities.[c] Mr. *Worsley* is expecting still some engagement upon his physico-astrological letter: but except I have an account from *Oxford*, upon the foresaid letter, I am forbidden farther communications.[d] Mr. *Mercator* writes something, which I know will not displease him: his words are these.[e] *Impositum est mihi judicium Genethliacon ex hora Nativitatis Domini mei junioris proferre, et credo aliquid veri subesse quoad temperamentum*

[a] The enclosure, now missing, was possibly from Henry Oldenburg in France. See above, p. 232n.

[b] For William Petty see above, p. 64n. Conflict between Petty and Worsley started in 1657, when the former replaced Worsley as Surveyor-General in Ireland.

[c] It is not clear what Hartlib means by 'dial' in this passage.

[d] For Worsley's astrological tract see above, p. 226n.

[e] Nicholas Mercator (1619–87), mathematician and astronomer, was born in Schleswig-Holstein and later settled in England. He became F.R.S. in 1666. Mercator translated Worsley's astrological tract into Latin, for which see above, p. 226n. and Mercator's letter to Hartlib of 24 Nov. 1657, HP 56/1/86A–B.

& constitutionem humorum; sed invenio antecessores astrologos rem pulcherrimam vanissimis commentis obscurasse, ideoque difficultate laboro ubique. Nam asseverare nihil volo, quod ratione certa stabilire nequeam & tuo socordiam priorum. Nam omnia hic (ut fere in cæteris artibus) ex fundamentis denuo sunt extruenda. Ego vero mallem etiam meum in aliis prius captis ponere, quæ interea delitescunt in pulvere. Atque hoc male me habet.[a] I received a special commission from Sir *Charles Culpepper*, who, presenting his humble service, entreated me most passionately to put you in mind of the promise you were pleased to make unto him, about the new invented plough of Dr. *Wilkins*.[b] He bids me to assure you, that if you can procure one for him, that you will lay a very great obligation upon him. I humbly beg, for my own use, the spirit of vegetables against fevers. Here you have a copy of Dr. *Horne*'s letter, which contains many considerable passages in it; on which if you would enlarge your's, the exchequer of the commonwealth of learning would be the richer.[c] Divers weeks ago I presented you with some demands of Mr. *Beale*'s concerning insects, which were principally intended for Dr. *Starkey.*[d] I have obtained an answer from some other good hand, which I thought fit not only to tender to Mr. *Beale*, but also to yourself, as you will find by one of the papers here adjoined. I should be glad to see, how you entertain either the divinity, or the philosophy of it. My pains are very tedious unto me, and much work lyes yet upon my hands; but nothing shall hinder me from subscribing myself,

Honoured Sir,
your ever faithful, and
most obliged servant,
S. HARTLIB.

SIR, Mr. *Dury* told me this morning, that he believes my lord *Broghill* is landed before this time in *England*.[e]

[a] 'I have been given the responsibility of casting a horoscope from the hour of the birth of my younger master; and I believe that it will have some truth in it as regards the temperament and the constitution of the humours. But I believe that those astrologers whose have preceded me have obscured this most excellent matter with the most vain commentaries, and for this reason I am labouring under difficulties on all sides. For I do not wish to assert anything that I am not able to establish with sure reasons, and I want to avoid the foolishness of previous practitioners. For all of the aspects of this subject (as is the case in nearly all the rest of the arts) must be rebuilt from the foundations. Indeed, I would prefer to place my upon other foundations that have previously been established, but which now lie hidden in the dust. And this fact causes me a good deal of trouble.' It is not clear whose horoscope he had been asked to cast.

[b] For Sir Cheney Culpeper see above, p. 63n. For John Wilkins, who was well known for his interest in agriculture and mechanical devices, see above, p. 144n.

[c] For Georg Hornius see above, p. 162n. Hornius's letter is not extant.

[d] Beale corresponded weekly with Hartlib from the mid-1650s until Hartlib's death in 1662. For George Starkey see above, p. 90n.

[e] For John Dury see above, p. 56n. Broghill's arrival in England was probably in connection with his nomination to the House of Lords by Cromwell in Dec. 1657.

BOYLE to HARTLIB before 31 December 1657

This lost letter is recorded in a letter from Hartlib to John Pell of 31 December 1657, British Library, Add. MS 4279, fol. 41.
Previously printed in R. Vaughan, *The Protectorate of Oliver Cromwell*, 2 vols (London, 1838), ii, 435. Hartlib introduces the extract with the words: 'Mr Boyle writes from Oxford:'.

The Universal Character Dr. Wilkins has now brought to that perfection that he is pleased to promise me some time next week to shew it to Dr. Ward and mee together, that it may bee jointly considered by us all, and if hee bee as wary in his affirmations about it as hee used to be about other things, I make no doubt but it will bee found extraordinarily ingenious, though I confess I yet distrust the practicablenes of it in divers cases.[a]

[a] For John Wilkins's work on a 'real ' or 'universal' language see Barbara J. Shapiro, *John Wilkins, 1614–72: an Intellectual Biography* (Berkeley and Los Angeles, 1969), pp. 207–23. Seth Ward, for whom see above, p. 204, was also working on a universal character in the late 1650s.

— 1658 —

Lost letters dating from 1658 are as follows:

Wotton's list (above, p. xxvii) includes the following:

No. 19 'Mr. Durie 58'. Boyle's correspondent here is evidently John Dury, for whom see above, p. 56n. This entry is annotated 'qu. an 78', 'query whether 1678'. Though this item is probably lost, it could refer to one of the extant Dury letters dealt with in Appendix 5 in volume 6.

Letters from the second Earl of Cork to Boyle are recorded in the second Earl's diary (above, pp. xxvii–xxviii) with the following dates: 2, 9, 27 January, 3, 26 February, 12 June and 23 November; with those of 2 January, 12 June and 23 November he enclosed bills of exchange. In addition, under 15 August there is a reference to a lost letter from Boyle to Broghill in which receipt of the first two of these bills was acknowledged. These payments related to an arrangement made between Cork and Boyle in 1654 and referred to in the diary under 22 January that year, whereby Boyle assisted Cork in providing a dowry for Lettice Digby on her marriage to William Dilke (d. 1669) of Maxstock, Warwickshire, an obligation imposed on Cork by his father, the first Earl. See Townsend, *Life and Letters* (above, p. 30), pp. 156, 235, 330, 482–3, 488.

Lost letters referred to in surviving letters are as follows:

Three letters from Boyle to Hartlib, one undated, and two dated 2 and 4 January 1658 (below, p. 247, 249).

Boyle to Jones, undated. Boyle's nephew mentions more than one letter from Boyle to him that appears to have gone astray (below, p. 256).

Boyle to Hartlib, 30 January 1658 (below, p. 250).

Boyle to Hartlib, after 14 April 1658 (below, p. 265).

Boyle to Hartlib, 22 April 1658 (below, p. 267).

Boyle to Hartlib, 24 April 1658 (below, p. 267).

Clodius to Boyle, before 27 April 1658 (below, p. 267).

Two letters from Hartlib to Boyle, 4 and 8 May 1658. The letter of 4 May also included an enclosed letter from Lady Ranelagh, which does not survive (below, p. 269).

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Boyle to Hartlib, 22 May 1658 (below, p. 274).
Hartlib to Boyle, 27 and 28 May 1658 (below, p. 276).
Boyle to Hartlib, 5 June 1658 (below, p. 281).
Hartlib to Boyle , 7 September 1658 (below, p. 291).
Clodius to Boyle, 11 September 1658 (below, p. 291).
Boyle to Hartlib, 11 September 1658 (below, p. 291).
Two letters from Hartlib to Boyle, week ending 11 December 1658 (below, p. 294).
Boyle to Hartlib, 14 December 1658 (below, p. 294).
Boyle to [Worsley], [late 1658] (below, p. 301).

HARTLIB to BOYLE — 7 January 1658

From the printed version in Birch (ed.), *Works* (1744), v, 270–1. Also printed in Birch (ed.), *Works* (1772), vi, 98–9.

January 7, 1657–8.

Honoured SIR,

THE posts not coming regularly, as they were wont to do, I did not get your last of January 2, till yesterday.[a] The foregoing to this, and which I have already answered, was dated December 28. I am hugely therefore troubled, that to this hour I have not yet seen your large letter, to which you refer yourself. The postage of letters are already paid by your last disbursements. I am glad, that at *Oxford* they are sensible of any reformation in learning. The former king of *Denmark* took the same course with the lectures of his publick professors, as you write hath been ordered of late at *Oxford*.[b] Last week I received a letter from the vice-chancellor of *Cambridge*; who was pleased to send me also the adjoined printed paper.[c] /p. 271/ The last Irish post brought a letter from Mr. *Worsley* to my son in these words.[d] 'I take very kindly your last to me, and that clear assurance you have given me of

[a] This letter, and the other two mentioned here by Hartlib are not extant.

[b] Christian IV (1577–1648), King of Denmark and Norway from 1588, gave impulse to the development of the University of Copenhagen, and was careful to exact declarations of faith from professors and watch their private lives. Hartlib is presumably referring to the reforms introduced by John Owen, Vice-Chancellor of the University of Oxford; see Blair Worden, 'Cromwellian Oxford', in Nicholas Tyacke (ed.), *The History of the University of Oxford. Volume 4, Seventeenth Century Oxford* (Oxford, 1997), pp. 744–5, 747.

[c] John Worthington (1618–71) was elected Vice-Chancellor of Cambridge University in Nov. 1657. The adjoined paper does not survive.

[d] For Hartlib's son and his connection to Benjamin Worsley see above, p. 229n. Worsley's letter, from which Hartlib quotes, has not been found.

your mindfulness and care in that business. This I do assure you, that the thing intended is so real, that if the council here do but please to give equal countenance to that, which they have done to others lately in their private concerns; the proposition will be made to (I judge at the least) ten thousand pound.[a] For I have in my hand already a considerable stock assigned by the donors, and a probability of securing near the whole sum within less than a month's time, the council giving the donors encouragement to go on. I took the freedom to write at large to you the last week, and to give you several arguments for its dispatch. But all these now need not at all to be enforced, the thing being so near to be sent; one thing only, as you see a just occasion for, I do think not inconvenient to take notice of, and that is, that Dr. *Clarges* is actually satisfied his ten thousand pounds, and captain *Arthur* his at six years purchase present value, being the utmost favour desired by the donors.[b] And I hope our friends on the other side will not be unmindful to suggest it here, by way of allowance of the justness and reasonableness of our proposal.' The letter is dated December 29. I think I told you already, that my son hath sent him copies of all, which was as this week to be transmitted in the originals. Since Monday, my son hath been so busy, that I have not been able to have a further account of him concerning this affair. Mr. secretary continuing ill, and not meddling with businesses, my lord *Fleetwood* had undertaken to get the letter to be signed by his highness to the council in *Ireland*, which was the only thing remaining to be done.[c] What Mr. *Worsley* writes unto me, you will find in the enclosed paper.[d] He concludes those real passages, with a complaint, as followeth. 'I have had a great mind to entertain you with a discourse or two upon some other subjects; but providence hath hitherto justled me out of these sedate purposes, by bringing in, and throwing some other exercises upon me; and such at present is his blessed will, to which I therefore desire willingly to submit.' Thus far Mr. *Worsley*. Some days ago, Mr. *Smethwick* told me, that he had gotten at last Dr. *Lake*'s new invented water hour-glass.[e] He said, that he had tried it already above fourteen days, and found it so accurate, that it excels all the watches or clocks whatsoever. In a word, he counted it an exceeding great rarity, the like never hath been yet brought to perfection in that kind. I am acquainted with the doctor himself, (a

[a] The council referred to is the Council of Ireland. Worsley played an active role to in securing the sale of debentures in fulfilment of the Rand–Eccleston project. See above, p. 229n., and Turnbull, *H. D. & C.*, p. 55.

[b] This is a reference to Sir Thomas Clarges (d. 1695), physician and politician. Captain Arthur is evidently Arthur Clarges (dates unknown).

[c] Hartlib refers to the Secretary of State, John Thurloe (1616–68). For Charles Fleetwood, Lord Deputy of Ireland, see above, p. 229n.

[d] Neither the enclosure Hartlib alludes to, nor his letter from Worsley, is extant.

[e] The reference is probably to Francis Smethwick, instrument maker and F.R.S., for whom see Michael Hunter, *The Royal Society and its Fellows* (Oxford, 1994), p. 73, and vol. 4, p. 39n. The Dr Lake in question is probably Sir Thomas Lake, F.R.S. 1667 and knighted 1670. His invention and his connection to Strafford have not been further identified.

civilian) who is now going for *Ireland*, to exercise husbandry; being entrusted by the lord of *Strafford* with his lands and possessions there.[a] He told another friend of mine, that he would willingly bestow one of his clepsydras upon me, but that he counted it no better than a trifle. But for all this, I do not despair of getting one of them, either sooner or later. Mr. *Beale* was the first man, that discovered *Norden* of *Bristol* unto me, with his invention of clepsydras; but since he hath advertised, that it will require some time to get one from thence.[b] It may be, Sir, you have a greater interest there than any of us. I remember also, that in former years, Dr. *Gauden* was very busy about measuring of time this way.[c] I long to hear more particulars of Dr. *Wilkins*'s philosophical character.[d] Mr. *Comenius* hath sent lately to Mr. *Dalgarno* his idea of it; but it is so short and general, that it is not worth the imparting. Sir *Charles Culpepper*, though he be out of town, yet I know no ploughman can be so greedy of his meat, as he is after that invention.[e] He begged not so much a scheme, as a mechanical model of it, or the thing itself, promising most willingly to pay for it.[f] You speak still of the German vacuum, as of no ordinary beauty; but the poet says, *Uritque videndo fœmina*.[g] Just now I received another from you, dated January 4, referring me again to your large letter; but I having never gotten any such letter, (as I told you also in the beginning) my mind is not a little tormented with the miscarriage, or so long a delay of it.[h] Hath it not been left behind at *Oxford*? I cannot remember, that any of mine, or of my friends, have thus been dealt withal by our inland posts. It must certainly be some mistake, or other. The amorous person is gone into *Cheshire*, for two or three weeks: his father

[a] This is a reference to Sir William Wentworth (1626–95), 2nd Earl of Strafford, F.R.S. Lake's property in Ireland has not been identified.

[b] Norden of Bristol is unlikely to be John Norden (fl. 1600), surveyor; more probable is Robert Norton (fl. 1590–1635), mathematician, for whom see Webster, *Great Instauration*, pp. 412–13.

[c] Hartlib probably refers to John Gauden (1605–62), chaplain to the Earl of Warwick and Bishop of Worcester. See Webster, *Great Instauration*, p. 412–13.

[d] John Wilkins's *Essay towards a Real Character and a Philosophical Language* was in progress at this time but was not printed until 1668. Discussions of projects of philosophical language and Hartlib's encouragement of them are documented in the Hartlib Papers. See Slaughter, *Universal Languages* (above, p. 52), pp. 157–74.

[e] Hartlib refers to Jan Amos Comenius (for whom see above, p. 194n.), with whom he had corresponded since 1632. See Turnbull, *H. D. & C.*, pp. 342–449. For George Dalgarno see above, p. 232n. For Sir Cheney Culpeper see above, p. 63n. His interests in universal languages date from 1646. In letters to Hartlib of Dec. 1657 he had expressed some reservations about Dalgarno's schemes. See V. Salmon, *The Study of Language in Seventeenth-Century England* (Amsterdam, 1979), p. 163.

[f] Dalgarno's discovery of universal character was published in Nov. 1657. It is likely that this is the object of Culpeper's interest. See Slaughter, *Universal Languages*, p. 121.

[g] The German experiments on vacuum here referred to are those of Otto von Guericke (1602–86), Councillor to the Elector of Brandenburg, which were performed in 1654–5, and reported in Gaspar Schott's *Mechanica hydraulico-pneumatica* (1657). See Frank, *Harvey* (above, p. 66), pp. 128–9. In Dec. 1658 Boyle was still waiting to read the book. Hartlib quotes from Virgil's *Georgics*, III. 215, 'For the sight of the female inflames…'

[h] The first of these letters is missing. See above, p. 247n.

seems now to be more willing to condescend to his desires.[a] But, I say again, I have not received the recipe of the wound-drink. Monsieur *Kratshmer*'s (that is the German's name, of whom I spake in my former) medicine against the stone is certainly most excellent, and absolutely the best, that ever I have used.[b] But I have already spent all, so that a few drops more are only left. He hath revealed the recipe to *Clodius*, and offers to assist and dispatch the preparation of it. But, to my very great perplexity, *Clodius* is again in such a labyrinth, that he will be forced to break his ovens, and to remove to another house, which also is a new kind of undoing of him. I have obliged the gentleman thus far, that if you were in town, I could prevail with him to shew you all along the making of that most singular medicine, which Clodius also, from the authority of it, must confess to be truly transcendent. However, I do here engage myself, that you shall be made partaker of the true and full recipe of it in due time. For I have a very great and cordial respect to prevent, by the blessing of God, those torments in yourself, which I have endured these many months, for want of so powerful and blessed a medicine, handed over by an extraordinary providence. My lord *B** and my lord *Barrimore* are expected in town this day, but I can learn nothing more of my lord *Broghill*.[c] I remain ever,

SIR, your humble servant,
S. HARTLIB.

HARTLIB to BOYLE — 2 February 1658

From the printed version in Birch (ed.), *Works* (1744), v, 272–3. Also printed in Birch (ed.), *Works* (1772), vi, 100–1.

February 2, 1657–8

Honoured SIR,

THE extremity of the frosty weather doth greatly increase my wonted torments. But having some little intermissions, I cannot bestow them better for the present,

[a] Evidently the person referred to here is William Brereton for whom see above, p. 160n. Brereton is reported as being resolved to marry in a letter from Hartlib to Boyle, 27 Apr. 1658 (below, p. 263). His wife was Frances Willoughby (d. 1680). The date 21 Aug. 1658 is given for the marriage in the fictitious *Diary of Lady Willoughby*, ed. H. M. Rathbone (1844).

[b] Frederick Kretschmar, physician and diplomat from Brandenburg, was in England in 1657–8 as part of an embassy to Cromwell to get support for Silesian and Polish Protestants. See *CSPD*, 1658–9, p. 76. Dury, Kretschmar's assistant in this matter, visited Cromwell on 22 Jan. 1658.

[c] It is not clear who *Lord B** might be, unless Hartlib is referring to Lord Broghill; this seems unlikely, given the subsequent reference to him. For Richard Barry, 2nd Earl of Barrymore, see above, p. 27n.

than by acknowledging the receipt of your last *January* 30, with the enclosed to Dr. Secretary, which I shall superscribe and send away by the post this night.[a] Mr. *Worsley* sent me a big packet yesterday, but when it was opened, there was not a word unto myself, but another packet within addressed to my son *Hartlib*, with whom I have not been able to speak this day.[b] It may be he hath been informed, how near I have been to the land of forgetfulness; yet I received another letter from him last week, dated *January* 20, wherein he entertains me with a large theological discourse concerning Prophecies, but concludes as followeth.[c] 'For that of the malt-drying here, they do steep it about 24 hours, they spread it thin in the drying of it, having upper floors to lay it upon, through which the wind freely passeth, if there be any stirring. They dry it indifferently at any season, though in the most temperate season they can dry most at a time; but they do it well enough all the winter. The other friend, that is like to give you a visit, would think a man much a fool, that would serve any man besides himself, or otherwise, than in order to himself, being a wisdom common to this world.[d] [And that honest man he means him, to whom your letter is to be sent][1] you have so often taken occasion to mention and desire my resolution of, is doubtless such a wise man, and so as in that wisdom all his whole security is placed. And to all such it is as real a gospel-saying, as it is a law-saying, *De non apparentibus, et non existentibus, eadem est ratio*.[e] But the apostle tells us a better rule, faith is the evidence of things not seen.[f] Pray present my service to Mr. *Boyle*, and tell him, I am truly his servant, yet I have not writ to him, partly in expectation weekly, that I should receive those papers from *Whitehall*, which are not yet come; partly by reason of a crisis some affairs of mine here are under, which hath lately engaged, and will for a while take up more of my time.'[g] Thus far he: monsieur *D.* was pleased to tell me (but this must not be known abroad) that though he be displeased, yet that he is to enjoy, if not all, yet some of the benefits of it, at least two hundred a year.[h] And if this should not be

[a] Neither Boyle's letter to Hartlib of 30 Jan., nor his letter to John Thurloe, is extant. Inexplicably, Hartlib refers to the Secretary of State, John Thurloe, as 'Dr'. For Thurloe see above, p. 248n.

[b] Worsley's packet for Samuel Hartlib junior has not been found. For Samuel Hartlib junior and his connection to Benjamin Worsley, see above, p. 229n.

[c] Presumably Hartlib's allusion to the 'land of forgetfulness' is a reference to a period of illness he suffered. See Turnbull, *H.D. & C.*, p. 21. For Worsley's discourse on prophecies see Worsley to Hartlib, 20 Jan. 1658, HP 33/2/11A–12B.

[d] This person has not been identified.

[e] 'Concerning things that are not apparent, and things that do not exist, the same reasoning applies.' For the legal maxim, 'That which does not appear will not be presumed to exist', see H. Broom (ed.), *A Selection of Legal Maxims* (10th edn, London, 1939), p. 99.

[f] Worsley quotes Hebrews 11, 1.

[g] Cromwell lived at Whitehall from Apr. 1654 until his death. No such papers appear to survive in the Hartlib Papers.

[h] Hartlib probably refers here to John Dury, whose information about Worsley is to the effect that although Worsley had recently been deprived of the position of Surveyor-General of Ireland, he was still in the pay of the government.

so, yet I shall never change my judgment to count him far more happy in serving that more general survey of all God's glory, and the God of human kind. For this is the honesty of that business, which will not be without signal providences, and special acquisitions and enjoyments better than *Dublin* or *Ireland* can afford. I shall not be wanting to obtain that secret, which hath been imparted to Mr. *Milton*.[a] It may be the publick gentleman, that sent it unto him, will let me have a copy, in case the other should not come off readily with the communication of it.[b] But if yours would ask it from Mr *Milton*, I am confident he would not deny it. My son *Clodius* tells me, the German physician, of whom I wrote before (*Kratshmar*) is a rare man for chemistry and physical knowledge and experience.[c] And though he is not very willing, that I should be admitted to any of his arcana, yet I believe the gentleman himself will hardly conceal any thing from the crazy and afflicted creature. Mr. *Morian* did promise me not long ago a few doses of *Glauber*'s universal medicine, but that he put too high a price upon it, at least his purse could reach unto it. I dare not crave it from Mr *Morian* for a secret reason.[d] For having shot an arrow of charity at random towards *Zurich*, it lighted upon our resident there Mr. *Pell*, who hearing of his very low condition, and to have been assisted with 3 l. sterling, by Dr. *Van Mussig*, ordered, that the sum of 10 l. sterling, should be made over to that worthy man out of the pension, which the state doth pay him quarterly.[e] But this being subject to many delays, Mr. *Haak* undertook in the mean time the paying of him by bill of exchange, which last week he acknowledged to have received.[f] Now if I should beg a few doses of the Glauberian medicine, Mr *Morian* might happily think, that I desired to be gratified this way; which truly is far from my spirit and intentions. But I am confident, if I should venture such a request upon him he would certainly pay for the medicine whatever it should cost, out of those supplies, which have been procured, by the blessing of God upon my hearty recommendations. Therefore I shall a little defer this matter, and wait for some other opportunity. As for Dr. *Bonet* I have his express engagement and promise, that as soon as his *omnium morborum curativum* is brought to perfection (which he hopes will be done within a few weeks,) I shall have many doses of it, which I shall instantly

[a] This is a reference to John Milton (1608–74), poet and Latin secretary in the Cromwellian government.

[b] The 'publick gentleman' has not been identified.

[c] Frederick Clodius was Hartlib's son-in-law. For Frederick Kretschmar see above, p. 250n.

[d] For Johannes Moriaen see above, p. 66n. For Johann Rudolph Glauber see above, p. 114n.

[e] For John Pell see above, p. 179n. Pell was Cromwell's agent in Zurich from 1654 to 1658, with the aim of drawing cantons into a Protestant league led by England. Moriaen was in a 'low condition' because of the poor state of his finances. See Young, *Faith, Medical Alchemy and Natural Philosophy*, (above, p. 69), pp. 48–9, 58–62, 230–31. For Johann Brün or Unmussig see above, p. 158n.

[f] This is a reference to Theodore Haak (1605–90), a German Calvinist who settled in England in 1638. Haak had been a correspondent of Hartlib's since 1635, and was instrumental in establishing contacts between the Hartlib circle and Europe.

certify you of as soon as I have received them.[a] Any thing, that can be imparted for general good, for keeping of poultry, or the artificial discoveries of hatching of chickens, will be very welcome to my hands. Mr. Vice-chancellor of *Cambridge* (Dr. *Worthington*) pleases me not a little by writing in his last. – 'We have divers fellows of colleges, who have made excellent progresses in anatomy of several kinds of creatures, and have some observations peculiar.[b] They have also much travelled in botanicks, and have got together many hundreds of plants in several gardens here. Some, that are rare, and for which they have been sent to from those, that profess great knowledge. They intend to publish a Phytologia of such herbs as are within ten miles of *Cambridge*, which they have often travelled, and found some not mentioned in other herbals.[c] And for the names of herbs in the Phytologia Britannica, and other herbals, they have found many errors, which have been propagated from one book to another; and they judge /p. 273/ it a good service to restore them to their own true names.'[d] Thus far of experimental learning at *Cambridge*. By the adjoined narrative of the life and death of that late incomparable universal scholar at *Hamburg*, you will oblige, it may be, divers of the *Oxford* worthies, Dr. *Ward*, Dr. *Wallis*, if not also your whole philosophical club.[e] The other paper is worthy to be taken into their serious consideration. But I beg, that the most intimate and friendly passages (which are only poured into my bosom) may be concealed. I have received, and almost distributed your packet with Mr. *Austin*'s books, and shall study the like real thankfulness.[2f] Mr. *Brereton* writes in his last, *January* 30. – 'If Mr. *Boyle* be come to *London*, I pray you present my most humble service to him, and let him know, that I hope speedily to have something for him worthy his knowledge, but as yet I have not; which is the cause he hath not heard from me.'[g]

[a] For Andreas Nicolaus Bonnet see above, p. 199n. The Latin can be translated as 'cure for all diseases'; in Hartlib to Boyle, 8 Sept. 1657 (above, p. 232n.), Hartlib calls this medicine *multorum morborum curativum*.

[b] For John Worthington see above, p. 247n. Worthington's letter to Hartlib is not extant.

[c] Worthington doubtless refers to John Ray (or Wray) (1627–1705), naturalist and fellow of Trinity College, Cambridge. See C. E. Raven, *John Ray: Naturalist* (Cambridge, 1986). The work on Cambridge flora is *Catalogus plantarum circa Cantabrigium nascentium* (1660). Ray's botanical tours began in 1658 and it is likely his Cambridge colleagues and naturalist Francis Willughby (1635–72), Peter Courthorpe (1639–1724), Henry Power (1623–68) and Fellow of Trinity John Nidd (d. 1659) joined in his activities: Ray travelled abroad in the 1660s with Willughby. See Raven, *John Ray*, p. 82 and Webster, *Great Instauration*, pp. 150–1.

[d] The reference is to William How, *Phytologia Britannica* (1650). For other herbals, see B. Henrey, *British Botanical and Horticultural Literature before 1800*, 2 vols (Oxford, 1975), i, 80–118.

[e] Hartlib refers to Joachim Jungius (see above, p. 173n.), who died in Hamburg on 23 Sept. 1657. The *Historia vitae et mortis Joach. Jungii* (1658), was the work of Martin Vogel (1634–75), MD in Hamburg. Also referred to here are Seth Ward, Savilian professor of astronomy at Oxford since 1649, for whom see above, p. 204n., and John Wallis (1616–1703), Savilian professor of geometry in Oxford since 1649. For the Oxford Philosophical Club see Frank, *Harvey* (above, p. 66), pp. 51–89.

[f] This is presumably a reference to Ralph Austen's *A Treatise of Fruit Trees*, the second edition of which appeared in 1657, and *Observations upon some part of Sir Francis Bacon's Naturall History* (1658).

[g] Brereton's letter to Hartlib of 30 Jan. 1658 has not been found.

– My son Clodius is removing this very day to another house in *Axe-yard*.[a] Mr. *Stroud* is come up to *London*. My lord Protector sent him a horse worth 150 l.[b] My son excuses himself, that he cannot come at me. My lord Protector's speech is so full of high and particular reflections, that the printing of it is denied, though the parliament has desired the same.[c] A copy of it was sent by Mr. Secretary to the Swedish ministers here.[d] The houses cannot yet agree, but are in great disorder. If they continue so, it is apprehended they will shortly be dissolved.[e] Just now my son comes to shew me Mr. *Worsley*'s last letter, whereof you shall find an extract here adjoined.[f] By it you will see, more seconding letters of recommendation being called upon, how seasonably yours will come to Mr. Secretary.[g] Thus I rest ever,

Honoured Sir,
your most willing faithful servant,
S. HARTLIB.

PETTY[h] to BOYLE — 17 February 1658

From the printed version in Birch (ed.), *Works* (1744), v, 298–9. Also printed in Birch (ed.), *Works* (1772), vi, 139–40.

Feb. 17, 57.

SIR,

WHAT you heard of my being secretary to his Excellency and clerk of the council, is too true; for I never lived a more miserable life than now.[i] I hope the meaning is, to try the ethics I discoursed of so at random in a former letter. I have not, amongst all my intelligence heard better news, than that the club is restored at

[a] Samuel Hartlib junior lived in Axe-Yard, Westminster.

[b] This is possibly Thomas Strode (fl. 1642–88) of Shepton Mallet, mathematician. See Mordechai Feingold, *The Mathematician's Apprenticeship: Science, the Universities and Society in England, 1560–1640* (Cambridge, 1990), p. 65. Strode's connection to Cromwell has not been elucidated.

[c] This is probably Cromwell's speech of 25 Jan. 1658, which was not printed. See S. C. Lomas (ed.), *The Letters and Speeches of Oliver Cromwell, with elucidations by Thomas Carlyle*, 3 vols (London, 1904), iii, 502.

[d] For Secretary John Thurloe see above, p. 248n. One of the Swedish ambassadors in London was Christian Bonde. See Turnbull, *H. D. & C.*, p. 277, n. 4.

[e] A reference to the dissension between the Commons and the House of Peers in Jan. 1658. On 4 Feb. 1658 Cromwell dissolved the Parliament.

[f] This enclosed extract is not extant.

[g] Hartlib's meaning here is not clear.

[h] For William Petty see above, p. 64.

[i] Henry Cromwell appointed William Petty his private secretary and additional clerk to the Privy Council.

Oxford.[a] I hear likewise, that infusio croci metal. has been injected into a live animal's blood, without any notable alteration.[b] It were good to try the same with opiate liquors, and other of notable and sensible vertues. When I desire the club to try these things, I do not excuse myself; but would be glad they should undertake it, that it might be thoroughly done. I received your commands (concerning a design, which colonel *Zankey* only appears in here, and in which only Mr. *James Rand* and Mr. *Eccleston* are named) which I shall obey, upon your account;[c] for, until you had written, I understood little of the thing; and therefore for me (who ought *non nisi pauca & benè cognita coram principibus loqui*) to appear much, before I had a better warrant, was not so suitable to my way.[d] I had letters from Mr. *Hartlib* not long before, but without any mention of this affair; nor could I guess, but by his superscribing your letter, that he had any hand in it.[e] For it is possible, some plagiary might have made use of the paper, which nine years since I left with him comprehending this whole design; for I could not believe he would think me disaffected to what I formerly so much tendered. But I fear some enemy hath sown tares. However, as for what lyes in me, I shall be industrious to get the allowance settled, and no less vigorous, that it be duly employed, both as to the main end, and to the encouragement of the best particular deservers; for the riches of one man (who drinks but as he hath brewed) shall not stir me against any publick good, although, since I have been in this nation, I have studied those definitions of publick, &c. and have observed the nature of their non-miraculous degenerations.[f] Dear Sir, I wish I had the opportunity to make you understand the state of some things; till when, suspend your judgment of me. I think I can demonstrate the /p. 299/ causes and necessity of the most malign action I am taxed with; wherefore I beg you to let me be (as we say, though but *de bene esse*)[g] reckoned amongst your true and faithful servants, for such is

W. PETTY.

[a] For the Oxford Experimental Philosophical Club see Frank, *Harvey* (above, p. 66), p. 51–89. It is not clear to what 'restoration' Petty refers.

[b] In 1656 Christopher Wren had injected a dog with two ounces of an infusion of crocus metallorum, an emetic. See Frank, *Harvey,* p. 171.

[c] Colonel Sankey has not been traced. James Rand, a London apothecary and Richard Eccleston, an Excise Office official; for the Rand–Eccleston project see above, p. 229n.

[d] i.e., 'not to speak before princes, except of things that are few and well-known'.

[e] For Hartlib's connection to the Rand–Eccleston project for buying up debentures for arrears due to officers and soldiers in Ireland, see above, p. 229n.

[f] Presumably this cynical remark is an allusion to Benjamin Worsley. Dissension between Petty and Worsley was one of the reasons for the scheme's failure.

[g] Lit., 'from being well'.

OLDENBURG to BOYLE 19/29 March 1658

From the original in Early Letters OB 4. 4°/1. A draft survives in R.S. MS 1, fol. 33v. Early Letters OB 4 also includes a copy of the letter with the first lines missing, beginning 'your nevew', in the hand of Miles (fol. 1).
Previously printed in Birch (ed.), *Works*, (1744), v, 301, Birch (ed.), *Works*, (1772), vi, 143 and *Oldenburg*, i, 155–6.

Sir,

[1]We are both not a little troubled at our unhappines of never ‹having› heard[2] from you since ‹your[3] letter of› the 2d of Sept. which, not long after the receipt thereof, we ‹both› gave you thanks for, and withall acquainted you with our condition at that time;[a] your nevew having also waited on you since with another letter, and being, together with myselfe, extreamly coveting to receave some good news of your health and welfare: which if you shal please to gratify us with, we[4] intreat you to send it only, as formerly, to Mr Hartlib,[5] who hath order to direct henceforth those letters, that concerne us, to Geneva, where I have a friend, that will not faile to dispatch them to me wheresoever I ‹shall be›[6] in Germany: which I thinke will be the Country for our Summer-station, because likely to be the Theater as of a great solemnity, so of other considerable transactions.[7b] But no appearance, I think, to make afterwards an excursion into Italy, and thence to bring you news of the Industrious Kirchers Subterraneous World,[8c] his strange Grotta de' Serpi; his story of the growth of[9] pulverised and sowne Cockles irrigated by sea-water; his Thermometre by a wild-oat's-beard; his vegetable phænix's resurrection out of its owne dust by the warmth of the Sun; his pretended ocular confutation of Keplers magnetical motions of the Planets about the Sun, and of Gilberts magneticall motion of the Earth, and of twenty other remarquable things, one might[10] have the satisfaction to be ‹punctually› informed about,[11] if our friends did not think to have reason to dissuade us from that voiage; wherein we ought to acquiesce, if they still judge them important enough to hinder it.[d] In the interim,[12] what particular inquiries you think in Germany may be made of us

[a] Boyle's lost letter to which Oldenburg refers here and in the postscript was written on 2 Sept. 1657.

[b] Oldenburg's friend in Geneva has not been identified. In the summer of 1658 the great events in Germany were the election of the Holy Roman Emperor in July, and the preparations for the formation of a new league of states (15 Aug. 1658) involving negotiations with France.

[c] Athanasius Kircher (1602–80), Jesuit natural philosopher and professor of oriental languages at Würzburg and later at Collegio Romano. These ideas, which were to be published in full in his *Mundus subterraneus* (1665), were initially divulged in his *Iter exstaticum II qui & mundi subterranei prodromus dicitur* (1657). The 'vegetable phoenix' is referred to in *Works*, vol. 8, p. 302.

[d] Johann Kepler (1571–1630), the famous German astronomer, formulated a theory of planetary motions as produced by a force similar to magnetism originating from the sun. William Gilbert (1540–1603), applied his study of terrestrial magnetism to explain the earth's diurnal rotation in the 6th book of his *De magnete* (1600). Kircher attacked Gilbert's and Kepler's views of magnetism in his *Magnes, sive de arte magnetica* (Rome, 1641), pp. 540–77

about philosophical experiments, I intreat[13] you be pleased to give in your next a hint at; and, to conclude, doe not think it a trouble to advertise us, what succes that promotion of learning hath, for which the Counsell did formerly[14] grant your desires,[a] if he mistake not, who is

Sir
your obliged and very humble servant
Saumur the 29 Mars 1658. H. O.

The same author hath been a viewer of Vesuvius: and in a terrible earth-quake for 14 dayes in Calabria, AD 1638.[15]

[b][...] letter of yours for Mr [...] and therein the desired good news of your health, but signifying withall your having missed a packet of ours, wherein I had sent to you a receipt, which I got from an italian, that teacheth in this towne fortification;[c] ‹which[16] not knowing, whether you had it already ‹or no› I ventured to send[17] to you; ‹being› such as you'l find it over against this:[d] It may be of good use for to write encouraging letters to besieged towns with hidden promises of succours, written by unseen white characters, and those written over by black ones of quite another sense from the white ones: which the besiegers, if the messenger shoulde fall into their hands, will easily let passe, but the besieged with the water, mentioned in the receipt, will blot out and make appear, what concerns them and their relief.[e]

Endorsed by Miles at head of his copy page 'NB. The beginning mutilate', with Miles' crayon number 'No. IV' and ink number '4'. Birch number 'No 3' deleted on 4 (1)v at foot of page.

RICHARD JONES[f] to BOYLE 20/30 March 1658

From the original in BL 3, fol. 97. 4°/1.
Not previously printed.

[a] Oldenburg refers to the petition to the Council of State for the 'Advancement of Universal Learning'; see p. 240n.

[b] This (damaged) text, on OB 4 (1) recapitulates part of the text of Oldenburg to Boyle, 12/22 Sept. 1657 (above, p. 239). It is not given in MS 1 draft.

[c] For the Italian teacher of fortification, see above, p. 239n.

[d] The rewritten recipe is clearly missing from this letter, which must have originally been 4°/2 before its mutilation.

[e] For the unidentified Italian's invention see p. 239n.

[f] For Jones, Boyle's nephew, see above, pp. 75, 205.

[1]Saumurs Mars 30me S.N 1658

Mon tres-honoré et tres-cher Uncle,

Vos dernieres sans date de temps et de lieu me donnerent à entendre la perte des deux des nostres: dont je ne sçaurois que m'estonner veu le soin que Monsieur Hartlib nous assure qu'il prend pour les vous envoyer.[a] Neantmoins esperant que celles-cy seront plus heureuses, que celles-la, je ne sçaurois m'empescher de vous reiterer mes tres-humbles reconnoissances des faveurs, dont je vous suis infiniment redevable[2], et de vous rendre conte du commandement, dont vous me chargeastes envers Mons[ieu]r Oldenbourgh, qui vous envoye par celles-cy encore une fois la recepte perdüe l'autre fois.[b] Monsieur, Je vous suis tres-obligé pour la peine, que vous avez prise de m'apprendre la bonne santé de ma mere et de mes autres amis: mais bien affligé des tristes nouvelles de la mort de Monsieur Lawrence.[c] Quant à ce qui est de nous, Je vous diray, que, Dieu mercy, nous sommes tousjours en bonne santé, laquelle j'employe entre autres choses à poursuivre au possible mes estudes, et en particulier à lire les oëuvres de nostre excellent compatriote, le Seign[eu]r Bacon, dont j'ay un petit espluché le Novum Organum, lequel certainement a un but aussi advantageux à la societe du genre humain, qu'il est difficile à en venir à bout.[d] Car, de deprendre les hommes de leurs vaines speculations, abstractes des

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Saumur, 30 March 1658, new style.

My most honoured and dear Uncle,

Your last letters, indicating neither date nor place, led me to understand that two of ours have been lost, at which I cannot but be surprised given the care with which Mr Hartlib assures that he sends them to you.[a] Nevertheless, hoping that these will be more fortunate than the others, I cannot prevent myself from repeating to you my most humble gratitude for your favours, for which I am infinitely obliged to you, nor from giving you an account of the commission with which you charged me concerning Mr Oldenburg, who is sending once again in this letter the recipe which was lost last time.[b] Sir, I am very grateful for the trouble you have taken in informing me of the good health of my mother and my other friends: but I am very sorry at the sad news of the death of Mr Lawrence.[c] As for our own affairs, I can tell you that, God be thanked, we are still in good health, of which I am taking advantage, among other things, to pursue my studies as far as possible, and in particular to read the works of our excellent fellow countryman, Lord Bacon, of whose *Novum organum* I have read a small part most carefully, and whose aim is certainly to the advantage of human race, but which is hard to achieve.[d] For, to deprive men of their vain abstract speculations

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[a] Boyle's 'last' letters to Jones are not extant. Samuel Hartlib was evidently acting as intermediary between Boyle and his nephew.

[b] Henry Oldenburg was Jones's tutor and escort on his European tour. Oldenburg and Jones had left England early in May 1657. Hartlib received a letter from Saumur, probably from Oldenburg, in Dec. 1657 (see above, p. 243).

[c] Jones refers to his mother Katherine, Lady Ranelagh. Edward Lawrence (1633–57) was the son of Henry Lawrence, who was later Lord President of Cromwell's council in Ireland. Like Jones, Edward Lawrence had been a pupil of Henry Oldenburg's, see *Oldenburg*, i, 31.

[d] The reference is to Francis Bacon's *Novum organum* (1620).

choses; et les rendre plus familiers avec la nature mesme, comme elle se trouve creée de Dieu; et d'en tirer une histoire universelle, qui puisse abondamment fournir de la matiere pour en bastir des Axiomes Philosophiques comme des fondemens, sur lesquels on construiroit[3] par apres une Philosophie reelle, aporteroit sans doute de tres-grandes utilités à la societe humaine, et leur remettroit en grande partie en main l'empire sur les creatures, qu'ils[4] ont autrefois perdu; au lieu de ces bagatelles et inutiles disputes, dont celle, qui a la vogue dans les escoles, est miserablement rapelasseé. Mais ce dessein comme il est tres-recommendable,[5] ainsi requiert il l'industrie de toutes sortes de gens, estant vrayment[6] un thresor publie, qui va à affranchir les hommes de l'esclavage de l'ignorance, à laquelle ils se sont assujettis; et qui manque grandement de personnes de vostre sçavoir et merite, pour le mettre en execution: Je me flatte de l'esperance, qu' à mon retour je trouveray nos pieces, qui tendent au mesme[7] but, accomplies, et que j'auray ce bonheur d'en estre fait participant, comme

Mon tres-honoré et tres-cher Uncle
Vostre tres-obligé Neveu
et tres-humble Serviteur
R. Jones

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concerning the world, and to make them more familiar with nature itself, as God has created it, and to make of it a universal history, which may provide abundant material from which to construct philosophical maxims which serve as a basis for the subsequent construction of a true philosophy, would certainly be of great use to human society, and would go a long way to giving men power over living creatures which they would otherwise have lost, in place of these trifles and useless disputes, wretchedly patched together, which are the fashion in the universities. But this plan, while it is highly recommendable, also requires the work of all sorts of people, being truly a public treasure, which will go so far as to free men from the slavery of ignorance to which they are bound, and there is a great lack of people of such knowledge and merit as your own, to put it into operation. I flatter myself with the hope that on my return I shall find accomplished the works which you destine for the same purpose, and that I shall have the happiness of being allowed to participate in them as,

my most honoured and most dear uncle,
Your most grateful nephew
and most humble servant,
R. Jones.

[8]Je vous supplie, Mon Uncle, d'assurer mes Cousins et les Docteurs d'Oxford de nos tres-humbles services.[a]

A Monsieur
Monsieur Robert Boyle à
Oxford

I beg you, my Uncle, to assure my cousins and the Doctors of Oxford of our most humble services.[a]

To
Mr Robert Boyle at
Oxford

Seal: Broken in two (one obscured by paper). Circular shaped shield: *paly of seven* [?] *on a chief three* [?] *cinquefoils*.

HARTLIB to BOYLE — 8 April 1658

From the printed version in Birch (ed.), *Works* (1744), v, 273. Also printed in Birch (ed.), *Works* (1772), vi, 102.

April. 8, 58.

Honoured SIR,

HOPING you are safely arrived at *Oxford*, I present these enclosed, which came yesterday to my hands, without a word to myself. I beseech you, if there be any better (or worser) news concerning our common friend, or the honest business, to give me notice of it by the next return of the post.[b] It seems, you forgot to deliver those papers, or extracts out of authors, concerning an artificial way of hatching of

[a] Jones probably refers to his cousins Charles and Richard Boyle, sons of the 2nd Earl of Cork, who were at Oxford at this time. He also presumably alludes to his cousins' tutors.

[b] No enclosures survive. It is not clear to whom Hartlib refers when he writes of 'our common friend'.

chickens, which you more than once promised unto me.[a] Our resident from *Zurich* writes as followeth.[b] 'Here you have what I wrote upon occasion of that of Mr. *Beale* from *Hereford*, Jan. 18.[c] I long to see that discourse concerning English crabs and wild pears, and the way of ordering those despised fruits, that their juice may be raised to excel the wines of *France*. Some parts of *Helvetia*[d] are full of vineyards, yielding great store of unpleasant white-wine, or claret. In other parts of the country, the vines are killed by frosts and nipping blasts from the snowy mountains. There they drink water, or whey, or milk; which makes them larger limbed and taller than their neighbours. Many places are full of wild cherry-trees. One sort, which is small, black and sweet, is dried and kept in great chests, in every country house, for the use of the table, all the year. Some gather more than their family can eat in a year, because they can distil a strong aqua-vitæ out of them, which they sell in the market towns and cities. In the landgravate of *Turgow*[e] they make great store of perry, of a sort of very small pears, which, as I have heard, are hard and full of very unpleasant juice, so that no man will eat one of them raw. But some boil them, and, with I know not what cookery, make a dish, to help furnish a table. Some tell me, that the Turgow-perry is of two sorts. The one boiled to the height of a syrup, so that it becomes almost as thick and as sweet as honey. The other sort unboiled, and pretty clear. In other places of *Helvetia*, the boors make drink of the wildest apples, as well as of wild pears, calling them by the name of must; perhaps because it always keeps a sweet taste, somewhat like to that of new pressed wine. But those boors seldom sell any of this must, keeping it for their own palate, being content, that the citizens should despise it, as drink for clowns; though some think, that now and then it proves better drink, than can be made of the best grapes in that country. Also *Glauber* hath told us, what winy drink he hath made of hips and haws, &c. But I fear his chemical fermentations, joined with all the experience of *Helvetia* and *Normandy*, would not be able to make drink of crabs and wild pears, that shall deserve to be compared with Rhenish, Baccharac, Canary, or Greek wines;[f] which your friend seems to say he can do, and therefore I desire to read more of his writings on that argument.' Thus far Mr. *Pell*. I sent away on Tuesday the letter I received for Mr. *Worsley*, remaining ever,

Honoured Sir,
your most humble devoted servant
S. HARTLIB.

[a] See 'Spontaneous Generation' and *Usefulness I* in *Works*, vol. 13, pp. 279, 299.
[b] For John Pell in Zurich see above, p. 179n.
[c] For John Beale's letter to Hartlib of 18 Jan. 1658, see HP 51/55A–60B.
[d] i.e., Switzerland.
[e] i.e., Thurgau canton, Switzerland.
[f] For Glauber see above, p. 144n. His correspondence with Pell is not otherwise known.

BOYLE to MALLET[a] 17 April 1658

From the version in a rounded 1650s hand, with Boyle's signature, in the British Library, Add. MS 32093, fol. 396. 4°/2
Not previously printed. Calendared in *RCHM*, Fifth Report, p. 314.

Sir

If I had not experience enough of your goodnes to hope that You will not think me the lesse your Servant for my haveing forborne to trouble You with my Letters when I had noething to write in them able to account for the paines of reading them. I should scarce dare after soe long a Silence to interrupt your quiet to assure You that I have been really your servant ev'n whilst I thought it fit to decline telling You I was soe. And to let You see that I suppose You as constantly my friend as I am your servant I venture by the bearer Mr Nicholls to give You the trouble of assigneing to him and Mr Richard Newman that Lease wherein You have been soe obliegeingly pleas'd to allow me to make use of your name.[b] I hope I shall not need to tell You that if I had a much considerabler thing to trust in the hands of a freind I could not thinke it safer in any mans then in Yours And that therefore the occasion of my present request is partly the death of the servant whose name I us'd in this busines by whose decease your favour to me may prove troublesome[1] to You at soe great a distance from Stalbridge as that of the place whither You are now remov'd & partly the frequent advertisements which your knowing father has been pleas'd to give me that it is not fit that the lease You know of should depend wholely upon a single life. I have written to Sir Thomas Mallet about this busines who being the Person that has favour'd me with his advice in it all along will be best able to informe You what is further to be done in reference to it.[c] I may well be asham'd to give You this new trouble upon such a score as that of haveing already given You another. But since You know that the nature of the busines exacts this rudenes of me I dare almost as confidently promise my selfe your pardon on this occasion as You may promise your selfe my striveing to deserve it by imbraceing the opportunitys of manifesting my selfe

Sir
Your most affection[ate][2]
Oxford Aprill oblieged & humble servant
the 17th 1658. Ro: Boyle

[a] For Mallet see above, p. 103.
[b] For John Nicholls see Nicholls to Boyle, 12 Sept. 1657 (above, pp. 234–7), in which he provides Boyle with details of the lease of Stalbridge Manor in Dorset. Richard Newman has not been identified.
[c] For John Mallet's father, Sir Thomas Mallet see above, p. 103n.

[3]I beg the favour to have my humble service presented to your Lady and those other relations of Yours to whom I have the Honour to be knowne.[a]

For my highly Es/teem'd freind Mr
John Mallet / these

Seal: Oval. Achievement of arms: three mascles pierced. Crest: an arm habited holding a sword.
Endorsed on fol. 396 by Mallet [?] 'Mr Boyle 1658' and in unidentified seventeenth-century hand 'Mr Boiles letter to Mr John Malet 17 Apr 1658'.

HARTLIB to BOYLE — 27 April 1658

From the printed version in Birch (ed.), *Works* (1744), v, 273–6. Also printed in Birch (ed.), *Works* (1772), vi, 102–6.

April. 27, 1658.

Honoured SIR,

I MAY truly say, even in an outward sense, 'I die daily.'[b] These three days, every night I have been near unto death, so exceedingly vehement have the pains, especially of the ulcer and piles, encreased upon me. For want of Mr. *Kratshmer*'s medicine, I have been forced to use that, which Dr. *Bonet*, out of singular love, did send my son *Clodius*, conceiving it the preparation of the ludus, which /p. 274/ he doth prefer above all other medicines in this kind.[c] It wrought notably upon the stone, and brought away divers pieces of it, with abundance of ugly gravel. But my son forbad the continuance at last, perceiving it to do hurt to the ulcer. Now he hath made Mr. *Kratshmer*'s medicine (but not yet by his own better preparation) which I am to take to morrow, God willing, as the most suitable found by experience as yet to all my three most tormenting diseases. This night my poor wife roared out as much as I did; but behold, though my pains continue very sharp, yet I am enabled to present my respects, in acknowledging the receipt of your last,

[a] For Mallet's wife, see above, p. 106n. For Mallet's brother, also known to Boyle, see above, p. 133n.

[b] Hartlib cites 1 Corinthians 15, 31.

[c] For Frederick Kretschmar see above, p. 250n., and for Dr Bonnet see above, p. 199n. Hartlib's son-in-law was Frederick Clodius.

which not before this morning was delivered unto me, being dated April 22.[a] I see also, the like miscarriage has befallen the delivery of mine; which is not so just and fair for them, that have the ordering of this affair, and who have been offered, not long ago, to manage that office, the sum of seven thousand pounds to them.[b] I believe really, that my lord *Broghill* was very ill when our friends came to wait upon him.[c] Mr. *Kratshmer* hath been since very sick and forced to keep his bed and chamber. But Mr. *Marvel* did send again another express unto him, that his business was laid seriously to heart. Mr. *Dury* doth bestir himself daily for him.[d] Yesterday he went to *Hackney* to speak with Sir *Thomas Winor*, about the contents of his highness's letter for advancing of four or five hundred pounds, for the relief of the twenty families.[e] But the poor man excused himself, that he had no money, and because the other treasurer was absent, that should concur with him. The collection is begun to be made in several churches in *London*; but what farther expedient they will find out for the advance-monies, I cannot tell. I will shew Mr. *D.* what you write in your last, concerning my lord *Broghill*'s concurrence.[f] I perceive they will engage him to give intelligence of those quarters of *Germany*, where he lives;[g] which will the more oblige them, as I conclude, not to dismiss him, without a good viaticum. Mr. *Kratshmer* hath presented a printed paper of anagrams (which I was dissuading him to do) but you cannot believe what acceptance they have found, both with his highness, and the whole court.[h] For my part, I care not so he be holpen, with anagrams, or without anagrams, and dispatched to go in the company of the other gentleman you know of. For he begins to be almost impatient of the long delays. My son *Clodius* is well again, God be thanked. The postage of your letters is already paid. My son came to me, three days ago, very much rejoicing, for obtaining, very strangely and providentially, a secret of a very great impor-

[a] For Hartlib's wife see above, p. 60n. Boyle's letter of 22 Apr. is not extant.

[b] Hartlib refers to the sale of forfeited estates in Ireland. See above, p. 229n.

[c] Hartlib may be referring to Benjamin Worsley and others connected with the Rand–Eccleston project, for which see above, p. 229n.

[d] Hartlib refers to Andrew Marvell (1621–78), poet and satirist. In 1657 Marvell was secretary to John Thurloe and collaborated with Milton in the secretaryship of Latin. For John Dury, Kretschmar's assistant in the attempt to solicit support from the Cromwellian government for Polish and Silesian Protestant families, see above, p. 250n., and below.

[e] This is a reference to Sir Thomas Windsor (c. 1627–87), royalist. Hartlib very likely refers to Dury's collection for the Polish Protestants, who had supported the cause of the King of Sweden, but on the king's retirement from Poland, had suffered persecution. Cromwell took up their cause, and invited Comenius and and other Protestants to settle in Ireland and promoted a collection to help the persecuted families. See Turnbull, *H. D. & C.,* p. 282 and C. H. Firth, *The Last Years of the Protectorate, 1656–1658*, 2 vols (London, 1909), ii, 244.

[f] Presumably Broghill was involved in these matters as a member of Cromwell's special council.

[g] Dury was in Germany during 1655–6, returning to England from the continent in Feb. 1657; see Turnbull, *H. D. & C.*, p. 285.

[h] This paper is probably not one of Kretschmar's own composition, but the work of Thomas Davyes, *The Tenth Worthy. Or, Several anagrams in Latine, Welsh and English, upon the name of that most highly renowned worthy of worthies, Oliver late Lord Protector* (1658).

tance, and which his deceased brother-in-law's son hath denied to Dr. *Kuffler* these twenty years.[a] When his brother-in-law was a dying, he sent for Dr *Kuffler*, with an intention to reveal and confide it into his breast; but he was dead before he could come at him. How far my son is bound not to reveal it, I cannot state the case; but by express covenant he is bound up not to do it to Dr. *Kuffler*, who seems to prize it above any other thing he knows; and fancies himself to be made for ever, as they call it, if he might but know that very secret, which now is fallen, as it were by the bye, into my son's hands. All this in very great faithfulness to yourself alone. In my former, as I remember, I spoke something of a sick-bed.[b] Whatever it may prove, I count it more worthy to be taken notice of, than any French bed of state. The account, which I received since of it, runs thus.[c] 'If this, that appears in the model of Mr. *Owefield*'s dwelling, in the *Strand*, near the *Savoy*, sick bed shall be found to hold in the great as well;[d] then I say, that I very well like that part, or joint, that is made to raise the head; for it is done more easily and equally, than can be done by hand, and that without disturbance to the sick, without waking him, if asleep, without straining him (if extreme weak, sore, or wounded) to rise and sit up, as the manner is, whilst they raise and alter his pillows; by which means also, many times, the sick, being in a sweat, takes much cold, which is this way prevented. The like device serves for the like purposes, so far as is necessary, at the bed's feet.'

'As for that contrivance at the side, to raise or let fall either side, I do not perceive so much use thereof: for no well man can endure to lye on the side of a hill, in a posture always ready to tumble down. And if it be intended only to help him to turn, it will badly do that, without two or three more to help, and then the use (viz. the saving that charge) is lost. And, without some care, one alone, standing on one side the bed, and turning the same side up, may possibly throw the sick person out of the bed, or against the bed's-post, to his terror or hurt. But this can do no hurt, if let alone. In the whole matter, I find considerable ease and advantage to the sick, and charge saved, one person being, by this means (ordinarily) enough to look to one, though very weak.' Thus far one of my learned surveyors. What the inventor will be able to alledge, in vindication of all the parts, I shall learn very shortly, I do not remember, whether I have told you ought of a weatherwise toad, discovered unto me from *Zurich*, March 21, 58, in these words.[e] 'It was observed

[a] For Johann Sibertus Küffler see above, p. 221n. Clodius's deceased brother-in-law's son has not been traced. Ironically, Küffler was infamous for his own secretiveness regarding his invention for sinking ships.

[b] This letter is not extant, but it is clear from evidence herein that it must have been written after 14 Apr.

[c] Hartlib's correspondent was possibly Cressy Dymock, for whom see above, p. 88n.; see his undated letter, HP 53/35/7A–B.

[d] Mr Owefield, smith and inventor, known to Hartlib since 1651.

[e] Hartlib quotes from a letter from John Pell of 21 Mar. 1658, HP 65/19A. For Pell's residence in Zurich see above, p. 179n.

in the court, that *A. M.* (which, I hear, was *Adrian May*) was wont to foretel the change of weather confidently and infallibly; wherefore the king would needs know of him, what it was that enabled him to out-do all other mens conjectures in that sort of predictions only. He replied, that he had a familiar, which he durst not shew to others, for fear they should say it was a devil; but he knew his majesty would not mistake so grossly, nor discover the mystery to others, that were not worthy to know it. Hereupon he led the king into an odd corner of the garden, where, in a blind place, he had so shut up a /p. 275/ great toad, that she could not get out. Hither, said he, do I come two or three times every day, to see how her colours change, having long observed great variety in them, according to the different alterations of the weather at hand, *&c.* And these are the only aspects, that I consider for my prognosticks of the weather.'[a] Thus far of this pretty natural weather-glass. But I have written back to our learned resident, there, to resolve me, if he can, these farther queries; for his relation seems to me somewhat short, and would be more largely explained; as 1. What those colours and varieties of appearances were. 2. What alterations they did portend; whether rain, storms of wind, change of heat and cold: all these, or only some one of them. 3. How the toad was maintained, fed, or kept alive in that cell. By some of the adjoined papers you will see what my Hereford philosopher hath returned to these and some other particulars, worth your knowledge and improvement.[b] In the extract of Mr. *Worsley's* letter, imparted in my last, he saith, 'The council retracted their former order, and made me another, in all things suitable to what they had promised, and made me expect.[c] (The following words, which should have been added, were left out.) 'A copy of which I sent to Mr. *Boyle* that week.'[d] This copy I beg from your kindness; for I suppose he hath signified this on purpose, not mentioning any thing of his private condition, that I should receive information and satisfaction from that order. And having resolved, for time to come, to look upon me no more as a private friend, but as a father, it is fit I should be acquainted with whatever hath, or shall befal this my son. In that letter, of the 14th of April (which is the last I had from him) there are some other lines also, which deserve to be communicated, and which then I could not transcribe. For he writes moreover, 'For honest affectionate Mr. *Potter*, I have returned an answer to his letter, which I think will very well satisfy[e] [I conjecture about the skin before the bear or P. M. be had.][1] That well

[a] Adrian May (1596–1670), of Sussex, became groom of the Privy Chamber to Charles I in 1633. For May's attempts to foretell the weather by means of toads, see *Ephemerides* for 1658 (HP 29/7/5B).

[b] The reference is to John Beale, born in Herefordshire.

[c] For Hartlib's letter, with its extract from Worsley's letter of 14 Apr., see above, p. 265n. Presumably Worsley refers to the Council of Ireland's appointment of a committee to implement the project to sale the forfeited estates. See above, p. 229n.

[d] Boyle's copy of Worsley's letter is not extant.

[e] This is a reference to William Potter (fl. 1650s). In 1656 he was appointed registrar of debentures on 'the act for the sale of the late king's land'. See Webster, *Great Instauration*, pp. 449–53.

mentioned in *Herefordshire* to yield bones deserves to be more accurately searched, and to try, whether those bones have not some singular faculty in broken bones like to the lapis ostocolla of *Germany*. About the presagous nature of stones, I cannot say any thing rare or very singular hath fallen within my observation at any time, and therefore I would be the more glad to hear any thing of it from our friends. For weather-glasses, to shew you, that I have not been wholly idle, nor, that I did set another a task, harder than I would follow myself; before I came over, I had several made for me, and several ways tried for the making both of their heads and cylinders exact and even.[a] And I must, by the way, tell you, no man must expect another will ever be accurate in mechanical matters, upon a bare direction, without we take pains, stand by, put to our hands, and help to contrive ourselves. This I did, and had at length such neat glasses made, as did very much please me; the cylinders being very even, and of a convenient proportion, both in their lengths and diameters, to their heads. Being come over hither, I had one exactly graduated into five hundred parts, and the length and heat were so proportioned, that in extremity of cold this winter, the water did rise to 180. I have made many observations, which do confirm my former conceptions; *viz*. that, to be indeed exact, doth require several glasses to be set in several places, and so constantly observed together. You will much oblige me, by letting me see our friend's discourse of wines, with the whole contrivances of them; which I beg with the very first.'[b] Thus far my philosophical son. And having written thus far, my son *Hartlib* sends me your last to me, dated April 24; which the blind post brought to his house, mistaking Axe-yard for *Charing-cross*.[c] The letter to Mr. *Worsley* shall be sent this night, enclosed in mine, who have written very largely to him.[d] I wonder I do not hear yet of the arrival of Mr. *Wood* to *Dublin*.[e] My son *Clodius* was just with me, bringing me something of Mr. *Kratshmer*'s physick, which he hath prepared, but the pipe bursting, he could save but a very little, promising to make a great quantity, as soon as the other pipes come from *Lambeth*, which are promised next week.[f] He is pretty well again, God be thanked, and sent you another packet on Saturdy last, of which I can bear witness.[g] Mr. *Brereton*'s father will have him to come down again; but he is now fully resolved to marry before he go down.[h] If he knew of my

[a] Worsley's interest in weather glasses is testified to in his astrological letter. See above, p. 226n.

[b] Possibly Glauber's notes on wine; see above, p. 252n.

[c] Samuel Hartlib junior, for whom see above, p. 229n., moved to Axe-Yard on 2 Feb. 1658. See above, p. 254n. Hartlib senior resided at Charing Cross.

[d] Hartlib's letter to Worsley has not been found.

[e] For Robert Wood, see above, p. 221n. Wood had worked for Henry Cromwell since 1656.

[f] Hartlib probably refers to clay pipes, made at one of the many potteries that existed in Lambeth, London, at this time.

[g] Clodius's packet for Boyle does not appear to have survived.

[h] For William Brereton, son of the 2nd Baron Brereton, see above, p. 160n. This marriage is alluded to in Hartlib to Boyle, 7 Jan. 1658, see above, pp. 249–50.

writing to you, he would certainly present you his unfeigned service. How much Mr. *Beale* is your truest servant, you will see again in the adjoined papers.[a] There is not the like man in the whole island, nor in the continent beyond the seas, so far as I know it; I mean, that could be made more universally use of, to do good to all, as I in some measure know, and could direct. That glass, with whatever was in it, I did deliver very carefully to Mrs. *Dury*, according to my lady's direction.[b] But Mrs. *D*. I remember told me at that time, that she was half resolved to come over. But hearing afterwards, that she could not come, she sent both it and many other packets of mine and others into *Ireland*; although I cannot hear to this day, that any of them is arrived. I sent likewise a large writing of Mr. *Beale*'s upon Casaubon, which my lady does very much desire to see, to Mr. *Worsley*, by him to be conveyed to her.[c] But Mr. *Worsley* says, in his last, of the first of April, 'For those papers and books you mention to have formerly sent by Mrs *Dury*'s conveyance, and those animadversions of our worthy friend on *Casaubon*'s Enthusiasm, I have not as yet received any of them.'[d] But O! what a sad and ugly note do I receive from *Zurich*, in these expressions! 'This week I heard, that your count of *Hohenloe* is certainly /p. 276/ married, and goes ordinarily to mass with his countess, professing himself an unfeigned papist.' He, that told me this, was the count's great friend heretofore.[e] He says, the young couple will spend his nothing and her portion in three years, and then they may go a begging together. Some say, that he, by falling from Calvinism for a popish wife, hath but followed the steps of his father, who turned from Lutheranism for a Calvinish wife; and thereby came to be hated by all his kindred, who were all Lutherans, and so continue.[f] I doubt his ghostly father will tell him, that he is not now bound in conscience to pay his heretical creditors.' Thus far our resident, April the 11th.[g] Though I be like to lose thirty pounds sterling of my own, standing engaged to others for fifty pounds more, yet this doth not so much affect;[h] but the other part of the information is really such, as doth fill continually my heart with spiritual horrors and sorrows, that it is ready to burst into tears (yea of blood, if it be possible) when I have occasion either to write or to speak

[a] The enclosed papers are not extant.

[b] For John Dury's wife, Dorothy Moore, see above, p. 229n. The lady referred to by Hartlib was probably Lady Ranelagh, at this time resident at Youghal in Ireland.

[c] Hartlib refers to Beale's comments on Meric Casaubon's *A Treatise concerning Enthusiasme* (1655).

[d] Worsley's letter to Hartlib of 1 Apr. 1658 is not extant.

[e] Presumably this is Count Christian of Hohenlohe-Bartestein (1627–75), who converted to Catholicism in 1667. Hartlib's Zurich correspondent was John Pell, for whom see above, p. 179n. The count's great friend has not been traced. He married the daughter of Graf Hermann von Gazfeld und Gleichen.

[f] The Count's mother was noted for her strong-minded Protestant piety. His father was Graf Georg Friedrich (1595–1635). See *Oldenburg*, i, 159.

[g] Pell to Hartlib, 11 Apr. 1658 is not extant.

[h] Hartlib was assisted in his attempts to regain his money from the Count by Oldenburg; see Oldenburg to Hartlib, 12 June 1658, *Oldenburg*, i, 163 and *passim.*

of it. I beseech you to oblige monsieur *du Moulin* to gratify my lady's and mine own desires, according to one of the papers here enclosed.[a] Concerning the story of my lord *Middlesex*, my worthy correspondent answers thus: 'I have requested my nephew to enquire of Sir *W. Pye*, the truth of the famed story.[b] He is a near neighbour, kinsman, and very much respected by Sir *Walter*. But by the like thing, which I heard from colonel *Harley*, as related by the said lord to colonel *Harley*'s sister, I suspect it will be but a drunken story. It is not like to have better testimony, than of drunkards.'[c] I have procured a copy of the same by lord * * *[d] for my lady, and am watching every opportunity to send them away, with some other books, for *Ireland*. The cavaliering party is not only to be secured in their persons and horses, but some of them to be transplanted from one county into another.[e] Yesterday my lord *Skippon* told my son *Clodius*, that the lord *Rich*, now earl of *Warwick*, was sick unto death.[f] There is no more speech of a parliament, but believed there may be one about the beginning of September next.[g] Mr. *Jessop* hath been very sick, but is upon recovering.[h] I cannot more at present, but remain ever,

Honoured Sir,
your most faithful,
humble servant,
SAM. HARTLIB.

[a] The reference is to Peter du Moulin (1601–84), tutor to the sons of the 2nd Earl of Cork at Oxford.

[b] Sir Walter Pye the younger (1610–59), was the son of Sir Walter Pye (1571–1635), attorney of the Court of Wards. Hartlib's correspondent was probably Lady Ranelagh. A letter evidently from Lady Ranelagh to Hartlib dated 3 Apr. 1658 carries an account of an apparition witnessed by Lionel Cranfield (1571–1635), Earl of Middlesex. This letter repeats the assertion also made here, that Lord Middlesex and his friends were drunk. See BL 6, fol. 4.

[c] Presumably this is Sir Edward Harley (1624–1700), parliamentary soldier and later governor of Dunkirk. Before the Civil War Sir Walter Pye the younger was on friendly terms with Harley's father. Harley had three sisters who survived infancy: Brilliana (1629–60), Dorothy (b. 1630) and Margaret (b. 1631). See J. Eales, *Puritans and Roundheads: the Harleys of Brampton Bryan and the Outbreak of the English Civil War* (Cambridge, 1990), pp. 11, 24, 202.

[d] It has not been possible to identify this person.

[e] A new royalist conspiracy had been revealed in early April 1658. D. Underdown, *Royalist Conspiracy in England, 1649–1660* (New Haven, 1960), pp. 226–7.

[f] Hartlib refers to Philip Skippon (d. 1660), a soldier during the Commonwealth and Protectorate, who held both civil and military offices. Robert Rich (1611–59) succeeded as 3rd Earl of Warwick on 19 Apr. 1658; he in fact survived until 30 May 1659.

[g] The next Parliament was not summoned until Dec., meeting for the first time on 27 Jan. 1659.

[h] William Jessop was involved in the sale of Irish forfeited lands. See Turnbull, *H. D. & C.*, p. 55.

HARTLIB to BOYLE 13 May 1658

From the printed version in Birch (ed.), *Works* (1744), v, 277. Also printed in Birch (ed.), *Works* (1772), vi, 107–8.

May 13, 1658.

Honoured SIR,

I HAVE not yet heard whether you received mine of May 4, wherein one was enclosed from the excellent lady.[a] The 8th of May I wrote very largely, adjoining many considerable papers. I hope, that both are come safe to your hands. Yesterday I had another letter from Mr *Worsley*, of the 5th of May, of which you have the principal extract here adjoined. For in a postcript he adds, 'I shall desire, if you please, [but why should I not please?][1] that a copy of this may be sent to Mr. *Boyle*, (to whom I cannot at present write) that he may know how the better to write or speak to the said Mr. secretary about this business.'[b] He introduces the extract thus. 'I was yesterday exceedingly refreshed with our friend Mr. *Beale*'s papers, containing so many things spiritual, and worthy of observation, upon the learned *Casaubon*'s tract of enthusiasm.[c] Truly, when I read it, I found so strong a leaven in it, that I knew not how to give over my meditation upon it, till very late at night, intending, as this day, to write you a large answer, of my thoughts about it. But being, through a sudden change and alteration in the air, taken with a sudden indisposition, I must be forced to desire your excuse, until the next post; at which time, if the Lord please to afford me health, with other opportunities, I shall endeavour to give you some reasonable and full satisfaction. And for your large letter also, of the 22d of April, with the several ingenious papers enclosed, I must be forced to respite my thanks for them till the next.' The letter is dated not at *Dublin*, (for I believe my writers do not love to write hard names) but at *Clantarffe*; which I mention, because I would fain be informed myself, for certain reasons, how far that place is distant from *Dublin*.[d] Yesterday I had also a letter from *Youghall*, in these words.[e] Our friend from *Dublin* writes, that his propositions for learning have lain these two months before the council, but not yet advanced. I now intend to

[a] This letter, with its enclosure possibly from Lady Ranelagh, is missing. Hartlib's letter of 8 May 1658, and its adjoined papers, is also not extant.

[b] For Secretary John Thurloe see above, p. 248n. The business alluded to is probably the sale of forfeited estates in Ireland, for which see above, p. 229n.

[c] For Beale's comments on Meric Casaubon's *A Treatise concerning Enthusiasme* (1655) see above, p. 268n.

[d] Hartlib probably refers to Clontarf, near Dublin.

[e] The reference is to Youghall, near Cork in Ireland. It is likely that the letter writer is Lady Ranelagh who was at this time staying at Youghall. The 'friend' she mentions is Benjamin Worsley. Plans for a college in Dublin were part of the Hartlib circle's 'advancement of learning' project, in which Worsley was a leading figure. See Webster, *Great Instauration*, pp. 225–31.

write to *Broghill*, to quicken my lord deputy therein.[a] I have received all your packets, and, in some of them, Mr. *Austin* upon my lord *Bacon*'s Natural History.[b] I have this week been taught a very plain medicine against the piles, which the person, that taught it me, recommended upon her own experience. Take the white part of the dung of hens, and hogslard, beat them well together, and put some of that upon a warm scarlet, very warm to the place; repeat it, as there is occasion. This may easily be tried, and will no less be blessed, for its cheapness and meanness. For the Lord made the poor as well as the rich, and provides for the one as well as the other; nay, more for the poor, because they are more immediately cast upon him for provision, the rich taking their own provision upon themselves, and seldom looking so low as the common things, which God has filled with virtue, or so high as his blessing for their cure. I just now heard, that Mr. *Wood* is landed, and has brought me your present. The letter is dated April 24.[c] In the adjoined extract, you will see how carefully she is prosecuting the observations relating to the design for registering of illustrious providences.' Thus far that great and most illustrious soul. I have a number of her other most excellent relations on this argument, but I spare you. I pray let not my pretty creatures be slighted in your Oxonian walks, as here they are represented unto you from *Hereford*.[d] I pray you take notice of a certain tract come forth lately under the name of, *Hydriotaphia, Urne-burial; or a discourse of the sepulchral urns, lately found in Norfolk: Together with the garden of Cyrus: Or the Quincuncial Lozenge, or Network Plantations of the Ancients, artificially, naturally, mystically considered. With sundry observations. By Thomas Browne, doctor of physick*.[e] To be had at the sign of the gun in *Ivy-lane*. It seems to be no ordinary book. The loss upon *Ostend* is very considerable.[f] Mr. *Cotton*, (son to Sir *Thomas Cotton*) who stabbed himself, is since dead of his wounds. Doth not the famous library fall by this means to my lord protector?[g] My lord *Northumberland* presented his highness this week with

[a] Henry Cromwell served with Broghill in Munster from 1650 to 1652 and they remained close throughout the 1650s. There is no evidence that Broghill intervened on Worsley's behalf.

[b] The books in question are Ralph Austen's *Treatise of Fruit Trees* (2nd edn, 1657), and *Observations on … Bacon's Natural History* (1658). Boyle had sent them to Hartlib in Feb. for distribution. See above, p. 253.

[c] For Robert Wood see above, p. 221n. Worsley's correspondent of 24 Apr. has not been traced.

[d] Hartlib alludes to John Beale.

[e] This book was printed in 1658 by Henry Brome in London. Its author was Sir Thomas Browne (1605–82), Norwich physician and author of *Religio medici* (1643).

[f] This is a reference to the war between France, allied to England, and Spain. The French, deceived by news of a successful revolt in Spanish-controlled Ostend, attempted a landing there on 4/14 May with 15,00 men, but found themselves in a trap and lost nearly 500 men; see Firth, *Last Years of the Protectorate* (above, p. 264), ii, 183.

[g] Sir Thomas Cotton (1594–1662), inherited the library of his father Sir Robert Cotton (1571–1631). Sir Thomas's son in question must be one of the four sons he had with his second wife. The Cottonian library was searched for evidence of royalist sympathies after the dissolution of Parliament. Sir Thomas's efforts to restore the collection included removing the greater part of it to his son's house in Stratton in 1650. Presumably, Hartlib refers to the failure of this plan on his son's death.

two most gallant and stately horses. But the minister of *Petworth*, Dr. *Cheynel*, is not shot, as was reported; but too true, that he is fallen quite distracted, and (if it be not misreported) sent to *Bedlam*.[a] The court of justice have met twice in one day, and that is all that they have done as yet.[b] Mr. *Morian* tells me, from *Arnhiem*, that Dr. *K.* was shortly to give a proof of his firework to my lord protector.[c] And this morning (for the doctor never or seldom comes more at me) Mr. *Brereton* was telling me, that he intended to be at *Woolwich* about five a clock in the afternoon, being the time appointed by his highness to see the undertaking performed himself, being to be there in person. The foresaid good man wishes, that he may not blow up a good conscience to get riches by such means.[d] My son *Clodius* wrote, that he would be at home as yesterday, Mr. *Stroud* continuing very ill; but he is not come this evening for aught I know, your five ordered favours are not yet delivered.[e] You would pardon this piece of imprudency, if you were acquainted with the particulars of my very great straits, to say nothing of the continual (almost daily) disbursements for others, and the gratitude and justice of account, which is due, upon all such occasions to me given, from,

Honoured Sir,
your unfeignedly faithful,
and most obliged servant,
S. HARTLIB.

SIR KENELM DIGBY[f] to BOYLE — 22 May 1658

From the extract in the hand of Mercator, HP 14/5/30A. Fol/1.

[a] Petworth was the seat of Algernon Percy (1602–68), 4th Earl of Northumberland. Francis Cheynell (1608–65), Puritan and author, held the living at Petworth from 1643 until the Restoration. In his customary fashion, Hartlib refers to Cromwell as 'his highness'.

[b] Hartlib refers to the High Court of Justice appointed by Cromwell on 13 Apr. 1658 to try royalist conspirators. Firth, *The Last Years of the Protectorate*, ii, 71.

[c] For Johannes Moriaen see above, p. 66n. For Johann Sibertus Küffler, and the demonstration of his invention to Cromwell and the government, se above, p. 221n.

[d] For William Brereton see above, p. 160n.

[e] Frederick Clodius was Hartlib's son-in-law. For Thomas Strode see above, p. 254n. Presumably Clodius was treating Strode.

[f] For Digby see above, p. 99.

Ex literis Kenelmi Digbæi ad Dominum Boyle Parisiis 22 Maii anno 1658.

Et certè vix potui transcribere Receptam (de spiritu calcis vivae) præ febre, sed recordanti mihi, quòd tui gratiâ occupares in re, quam valdè tibi gratam fore existimabam, vires continuò redibant. Si quam difficultatem in illo repereris, monitus explanabo, nam præsens fui in ipso opere ab initio usque ad finem, neque vidi unquam, quod mihi placeret magis, et prodigiosi effectûs, quos postmodum operatum est in calculo et podagra, multò magis etiam me affecerunt. Certus sum linguam Gallicam tibi familiarem esse, quare mitto tibi transcriptum ipsissimae receptæ, quam author mihi dedit.[a]

In fine ipsius Receptæ Gallicæ addita sunt hæc sequentia, quæ non erant in Anglico.

Spiritus calcis solus sufficiens est ad curandam et extirpandam podagram cum radice, imò ad abigendas ipsas quoque nodositates, tumores ac duritates, quas podagra[1] effecerit. Phlegma quod attinet, nullam ejus virtutem novi, nisi quòd amicus quidam meus, cui illud dederam, ut experiretur, si quid praestitutum esset, cum illud applicuisset externè doloribus podagricis, semper illos tranquillos[b] dedit in instanti.

From the letter of Kenelm Digby to Mr Boyle, dated from Paris, 22 May in the year 1658.

And indeed I was certainly scarcely in a fit condition to transcribe the recipe (on the subject of the spirit of quicklime) as a result of my fever. But when I remembered that you were yourself concerned with this subject on your own account, I thought how very pleasing it would be for you to have it; and then my strength immediately returned. If you find any difficulty in it, I will be able to explain it; for I was present while this operation was being performed, from the beginning right up to the end. Nor did I ever see anything that gave me greater satisfaction; and its effects are remarkable – after it had been used as a remedy for the stone and for the gout, they made a much greater impression on me even than they had done before. I am quite sure that you are familiar with the French language, and so I am sending you a transcription of the very same recipe that its author gave to me.[a]

At the end of this same recipe in French are added the following words, which did not occur in the English version:

The spirit of lime is enough on its own to cure the gout with its root; indeed, it is even able to remove those knots, tumours and hard lumps which the gout has produced. As for [its effect on] the phlegm, I have not had any knowledge of its qualities in this respect, except for the fact that a certain friend of mine, to whom I had given it in order that he might try it out and see whether it was of any use, applied it externally for gouty pains; when he had done so, it always made them quiet[b] in an instant.

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[a] Digby's provision of this recipe to Boyle is referred to in a letter to Hartlib dated 1/11 Dec. 1658; see HP 14/5/8A, 8B, 9A, 9B.

[b] i.e., no longer inflamed or painful.

Endorsed in a later hand: 'Sir Ken: Digby to Mr Boyle. Recipe against the stone.'

HARTLIB to BOYLE 25 May 1658

From the printed version in Birch (ed.), *Works* (1744), v, 278. Also printed in Birch (ed.), *Works* (1772), vi, 108–9.

May 25, 1658.

Honoured SIR,

THE lord is still exercising your poor servant by his various dispensations in some doubtful way. For the horrid pains of the ulcer being so extremely upon me, it put my son *Clodius* to a great deal of fear in point of life.[a] But since my last the fury of my pains are very much, God be thanked, abated, and a great deal of stuff with 30 or 40 little stones are come away from me, so that I cannot tell what the lord means to do with me. For, as I told you once already, as sometimes he persuades my heart, that I shall not die, but live to declare his works, so always he doth temper my will with a great deal of cheerfulness to be submissive to his pleasure, whatever it shall be, for life or for death. There is a German at *London*, who will not be known by any name, but counted a secret (I mean Cainitical) philosopher, now going for *France*, who is said to have a most admirable medicine for curing of ulcers in the bladder, or any other part most perfectly.[b] But I am afraid he is over-run with a worse kind of ulcer than myself, being obstinately resolved never to impart this secret. Whether he can be prevailed withal upon any reasonable terms to part with the medicine, I cannot yet determine. He letting fall some words, that the medicine was made out of minerals, my son *Clodius* begins to conceit, that it may perhaps be that very medicine of mercury, which he is now preparing for me. He is astonished at the operations of the other medicine in me against the stone, and confesses never to have seen the like; conceiting withal, that I may yet be a healthier creature than I have been all the days of my life, when all the tartarious matter shall be thus purged out of my body. But these are mainly to acknowledge your singular condoling affections in your last of May 22.[c] *Caneparius*'s book cannot be in a better custody than my own, and I shall not fail, God willing, to give notice of it to Mr. *Worsley* himself.[d] My son *Clodius* is reading of it

[a] Frederick Clodius was Hartlib's son-in-law.

[b] The Cainites were a 2nd-century sect of heretics reputed to profess reverence for Cain and other wicked scriptural characters.

[c] This letter is not extant

[d] Hartlib refers to Pietro Maria Canepari (b. 1563), Italian physician and philosopher, the author of a book on inks, *De atramentis cuiuscunque generis* (1619), which contained a number of observations on chemistry and medicine. See Partington, *History of Chemistry* (above, p. 174), ii, 94–5.

for the present, commending it in many respects. The same author hath written another book, which is as it were a whole body of philosophy, as Mr. *Kratshmar* told me.[a] But if I hear of more, I shall give notice of it. Dr. *K.* comes never at me, but I hear my lord Protector is reconciled again, and hath promised to be present at another proof, which he is to make again either this or next week.[b] Mr. *Kratshmar* is at *Stratford Bow*; and when I see him, I shall ask him what passages he most approves in the designed treatise *De Atramentis*.[c] My son commends very much young *Kuffler* unto me as a very inventive wit. He doth now make exactly the stopples of glass to stop bottles withal instead of corks, which I suppose may prove a very special kind of accommodation for preserving of wine, ale, and all other kind of liquors.[d] My son *Clodius* hath also received a letter from Sir *K. Digby* with many observable things in it. He tells me, that Sir *K.* hath also published of late the treatise of the sympathetical Powder, and, if I be not mistaken, that he hath gotten or is shortly to get a copy of it.[e] The adjoined copy of Mr. *Worsley*'s letter seems to have many regular things in it. And I am glad I have gotten a letter again from Dr. *Horne* with those pretty observations, occasioned by my communications of *Martindale*'s new carriages or coaches.[f] The doctor also hath sent me a scheme or picture of new invented coaches, which have been in use at *Leyden* for some years, but only for pleasure. But *Martindale*'s motion, the like never as yet hath been practised, will be not only for recreations, but likewise for real profit and accommodations in many respects. Just now I have given an acquittance upon the receipt of your five favours, to Mr. *Thomas Alsteyn*, which put a new obligation upon me to subscribe myself; [g]

Honoured Sir,
your ever faithful, and
most obliged servant,
SAM. HARTLIB.

[a] For Frederick Kretschmar see above, p. 250n.

[b] For Küffler and the trial of his invention see above, p.272. Hartlib implies that the first demonstration, which took place before Cromwell, failed.

[c] Hartlib refers to Kretschmar's stay at Drebbel's factory at Stratford-le-Bow; see Webster, *Great Instauration*, p. 388.

[d] For the glass stopper see *Usefulness II*, *Works*, vol. 6, pp. 532–3.

[e] Hartlib refers to Sir Kenelm Digby's *Discourse fait en une celebre assemblée … touchant la guerison des playes par la poudre de sympathie* (1658), on the magnetical cure of wounds. See Partington, *History of Chemistry* (above, p. 174), ii, 424.

[f] For Horne, i.e., Hornius, see above, p. 162n. Hartlib presumably refers to William Martindale (fl. 1660), London inventor, gunsmith and maker of carriages; see Hartlib's *Ephemerides* for 1658 (HP 29/78A) and HP 55/8/1A. In the 1650s the Oxford scientific club was interested in improving coaches for ease, strength and lightness. See Shapiro, *John Wilkins* (above, p. 245), p. 133.

[g] Thomas Alsteyn may be Thomas Alleyn, for whom see below, p. 397n.

SIR *H. Slingsby* was only this day tried before the high court of justice, and my lord *Falconbridge* is gone with a very magnificent train to the king of *France* at *Mardyke*.[a]

HARTLIB to BOYLE 29 May 1658

From the printed version in Birch (ed.), *Works* (1744), v, 276. Also printed in Birch (ed.), *Works* (1772), vi, 106–7.

May 29, 1658.

Honoured Sir,

ON Tuesday last I wrote largely, though under extremity of pains.[b] On Thursday I sent a letter from Mr. *Worsley*, with a few words of mine upon the superscription, and by your servant a large packet from my lord *Broghill* yesterday morning.[c] I had not written at this time, but that I am bound to perform an extraordinary duty towards my worthy correspondent Mr. *Beale*, he desiring this very favour from my hands. Your excellent sister did write April 24, as followeth. 'By this post I receive from my brother *Broghill* an assurance of his being ready to serve your excellent *Hereford* correspondent, and therefore pray put him to the trial, by offering him some opportunity of being so nobly imployed.'[d] And in another letter of May 8. 'Mr. *Beale*'s promise of several sheets of his I look upon as a great one, and worthy of much more than thanks from me, who must confess to read what I have already seen of his with much satisfaction. The Lord grant it may be also with much edification; if not, I am sure the fault is not in the matter, but in my heart. My service and acknowledgments to him, I beseech you. I would fain know how he is got free of his committee.'[e] But by Mr. *Beale*'s extract of a letter of May 21, you will see what opportunity he hath discovered, that may redound to

[a] Sir Henry Slingsby (1602–58), royalist, was involved in the royalist plot in Yorkshire. He was tried on 25 May in Westminster Hall and executed on 8 June. Hartlib also refers to Thomas Bellasis (1627–1700), Lord Fauconberg, who married Mary, the 2nd daughter of Oliver Cromwell. Fauconberg's mission to France took place in May 1658. Mardyke, in Flanders, near Dunkirk, was taken by Henry de la Tour d'Auvergne (1611–75), viscomte Turenne, maréchal de France, in Sept. 1657.

[b] See above, p. 273.

[c] None of these letters appears to have survived.

[d] For John Beale's difficulties in the transition from Cromwellian to monarchist rule between 1658 and 1660, and the aid he received from Hartlib, Lady Ranelagh and Lord Broghill see Stubbs, i, 487.

[e] Lady Ranelagh presumably refers to the Herefordshire Association of Ministers, in which Beale played a leading role in the period 1657–8. See Stubbs, i, 485. Neither of Lady Ranelagh's letters to Hartlib has been found.

his advantage.[a] May it therefore please you, Sir, by the first occasion of writing to present this case and opportunity to the most serious consideration and real assistance of my lord *Broghill*, according to the adjoined paper. And though he be absent for the present, yet I make no question, that by an affectionate letter he may work powerfully upon my lord *Jones*.[b] Mr. *Beale*'s case seems somewhat like that of *Daniel*'s, when he was cast, without a cause, into the den of lions. But if my lord *Broghill* will but do as *Darius*, there is no doubt but he may be delivered.[c] If you would also recommend the same person and case to Dr. *Wilkins*, he might also be very instrumental to second my lord *Broghill*'s affections to my lord *Jones*, and some others.[d] Mr. *Beale* hath written in his last very learnedly and largely of colours; which, being but begun to be transcribed, my amanuensis falling sick this afternoon, I must defer the sending to another post.[e] In the mean while, and ever (having been tired by my wonted pains, and large letter to Mr. *Beale* by this very post) I rest,

Honoured Sir,
your most obliged,
faithful servant,
SAM. HARTLIB.

The electoral college hath written to the king of *Sweden*, promising not to proceed to the imperial election, till the Austrians and Poland have first made their peace with him.[f] This may reflect also not a little upon the affairs of *C. S.* and of *Spain*. There appears as yet no possibility of relieving of *Dunkirk*.[g]

[a] For Beale to Hartlib, 21 May 1658, see HP 52/61A–62B. However, it is unclear what 'opportunity' was involved.

[b] Lord Broghill was requested to appeal on Beale's behalf to Arthur Jones, 2nd Viscount Ranelagh, for whom see above, p. 229n.

[c] Hartlib likens Beale to Daniel, and Broghill to King Darius, who gave the order for him to be released from the lions' den. See Daniel 6.

[d] For John Wilkins see above, p. 144n.

[e] See Beale to Hartlib, 21 May 1658, HP 52/61A–62B.

[f] The Holy Roman Emperor Ferdinand III died on 2 Apr. 1657, before his heir, Leopold (1640–1705) was old enough to be eligible for election, which was not until he was 18. In Feb. 1658 Austria concluded an alliance with the Elector of Brandenburg and the King of Poland against Charles X (1622–60), King of Sweden, whom many British Protestants hoped could be elected Emperor instead. Charles X responded by making preparations to invade Brandenburg. The college of electors sent envoys to Sweden to mediate the dispute and Charles X decided to attack Denmark instead. The Archduke was elected Leopold I on 18 July 1658. See Firth, *Last Years of the Protectorate* (above, p. 264), ii, 245–7, 249, 284, 287.

[g] Hartlib refers to Charles Stuart, who was then allied to the Spanish and leading a royalist contingent fighting with the Spanish in the Netherlands. The Austrians were also providing military assistance to the Spanish, but this was withdrawn in return for French support for the election of Leopold I. See Firth, *Last Years of the Protectorate*, ii, 246, 254. For the siege of Dunkirk, see ibid., ii, 184–202.

HARTLIB to BOYLE 1 June 1658

From the printed version in Birch (ed.), *Works* (1744), v, 278–9. Also printed in Birch (ed.), *Works* (1772), vi, 110-11.

June 1, 1658.

Honoured Sir,

HAVING written largely on Tuesday last, and having sent some other letters on Thursday, Friday by your man and Saturday by the posts, these are only to signify, that I had none from your hands by the post, that arrived yesterday.[a] My son *Hartlib* has had a very large conference with Mr. Secretary about the business of learning; and finding him full of frivolous suspicions and allegations, he hath notably pleaded for the justice of that affair, and doth not mean to give it over, till he be convinced into better resolutions.[b] To this purpose he hath referred him to Mr. *Jessop* (who is a very great and real friend to that design) that he may receive satisfaction to any of his pretended scruples, though they be such, that my son can discern the weakness of them, to speak the best of them.[c] Yesterday the secretary went to confer with my lord *Fleetwood* about it, but he will not be able to cope with his cunning subtilities.[d] But not a word of all this to any other. By the enclosed you will see what Mr. *Worsley* hath written to Mr. *Dury*.[e] To me he writes as followeth. 'Your last hath confirmed me in that, which I had only before a probable but grounded guess of, *viz*. that upon other pretences the doctor had a mind to divert that revenue from both those persons, and those upright, honest, and sincere aims for which it was intended, and under the notion of the states care to put himself into the management of it.[f] But if this revenue may not be managed /p. 279/ entirely amongst ourselves, who understand the aims, hearts, lives, principles, and spirits, one of another, I mean Mr. *Boyle*, yours, Mr. *Dury*, Mr. *Sadler*, myself, or Mr. *Beale*, (whose piety, integrity, and worth I have a confidence of) it shall never be raised to serve the outward glory or lust of another man.[g] If the state have a mind to set up such an institution, let them do it of their own, and dispose it to their own ministers. If other men are willing to lay a foundation of so much good, let not the state hinder them by interposing amongst them. For in these things every

[a] See above, p. 274. The other letters which Hartlib refers to here are not extant, but correspond to 27 and 28 May. For Saturday's letter see above, p. 276.

[b] For Samuel Hartlib junior see above, p. 229n. Benjamin Worsley's propositions for learning are mentioned in Hartlib to Boyle, 13 May 1658 (above, pp. 270–2), and presumably Hartlib junior was acting on Worsley's behalf when he visited Secretary Thurloe. For Thurloe see above, p. 248n.

[c] For Jessop see above, p. 269n.

[d] For Charles Fleetwood see above, p. 229n.

[e] See Worsley to Dury, 26 May 1658, HP 33/2/9A–B. For John Dury see above, p. 56n.

[f] For William Petty see above, p. 64n. Petty wanted to manage the revenue of the sale of forfeited estates. See Turnbull, *H. D. & C.,* p. 55 and Webster, *Great Instauration*, pp. 75–6.

[g] For John Sadler see above, p. 88n. The others named here were presumably also trustees.

man is free, neither can any man be obliged but according to his own pleasure and through his own satisfaction. But if the state have a mind to try or compare themselves with the donors, let them give us but a small revenue, and leave it to us. Let them take a greater, and let the emulation of doing most good, and being most faithful to the publick grow between them and us. And consider, who can lose by such an honest strife as this is. And let this be propounded as an expedient between us, all which I shall desire you to communicate both to Mr *B*. and Mr. *D*.[a] And for as much as Mr. *D*. may have an opportunity to speak with my lord Protector, my lord *Fleetwood*, and others about it, as also with Mr. Secretary himself, I have given him the trouble of a few lines in it, that as you have well hinted, there may be a joint harmony and concurrence of opinion and judgment between you, when you shall either of you speak with him or any other about it. But if this should be crossed, I shall then expect and truly be in hope of something else (which perhaps I have some discernings and conjectures) that the lord will raise, wherein no man shall have any glory to take to himself, nor any power or subtilty given him to hinder it, and which particular I think plainly to be very possible. But this, as also his whole work to be brought forth in his own time, and by his own means, is to be left to the Lord.' The letter is dated May 26. But what is that something else, which the discerning man is in expectation of? Can you, Sir, resolve it out of your former letters? I had by this very post a letter also from Mr. *Wood*.[b] And though I thought I had so fully engaged both his honesty and interest to help to dispatch this business, yet now he writes. 'For the business of advancement of learning, I shall wholly refer you to Mr. Secretary, who can much more exactly inform you of the true state thereof, than I write, had I never so much leisure.' Really I had expected a more generous answer from Mr. *Wood*. Sir *Robert Honywood*, lately arrived out of the *Low Countries*, tells of a singular invention found out there, of a clock, that goes most exactly true without a balance, which needs not to be wound up but once in eight days, the price of it being 7 l. sterl.[c] Mr. *Palmer*, who hath a shop as it were of all manner of inventions, is to have one shortly. And *Fromantile* having heard of it, gives out confidently, that he is able to make the like, or rather to exceed it.[d] I am wonderfully troubled at Mr. *Brereton*'s deserted condition. I fear

[a] Presumably William Brereton and John Dury.

[b] For Robert Wood, see above, p. 221n. For Wood's letter to Hartlib from Dublin, see HP 15/4/5A–B.

[c] This is a reference to Sir Robert Honywood (1601–86), politician and member of the Council of Trade. In 1655 and again in 1657, Honywood travelled to Holland where he served in the Dutch army. Hartlib probably refers to Christiaan Huygens's pendulum of 1658, described in his *Horologium* (1658).

[d] Mr Palmer (dates unknown) was a London instrument maker with a shop at Gray's Inn, see *Ephemerides* for 1654, HP 29/4/25, 29/6/5A and 29/79B. Ahasuerus Fromanteel, clockmaker in Southwark, London, was active between 1654 and 1685. He was the first to make pendulum clocks in England. See G. H. Baillie, *Watchmakers and Clockmakers of the World*, 2 vols (3rd edn, London, 1951), i, 115.

the next news you will hear, will be, that he is in prison, there being four judgments out against him.[a] I suppose you have heard of the launching of the gallant ship last week, which was called the *Richard*.[b] There had like a very sad thing here fallen out at that time; the wildness of the horses running away with my lord *Richard*'s coach, and breaking it altogether into pieces. My lord Protector was in it with major *Beake* and Mr. *Pierpoint*, as I take it, but none had any hurt, God be praised, but major *Beake*, who received some wounds.[c] I am persuaded the good angels had a special care of my lord Protector. The approaches are come to the walls of *Dunkirk*, whither my lord *Barrimore* and Mr. *Henry Laurence* are gone with a great number of other English gallants, as likewise out of *France*, to see the siege of that nest or den of pirates. [d] And though the chief witness against Dr. *Hewet* be escaped, yet there are so many other evidences against him, that it will go very hard with him.[e] Thus presenting you the promised learned papers, which could not be sent on Saturday last, I rest,

Honoured Sir,
your ever faithful obliged servant,
SAM. HARTLIB.

HARTLIB to BOYLE — 8 June 1658

From the printed version in Birch (ed.), *Works* (1744), v, 279–80. Also printed in Birch (ed.), *Works* (1772), vi, 111–12.

[a] Brereton's financial distress is not recorded.

[b] The ship, named *Richard*, with 70 guns, was built in 1658 and in 1660 was renamed *Royal James*. See W. Laird Clowes, *The Royal Navy. A History from the Earliest Times to the Present*, 7 vols (London, 1897–1903, reprinted New York, 1966), ii, 111.

[c] Hartlib refers to Richard Cromwell (1626–1712), a member of his father's government. Major Richard Beke (c. 1630–1707), was married to Cromwell's niece, Levina Whetstone. William Pierpoint (c. 1607–78), politician, was one of the Lord Protector's and Richard Cromwell's private advisors. He also occupied political offices after the Restoration.

[d] For the siege of Dunkirk see above, p. 277n. For Richard Barry, 2nd Earl of Barrymore, see above, p. 27n. For Henry Lawrence see see above, p. 193n. He became a member of Cromwell's Council of State.

[e] John Hewit or Hewett (1614–58), preacher. During the Protectorate he was engaged in correspondence with the conspirators of the Yorkshire rising, one of whom was Sir Henry Slingsby, for whom see above, p. 276n. Following Hewit's arrest, he was sentenced on 2 June 1658 and beheaded on 8 June. The witness mentioned by Hartlib may be John Stapley (1628–1701).

June 8, 58.

Honoured SIR,

I AM so out of love with my tormenting pains, that I have never a good will to mention them, but when they may be an occasion of ushering in some good communication or other, for the ease and health of many. This made me silent in my last, to complain of my wonted pains. But having gotten some new discovery from our common friend at *Dublin*, I can pardon myself, if I continue to say, that my body is still full of pains, though not so violent, God be praised, as heretofore, I voiding still abundance of little stones and gravel.[a] But the discovery is presented in these words: 'Near *Lambeth*, or at the farther end of it, is a house, where they make brass of copper and lapis calaminaris.[b] The pots of which metal do, in the melting, send forth store of white flowers, or flores. These are without any thing of corrosiveness, and a most precious medicine for your ulcer, if the Lord please to succeed it, and that you can apply them.' Thus far the discovery, which I must confess I like far better than those salivations you were pleased to speak of in your former. I received your civilities on Mr. *Beale*'s behalf, who wrote, before I got that letter, as followeth.[c] /p. 280/ 'I ever pray for the right honourable lady; she pleads for favour and countenance towards me; I cry out for common justice, that our enemies may not glory in our injustice against ourselves.[d] Without vanity I may say it, that I think I am the only man, that has so personally and cordially served, and by my education am fitted to be serviceable, with some credit, in many relations, in most of the chief parts of *England*; and yet, that am so cast off from favour, justice, or common mercy. But I thank God, who hath given me a heart above these things; and I think I see his providence in it, that, to punish my old pride, in the very flashes of false learning, he hath now placed me under the feet of them, that hate and abhor holy industry and true learning. If I could discern my present guilt, I hope I should rather endeavour to reform myself, than be willing to dwell in this furnace. Here I am sick of a parochial labyrinth. *But thy will be done in earth as it is in heaven*.[e] The holy angels, at thy command, must wait upon us poor mortals; and what am I, sinful wretch, that I should disdain, at thy pleasure, to lye under the feet of the worst of mankind!' The letter is dated May 27. Thus I was going to have answered to the other passages of your last of June 5, but that Mr. *Brereton*, Mr. *Dury*, and Mr. *Hack* have taken some hours from me in relating and repeating, or collating, the particulars of the great news, as they have been

[a] Hartlib refers to Benjamin Worsley.

[b] Lambeth in south London.

[c] Hartlib possibly refers to Boyle's letter of 5 June, which is not extant.

[d] For John Beale's difficulties and the aid he received from Lady Ranelagh and others see above, p. 276n.

[e] Beale quotes from the Lord's Prayer, Matthew 6, 10.

brought by several messengers, which also will be printed against Thursday next.[a] The sum of all is, that the whole Spanish army, coming to raise the siege of Dunkirk, is totally routed, and the foot wholly overthrown. Some thousands taken prisoners and slain. Very few on the English or French side.[b] The marshal *Hocquincourt*, that lately delivered *Hesdin*, killed; P. *de Condé* taken, but let go again; the general *Caracene* taken, with a number of other grandees.[c] Some of the *Stuarts* were present in the battle.[d] But the courage of the English soldiers was most instrumental in the victory; insomuch, that marshal *Turenne* gives an account to the king in no other words, but that the English had carried themselves above men. We now do expect to hear daily of the taking or surrender of that piratical den of thieves.[e] The court of *France* hath taken so kindly the visit of his highness, in his son-in-law, the lord *Falconbridge*, that they are resolved to send no less than four ambassadors to requite the same civility; one from the king, another from the queen, the third from their brother, the duke of *Anjou*, and the last from *Mazarin*.[f] My lord *Falconbridge* is returned, and cannot sufficiently express the great respect and entertainments he hath found at that court. But he could not prevail with his highness here for a longer reprieve of his uncle, Sir *H. Slingsby*, who was beheaded this day upon *Tower-hill* (with Dr. *Hewet*) which was all the favour shewn them, who were sentenced by the high court of justice to be hanged, drawn and quartered.[g]

[a] For William Brereton see above, p. 160n.; for John Dury see above, p. 56n., and for Theodore Haak see above, p. 252n.

[b] The news related to Hartlib is of the battle of the Dunes, 4/14 June 1658. The Spanish lost about 1,000 men and about 4,000 were taken prisoners. Not more than 400 French and English were killed. For the siege of Dunkirk see above, p. 277n. The printed account of the battle is presumably that in *Mercurius Politicus*, 419 (3–10 June 1658), pp. 581–2. *Mercurius Politicus* came out on Thursdays.

[c] This is a reference to Charles de Mouchy (1599–1658), maréchal d'Hocquincourt, maréchal de France, who passed into the service of the Spanish in May 1658 and delivered the fortress of Hesdin to the Spaniards. Louis II de Bourbon (1621–86), 2nd prince de Condé, distinguished French general, was one of the leaders of the Fronde and joined the Spanish army in 1653. Don Luis de Benavides, Carillo y Toledo, Marquis de Fromista y de Caracena, commanded the Spanish infantry in the battle of the Dunes.

[d] Charles Stuart and James, Duke of York, afterwards James II, took part in the battle of the Dunes on the Spanish side.

[e] Hartlib refers to Turenne, for whom see above, p. 276n.

[f] For the mission of Lord Fauconberg to France see above, p. 276n. The French mission was led by Charles, duc de Créqui de Blanchefort (c. 1624–87), 1st gentleman of the Bedchamber to Louis XIV, who presumably represented the King. Cardinal Jules Mazarin (1602–61) chief minister of France, was represented by his nephew Philip Mancini (1641–1707), Duke of Nevers. Chevalier Philibert Gramont (1621–1707) presumably represented either the Queen, Louis XIV's mother Anne of Austria (1601–66), or Philippe, Duke of Anjou (1640–1701), Louis XIV's brother. The 4th ambassador has not been identified.

[g] Both Lord and Lady Fauconberg acted on behalf of Slingsby, for whose crime see above, p. 276n. Slingsby's late wife, Barbara Bellasis, was the aunt of Lord Fauconberg. Lady Fauconberg appealed to the French ambassadors in order to secure Mazarin's intervention to save Slingsby's life. For John Hewit see above, p. 280n.