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# ARCHIBALD PITCAIRNE AND SCOTTISH HETERODOXY, c. 1688–1713*

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ABSTRACT. *This article argues that the Edinburgh physician Archibald Pitcairne made a significant and original contribution to European religious heterodoxy around 1700. Though Pitcairne has been studied by historians of medicine and scholars of literary culture, his heterodox writings have not been analysed in any detail. This is partly because of their publication in Latin, their relative rarity, and their considerable obscurity. The article provides a full examination of two works by Pitcairne: his* Solutio problematis de historicis; seu, inventoribus *('Solution of the problem concerning historians or inventors') (1688); and the* Epistola Archimedis ad Regem Gelonem *('Letter of Archimedes to King Gelo') (1706). As well as untangling their bibliographical and textual difficulties, the article places these tracts in the context of Pitcairne's medical, mathematical, and religious interests. A range of readers deplored the sceptical implications of the pamphlets, but others, particularly in free-thinking circles in the Netherlands, admired Pitcairne's work. And yet Pitcairne himself was no atheist. He doubted a priori proofs of God's existence, but had been convinced by a version of the argument from 'design'. The article concludes by relating Pitcairne's complex religious attitudes to his background in late seventeenth-century Scotland.*

What was the Scottish contribution to late seventeenth- and early eighteenth-century religious heterodoxy? To what extent did Scotland, by the 1760s a centre of moderate enlightenment, participate in more radical free-thinking in the years around 1700? Most scholars interested in these problems have approached them through the case of Thomas Aikenhead, the twenty-year-old former student executed for blasphemy in Edinburgh in January 1697. Aikenhead was said to have denounced theology, criticizing the doctrines of

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* I would like to thank Davide Antonio Secci for translating Pitcairne's *Epistola*, Juan Lewis for translating Halyburton's inaugural lecture, and Calum Maciver for commenting on my own translations. I am especially grateful to Michael Hunter for many conversations about Pitcairne, and for reading a draft of the article. I benefited from discussions with members of the History of Science, Medicine, and Technology research group at the University of Edinburgh. I also thank the journal's referees for their suggestions.

the Trinity, the Incarnation, and salvation through Christ. He referred to the Old Testament as 'Ezra's fables', echoing the arguments of Thomas Hobbes and Benedict de Spinoza that Moses was not the author of the Pentateuch. He called Christ an 'Impostor', Moses a magician, said that the world had existed eternally, and, again recalling Spinoza, suggested that God and nature were one and the same substance. The main evidence concerning Aikenhead's attitudes and his prosecution has long been easily available, collected in the nineteenth-century published *State trials*.[1] Partly for this reason, his blasphemy has been studied in detail. Michael Hunter has argued that, though Aikenhead had a coherent set of irreligious opinions, it was the aggressive, proselytizing manner in which he expressed himself that brought about his execution. Michael Graham has emphasized the febrile political context of the Aikenhead case: a panic over profanity and heterodoxy whipped up by the Kirk, whose presbyterian constitution, re-established in 1690, seemed at risk.[2]

Aikenhead's conviction says a lot about Scotland in the 1690s, but it is less clear that his trial uncovered a distinct Scottish style of heterodoxy. Most of his alleged views were derivative of Dutch and English writers, including Charles Blount as well as Hobbes and Spinoza. The evidence we have suggests an incautious youth striking a pose, and expressing provocative slogans to entertain his friends, rather than a sincere thinker with deeply considered opinions. The purpose of this article, then, is to shift our attention away from Aikenhead towards a stream of heterodox thought more substantial than that recalled in the Edinburgh courtroom in December 1696. My main focus is on a group of publications by Archibald Pitcairne (1652–1713), a physician, mathematician, neo-Latin poet, playwright, Jacobite, and *bon vivant*. Pitcairne was, I contend, the most significant heterodox thinker that Scotland produced in the late seventeenth and early eighteenth centuries. Moreover, his career illustrates how religious free-thinking could intersect with some of the period's wider intellectual trends. Because of the diversity of Pitcairne's interests, heterodox speculation became entwined in his writings with contemporary developments in medicine, mathematics, and classical scholarship. Scottish heterodoxy, in the works of Pitcairne, was characterized by erudition, allusion, and playful obscurity.

[1] T. B. Howell and T. J. Howell, eds., *Cobbett's complete collection of state trials* (34 vols., London, 1809–1928), XIII, cols. 917–40, quotations at col. 919.

[2] Michael Hunter, '"Aikenhead the atheist": the context and consequences of articulate irreligion in the late seventeenth century', in Michael Hunter and David Wootton, eds., *Atheism from the Reformation to the Enlightenment* (Oxford, 1992), pp. 221–54; Michael F. Graham, *The blasphemies of Thomas Aikenhead: boundaries of belief on the eve of the Enlightenment* (Edinburgh, 2008); idem, 'Kirk in danger: presbyterian political divinity in two eras', in Bridget Heal and Ole Peter Grell, eds., *The impact of the European Reformation: princes, clergy and people* (Aldershot, 2008), pp. 167–88.

Pitcairne has attracted plentiful attention from historians of medicine and natural philosophy,[3] as well as students of Scottish literary culture;[4] recently his reputation as an imaginative writer has benefited from the editorial efforts of John and Winifred MacQueen.[5] But though some of these scholars have mentioned Pitcairne's heterodox writings in passing, none has examined them in depth. This is partly because the works were published in Latin, have complicated textual histories, and are now relatively rare. But what is a challenge for modern scholarship is also indicative of the nature of Pitcairne's contemporary influence. By writing in Latin, and publishing some editions in the Netherlands, Pitcairne aimed his heterodox works at learned audiences and found readers beyond Scotland. The extent of his influence is difficult to measure, but his work was known to some of the most important promoters of irreligious writing in eighteenth-century Europe.

Archibald Pitcairne was born in Edinburgh in 1652, the son of a merchant with landed ancestors.[6] Graduating MA from Edinburgh's town college, Pitcairne began legal training, before moving to France and studying medicine. He received a medical degree from the University of Rheims in 1680, returning to Edinburgh to be a founder member of its Royal College of Physicians in 1681.

[3] Useful starting points include Arnold Thackray, *Atoms and powers: an essay on Newtonian matter-theory and the development of chemistry* (Cambridge, MA, 1970), pp. 45–9; Robert E. Schofield, *Mechanism and materialism: British natural philosophy in an age of reason* (Princeton, NJ, 1970), pp. 40–62; Theodore M. Brown, 'Medicine in the shadow of the *Principia*', *Journal of the History of Ideas*, 48 (1987), pp. 629–48; Anita Guerrini, 'The tory Newtonians: Gregory, Pitcairne, and their circle', *Journal of British Studies*, 25 (1986), pp. 288–311; eadem, 'Archibald Pitcairne and Newtonian medicine', *Medical History*, 31 (1987), pp. 70–83; eadem, 'The varieties of mechanical medicine: Borelli, Malpighi, Bellini, and Pitcairne', in Domenico Bertoloni Meli, ed., *Marcello Malpighi: anatomist and physician* (Florence, 1997), pp. 111–28; Akihito Suzuki, 'Psychiatry without mind in the eighteenth century: the case of British iatro-mathematicians', *Archives Internationales d'Histoire des Sciences*, 48 (1998), pp. 119–46; John Friesen, 'Archibald Pitcairne, David Gregory and the Scottish origins of English tory Newtonianism, 1688–1715', *History of Science*, 41 (2003), pp. 163–91. Other works are cited below.

[4] See esp. Douglas Duncan, *Thomas Ruddiman: a study in Scottish scholarship of the early eighteenth century* (Edinburgh, 1965), esp. pp. 15–21; John MacQueen, *The Enlightenment and Scottish literature*, I: *Progress and poetry* (Edinburgh, 1982), pp. 1–6; John H. Appleby and Andrew Cunningham, 'Robert Erskine and Archibald Pitcairne – two Scottish physicians' outstanding libraries', *Bibliotheck*, 11 (1982–3), pp. 3–16; David Reid, 'Rule and misrule in Lindsay's *Thrie estaitis* and Pitcairne's *Assembly*', *Scottish Literary Journal*, 11 (1984), pp. 5–24; D. K. Money, *The English Horace: Anthony Alsop and the tradition of British Latin verse* (Oxford, 1998), pp. 142–8.

[5] Archibald Pitcairne, *The Latin poems*, ed. and trans. John and Winifred MacQueen (Assen, 2009); Archibald Pitcairne, *The phanaticks*, ed. John MacQueen (Scottish Text Society, Fifth Series, vol. 10, Woodbridge, 2012); John MacQueen, '*Tollerators and con-tollerators* (1703) and Archibald Pitcairne: text, background and authorship', *Studies in Scottish Literature*, 40 (2014), pp. 76–104, http://scholarcommons.sc.edu/ssl/vol40/iss1/10.

[6] Fuller biographies include John MacQueen and Winifred MacQueen, 'Introduction', in Pitcairne, *Latin poems*, pp. 1–47, at pp. 5–34; Anita Guerrini, 'Pitcairne, Archibald (1652–1713)', *Oxford dictionary of national biography* (*ODNB*); Charles Webster, *An account of the life and writings of the celebrated Dr Archibald Pitcairne* (Edinburgh, 1781).

Though he was named as one of Edinburgh's nominal professors of medicine in 1685, his only academic teaching post was the chair of the practice of medicine at Leiden University.[7] Pitcairne took up this position in April 1692, giving an inaugural lecture in which he argued that physicians should abandon their traditional approaches to medicine and instead emulate Newton's natural philosophy.[8] He stayed in Leiden for little more than a year, but his teaching began to win followers. He spent the rest of his career in Scotland, where he continued to develop his iatro-mathematical theory of medicine. Synthesizing ideas from the Italians Alfonso Borelli and Lorenzo Bellini, Pitcairne claimed to find a new certainty for medicine in mathematical reasoning.[9] He also engaged in literary projects, as a Latin poet and author of vernacular satires, which circulated in manuscript, notably his anti-presbyterian play *The assembly* (1691–2) and poem *Babell* (1692).[10]

Pitcairne built a successful medical career and had many aristocratic patients. Unlike Aikenhead, he developed his religious and political views over the course of his middle age, drawing on a formidable learning. His social status and connections perhaps made it unlikely that any heterodox attitudes he professed would trigger the sort of investigation suffered by Aikenhead. Nevertheless, Pitcairne had at least one unwelcome encounter with the law. In 1700, he was briefly imprisoned by the Scottish privy council after a letter was intercepted in which he maligned the government and envisaged its overthrow. He successfully petitioned for his freedom, blaming the letter's 'groundless news' and 'affectations of ffancy' on 'a small Excess', presumably of alcohol.[11] While Pitcairne's Jacobitism was obvious, his religious attitudes were enigmatic. He apparently believed that he was haunted by the ghost of a dead friend.[12] More unusually, he gained a reputation for religious heterodoxy. In 1690, he was accused of publicly questioning God's existence, while participating in the graduation ceremony at Edinburgh's town college.[13] In 1710, as we shall see

[7] G. A. Lindeboom, 'Pitcairne's Leyden interlude described from the documents', *Annals of Science*, 19 (1963), pp. 273–84.

[8] Archibald Pitcairne, *Archibaldi Pitcarnii Scoti dissertationes medicae* (Edinburgh, 1713), pp. 1–13; in English translation in *The works of Dr Archibald Pitcairn* (London, 1715), pp. 7–24.

[9] Theodore Brown, *The mechanical philosophy and the 'animal oeconomy'* (New York, NY, 1981), chs. 4–5.

[10] See the works cited in n. 5 (*The assembly* was given the title *The phanaticks* by John MacQueen) and Archibald Pitcairne, *Babell; a satirical poem, on the proceedings of the general assembly in the year M.DC.XCII*, ed. G. R. Kinloch (Maitland Club, vol. 6, Edinburgh, 1830).

[11] Privy council acta, 13 July 1699 – 5 May 1703, National Records of Scotland, Edinburgh, PC1/52, pp. 61–4, 66–8, quotations at p. 63; W. T. Johnston, ed., *The best of our owne: letters of Archibald Pitcairne, 1652–1713* (Edinburgh, 1979), pp. 25–32.

[12] John MacQueen, 'Introduction', in Pitcairne, *Phanaticks*, pp. xxxii–xxxiii; Thomas M'Crie, ed., *The correspondence of the Rev. Robert Wodrow* (3 vols., Wodrow Society, Edinburgh, 1842–3), I, p. 437; Robert Wodrow, *Analecta: or, materials for a history of remarkable providences* (4 vols., Maitland Club, vol. 60, Edinburgh, 1842–3), II, pp. 47–8, 255, 379, III, pp. 520–2.

[13] [Alexander Monro,] *Presbyterian inquisition; as it was lately practised against the professors of the colledge of Edinburgh* (London, 1691), pp. 28, 39.

in detail below, the presbyterian Thomas Halyburton used his inaugural lecture as professor of divinity at St Andrews University to expose the sceptical arguments of Pitcairne's *Epistola Archimedis ad Regem Gelonem*.[14] In 1712, Pitcairne threatened to sue another presbyterian minister, James Webster, who had publicly called him a 'deist'.[15] On his death in 1713, the minister and historian Robert Wodrow recorded that Pitcairne was 'a professed Deist, and by many alledged to be ane Atheist, though he has frequently professed his belife of a God, and said he could not deny a Providence'. Wodrow had also heard that Pitcairne met friends on Sundays to mock the scriptures.[16] The most intriguing suggestion of Pitcairne's irreligious attitudes is a manuscript dialogue, attributed to Pitcairne, which has been edited by Michael Hunter. 'Pitcairneana' expressed, in the voice of the character 'Incredulous', several atheistic opinions, asserting the incoherence of the concept of incorporeal substance and questioning whether the universe was created.[17]

Despite this evidence, I shall argue that Pitcairne was not an atheist, but rather a heterodox Christian. As we shall see, he advanced arguments sceptical of historical testimony, potentially undermining the credibility of the Bible. He preferred a simplified religion, founded on reason, to the doctrinal complexities upheld by priests. He was hostile to clerical power more generally. He doubted that *a priori* metaphysical reasoning could prove that there was a deity; nevertheless, his anatomical studies had convinced him of the existence of God. In his mischievous anti-clericalism, and his fondness for natural religion, he resembled his English contemporaries Charles Blount and John Toland, who are usually described as deists. As recent scholarship has demonstrated, however, the term 'deist' is slippery and imprecise, 'a matter of convenience rather than an aid to analysis'.[18] And Pitcairne was, by background at least, a Scottish episcopalian. For him, it was not English high-churchmen, but presbyterian fundamentalists, whose influence was to be resisted. But while his

[14] Thomas Halyburton, 'Oratio inauguralis', in *Natural religion insufficient; and reveal'd necessary to man's happiness in his present state* (Edinburgh, 1714), first pagination sequence, pp. 1–24.

[15] John Lauder, *The decisions of the lords of council and session, from June 6th, 1678, to July 30th, 1712* (2 vols., Edinburgh, 1759–61), II, pp. 756–7; Robert Chambers, *Traditions of Edinburgh* (Edinburgh, 1996), pp. 160–1. The case is discussed in David E. Shuttleton, 'Bantering with scripture: Dr Archibald Pitcairne and articulate irreligion in late seventeenth-century Edinburgh', in Claire Jowitt and Diane Watt, eds., *The arts of 17th-century science: representations of the natural world in European and North American culture* (Aldershot, 2002), pp. 58–73, at pp. 68–9.

[16] Wodrow, *Analecta*, I, pp. 322–3, II, p. 255 (quotation).

[17] Michael Hunter, '*Pitcairneana*: an atheist text by Archibald Pitcairne', *Historical Journal*, 59 (2016), pp. 595–621.

[18] Robert E. Sullivan, *John Toland and the deist controversy: a study in adaptations* (Cambridge, MA, 1982), p. 232 (quotation); Frederick C. Beiser, *The sovereignty of reason: the defense of rationality in the early English Enlightenment* (Princeton, NJ, 1996), esp. pp. 243, 246–8; Isabel Rivers, *Reason, grace, and sentiment: a study of the language of religion and ethics in England, 1660–1780*, II: *Shaftesbury to Hume* (Cambridge, 2000), ch. 1; Wayne Hudson, *The English deists: studies in early Enlightenment* (London, 2009).

heterodoxy took its rise from some attitudes common to Restoration episcopalians, Pitcairne was increasingly out of sympathy with the evolving character of episcopalianism.

Before returning to the problem of classifying Pitcairne's attitudes, the article analyses two publications with heterodox implications. The *Solutio problematis de historicis; seu, inventoribus* (1688), which was published under Pitcairne's name, reflected his studies in medicine, mathematics, and history. Though much of the *Solutio* concerned a medical controversy unrelated to Christian beliefs, at least one critic thought that the work manifested its author's irreligious attitudes. In order to understand the *Solutio*'s complexities, it is necessary to locate it in multiple intellectual contexts. The article then turns to Pitcairne's *Epistola Archimedis ad Regem Gelonem* (1706). Scholars have recognized that this was a heterodox work, but it has not hitherto been discussed in any detail. Finally, we consider the evidence that convinced Pitcairne that, for all the difficulties philosophers had in proving his existence, there was indeed a God.

## I

Pitcairne's *Solutio problematis de historicis; seu, inventoribus* ('Solution of the problem concerning historians or inventors') was published in Edinburgh by John Reid in September 1688. A short but densely argued Latin tract, it was dedicated to Pitcairne's fellow physicians Archibald Stevenson (his future father-in-law) and Andrew Balfour.[19] A revised and expanded edition was published at Leiden in 1693, and it is probably this version that appeared in Pitcairne's collected medical dissertations of 1701. The text was again slightly amended for inclusion in the edition of his medical dissertations published in Edinburgh in 1713. It was in a translation of the 1713 version that the *Solutio* first became available in English in 1715.[20] Before this, the significance of Pitcairne's work was accessible only to the learned, though the controversy it generated was conducted in English.

The *Solutio* set out what George Hepburn, Pitcairne's student and defender, later described as 'a rule for deciding controversies about Inventions in Medicine and Mathematicks'.[21] The main issue at stake concerned the circulation of blood in the human body. Was this a new discovery by William Harvey (1578–1657), and thus an achievement of modern investigations, or rather a

[19] Archibald Pitcairne, *Archibaldi Pitcarnii solutio problematis de historicis; seu, inventoribus* (Edinburgh, 1688), p. 3.

[20] Archibald Pitcairne, *Archibaldi Pitcairnii dissertationes medicae* (Rotterdam, 1701), pp. 82–101; idem, *Dissertationes medicae* (1713), pp. 96–117; *Works of Pitcairn*, pp. 135–63. The unnumbered contents pages of the 1701 and 1713 *Dissertationes* indicate that an edition of the *Solutio* 'rursus & auctior' was published at Leiden in 1693. No copy has been found. The English translation of Pitcairne's *Works* was republished in 1727 and 1740.

[21] George Hepburn, *Tarrugo unmasked, or an answer to a late pamphlet intituled, Apollo mathematicus* (Edinburgh, 1695), p. [iv].

phenomenon known to Hippocrates and ancient medicine? Though Harvey's claim is now generally accepted, a number of seventeenth-century authorities believed that Hippocrates knew of blood circulation. Pitcairne rejected their opinion, attributing the discovery to Harvey. Pitcairne did not specify which of Hippocrates's supporters had prompted his examination of the subject. Recent scholars have suggested that Pitcairne was responding to the Dutch medic Theodoor Jansson van Almeloveen or to Hippocrates's French translator and biographer, André Dacier.[22] An ally of Pitcairne named two others who accepted Hippocrates's claim: Johannes Antonides van der Linden, an editor of Hippocrates and professor of medicine at Leiden until his death in 1664, and his successor Charles Drelincourt. Drelincourt taught alongside Pitcairne when the latter worked at Leiden.[23] Whether or not Pitcairne had a particular target in mind, he was praising modern learning in one of the areas where it was perceived to be in competition with ancient wisdom. Indeed, blood circulation was soon claimed for modern science in William Wotton's *Reflections upon ancient and modern learning* (1694), a key publication in the English dispute over ancients and moderns.[24] Nevertheless, Pitcairne's varied intellectual preoccupations warn us against categorizing him as either an 'ancient' or a 'modern'. The *Solutio* had nothing to say about the broader philosophical and literary dimensions of the debate.[25]

In making his argument, Pitcairne was not only concerned to review passages in Hippocrates's writings that were alleged to refer to blood circulation. More ambitiously, Pitcairne tried to establish logical procedures for assessing all claims of intellectual priority and reliability. He began by distinguishing between two types of case: those in which the 'authority of the inventors or historians…enters into the conditions of the problem', and others in which their authority does not enter 'into the conditions of the problem'.[26] The subject of

[22] MacQueen and MacQueen, 'Introduction', p. 9; Guerrini, 'Pitcairne, Archibald'; eadem, 'Pitcairne and Newtonian medicine', p. 72. In both articles, Guerrini argues that Pitcairne was responding to Dacier. But Dacier's edition seems to have been first published in 1697: [André Dacier, ed.,] *Les oeuvres d'Hippocrate, traduites en François, avec des remarques* (2 vols., Paris, 1697), I, sigs. eeiiij r–[eev]v, pp. 315–16.

[23] J[ames] J[ohnston], *A short answer to a late pamphlet against Doctor Pitcairn's dissertations* (Edinburgh, 1702), pp. 19–20. See Johannes Antonides van der Linden, ed., *Magni Hippocratis Coi opera omnia. Graece & Latine edita* (2 vols., Leiden, 1665). On Van der Linden and Drelincourt, see Tijs Huisman, 'The finger of God: anatomical practice in seventeenth-century Leiden' (Ph.D. thesis, Leiden, 2008), esp. pp. 88–95; G. A. Lindeboom, *Herman Boerhaave: the man and his work* (London, 1968), pp. 29–33; idem, 'Pitcairne's Leyden interlude', p. 280.

[24] William Wotton, *Reflections upon ancient and modern learning* (London, 1694), pp. 206–18, which cited Van der Linden's edition of Hippocrates at p. 208.

[25] On the debates in England and France, see esp. Joseph M. Levine, 'Ancients and moderns reconsidered', *Eighteenth-Century Studies*, 15 (1981), pp. 72–89; idem, *The battle of the books: history and literature in the Augustan age* (Ithaca, NY, 1991); Larry F. Norman, *The shock of the ancient: literature & history in early modern France* (Chicago, IL, 2011).

[26] Pitcairne, *Solutio problematis*, pp. 3–4 ('Vel enim auctoritas inventoris seu historici Problematis conditiones non ingreditur vel eas ingreditur').

the first category was historical testimony. When examining a report of an event in the past, readers must accept that its writer was a reliable witness in order to believe his or her statements. Thus, the writer's authority is part of the scholarly problem of verifying his or her testimony about the past.[27] But the question of whether Hippocrates knew of blood circulation was not of this kind. To resolve the debate, it was necessary to set aside the high opinion that many physicians held of Hippocrates, and evaluate the evidence in his known works. To be counted the author of an 'invention', Pitcairne argued, a writer must clearly have stated the principles from which the invention could be derived. Moreover, the writer ought to have explained the invention itself, and should not have concentrated on matters of less significance, or points that contradict the supposed discovery. Having set out these abstract principles, Pitcairne went on to argue that Hippocrates had known of some facts relating to circulation, but that he did not exhibit an understanding sufficient to be called the discoverer of the phenomenon.[28]

As well as addressing this question, Pitcairne took the opportunity of publication to present a mathematical discovery that he attributed to his friend David Gregory, professor of mathematics at Edinburgh's town college.[29] Indeed, another associate of Pitcairne claimed that the *Solutio* was 'Writen [sic] on purpose to serve a friend', presumably Gregory.[30] Gregory's breakthrough – what is now referred to as the binomial theorem – derived from Isaac Newton's work on calculus, which the English mathematician developed in the 1660s, but which remained unpublished in 1688. John Craig, one of Gregory's students, visited Cambridge in 1685, read some of Newton's manuscripts, and communicated his understanding to Gregory and Pitcairne. Gregory then elaborated the principles described by Craig. After the appearance of the *Solutio*, Craig expressed himself 'astonished…to find no mention made of Mr Newton' in the tract.[31] But Gregory had worked more independently of Newton than Craig recognized. If the report of Gregory's findings in the *Solutio* was meant to assert the Scottish mathematician's priority – in the same way as Pitcairne had claimed discovery of the circulation for Harvey – Newton seems to have taken little offence. It was only in 1691, in a letter to Gregory,

[27] Ibid., pp. 12–13.

[28] Ibid., pp. 4–8.

[29] Ibid., pp. 8–11. On Gregory, in addition to the works cited in n. 3, see Christina Eagles, 'David Gregory and Newtonian science', *British Journal for the History of Science*, 10 (1977), pp. 216–25; P. D. Lawrence and A. G. Molland, 'David Gregory's inaugural lecture at Oxford', *Notes and Records of the Royal Society of London*, 25 (1970), pp. 143–78.

[30] J[ohnston], *Short answer*, p. 20.

[31] H. W. Turnbull, J. F. Scott, A. Rupert Hall, and Laura Tilling, eds., *The correspondence of Isaac Newton* (7 vols., Cambridge, 1959–77), II, pp. 115, 134, 153, III, pp. 8, 9 (quotation); Richard S. Westfall, *Never at rest: a biography of Isaac Newton* (Cambridge, 1980), pp. 513–14; Richard Nash, *John Craige's* Mathematical principles of Christian theology (Carbondale, IL, 1991), pp. 8–10. See also Niccolò Guicciardini, *The development of Newtonian calculus in Britain, 1700–1800* (Cambridge, 1989), pp. 12–13.

that Newton referred to Craig's role as an intermediary between Cambridge and Edinburgh.[32] Newton received Pitcairne at Cambridge in March 1692, while the latter was travelling to take up his chair in Leiden. Newton gave Pitcairne a nearly complete manuscript 'On the nature of acids', which Pitcairne lent to Gregory, and both Scots quickly absorbed its ideas into their medical thinking.[33] Whatever importance Newton and Pitcairne attached to discovery and priority, they were willing to share their findings. Nevertheless, it is significant that Pitcairne removed all reference to Gregory and the binomial theorem when he revised the *Solutio* for republication.

In fact, the section of Pitcairne's pamphlet that proved especially offensive was the discussion of cases in which the inventor's authority 'enters into the conditions of the problem'. To understand the provocation, we need to place the *Solutio* in a further context: that of the rivalry among Edinburgh physicians in the 1690s. In 1695, *Apollo mathematicus: or the art of curing diseases by the mathematicks*, a book ridiculing Pitcairne, was published in Edinburgh. Though anonymous, pamphlets published in response revealed it to be the work of the physician Sir Edward Eizat. Eizat's attack was one product of a long-running controversy over the treatment of fevers, in which Pitcairne and other fellows of the Royal College exchanged polemics with Andrew Brown, a self-taught Scottish disciple of the English empirical physician Thomas Sydenham.[34] Pitcairne and Eizat, as traditionally educated members of the medical establishment, should have been able to agree in their opposition to Brown's unconventional practice. But when in November 1694 Pitcairne read a dissertation at the Royal College about the cure of fevers, he exposed the deep divisions created by his own approach. *Apollo mathematicus* was the most significant response to Pitcairne, but Eizat was not alone in his views: Pitcairne's allies linked Eizat to the physicians Sir Robert Sibbald and Robert Trotter.[35] The Royal College split into two factions, and in November 1695, Sibbald's group engineered the suspension of Pitcairne and his associates.[36] By this time, the debate over Pitcairne's writings was no

[32] *Correspondence of Newton*, III, pp. 170–9, 181–3.

[33] Ibid., III, pp. 205–14; Simon Schaffer, 'The glorious revolution and medicine in Britain and the Netherlands', *Notes and Records of the Royal Society of London*, 43 (1989), pp. 167–90, at pp. 174–5.

[34] On the fever dispute, see Andrew Cunningham, 'Sydenham versus Newton: the Edinburgh fever dispute of the 1690s between Andrew Brown and Archibald Pitcairne', *Medical History*, supplement 1 (1981), pp. 71–98; Anita Guerrini, '"A club of little villains": rhetoric, professional identity and medical pamphlet wars', in Marie Mulvey Roberts and Roy Porter, eds., *Literature and medicine during the eighteenth century* (London, 1993), pp. 226–44; Eric Grier Casteel, 'Entrepot and backwater: a cultural history of the transfer of medical knowledge from Leiden to Edinburgh, 1690–1740' (Ph.D. thesis, Los Angeles, 2007), pp. 73–8.

[35] Hepburn, *Tarrugo unmasked*, p. [iii]; *A modest examination of a late pamphlet entituled Apollo mathematicus* ([Edinburgh,] 1696), esp. p. 8.

[36] W. S. Craig, *History of the Royal College of Physicians of Edinburgh* (Oxford, 1976), pp. 410–18; Casteel, 'Entrepot and backwater', pp. 116–24.

longer confined to intramural discussions and learned Latin, but burst forth in vernacular pamphlets laced with gossip and insults.

In *Apollo mathematicus*, Eizat reviewed Pitcairne's methodological pronouncements across his career. According to Eizat, Pitcairne had been wrong in his Leiden inaugural lecture to claim that medicine was held back by the divisions between philosophical sects. It was absurd for Pitcairne to propose mathematics as a solution.[37] Indeed, Pitcairne falsely promised to bring certainty to medicine, which in Eizat's view was a 'practical Art' based on trial and error, following the example of Hippocrates.[38] The focus of Eizat's critique was the unhelpful, indeed dangerous, appropriation of mathematical methods by Pitcairne and his supporters. Furthermore, Eizat insinuated that Pitcairne's personal behaviour and immoral conduct compromised his medical practice. According to Eizat, doctors who held mistaken theories did less harm to their patients than other physicians who were addicted to 'Drinking, or lying and Swearing, bantering the Scripture, and ridiculing Religion.' 'For how shall he that Fears not GOD regard the Life of Man? or he that destroys his own Health with Surfeiting and Drunkenness, prescribe good Rules for the Health of another?'[39]

According to Eizat, it was not only Pitcairne's lifestyle that was irreligious, but also his probabilistic analysis of historical testimony. In this respect, the *Solutio* had echoed some of the assumptions of recent latitudinarian historians, including Edward Stillingfleet and the Scot Gilbert Burnet, from 1689 bishops of Worcester and Salisbury respectively. Their historical approach was made explicit in John Locke's *Essay concerning human understanding* (1689), which explained that one of the grounds of probable belief was the 'Testimony of others'. When evaluating testimonies, Locke argued, we should consider '1. The Number. 2. The Integrity. 3. The Skill of the Witnesses. 4. The Design of the Author, where it is a Testimony out of a Book cited. 5. The Consistency of the Parts, and Circumstances of the Relation. 6. Contrary Testimonies.'[40] Covering some of these points, the *Solutio* asserted that readers of a historical source must evaluate the credibility of its author. Pitcairne had gone on to argue that historical accounts mediated by persons other than their original authors were liable to alteration in the process. Testimony that was passed on

[37] [Edward Eizat,] *Apollo mathematicus: or the art of curing diseases by the mathematicks, according to the principles of Dr Pitcairn* ([Edinburgh,] 1695), esp. pp. 32–4, 42–3.

[38] Ibid., pp. 15–17, 32, 49 (quotation), 96; Hepburn, *Tarrugo unmasked*, pp. 7–9.

[39] [Eizat,] *Apollo mathematicus*, pp. 34, 35.

[40] Barbara J. Shapiro, *Probability and certainty in seventeenth-century England: a study of the relationships between natural science, religion, history, law, and literature* (Princeton, NJ, 1983), esp. pp. 139–52, 156–8; John Locke, *An essay concerning human understanding*, ed. Peter H. Nidditch (Oxford, 1975), p. 656 (IV.xv.4). For other perspectives on the epistemology of the latitudinarians and their contemporaries, see John Spurr, '"Rational religion" in Restoration England', *Journal of the History of Ideas*, 49 (1988), pp. 563–85; R. W. Serjeantson, 'Testimony and proof in early modern England', *Studies in the History and Philosophy of Science*, 30 (1999), pp. 195–236.

orally, rather than in writing, was also vulnerable to being partially forgotten in transmission.[41] Quoting in English translation the passage in the *Solutio* outlining these principles, Eizat concluded that Pitcairne's 'Doctrine strikes at the Root, and shakes the Foundation of all historical Certainty, whether the History be Sacred or Profane.' Biblical narratives depended on the reliability of their writers, and had been passed down through many hands.[42] Thus it was dangerously sceptical for Pitcairne to allege that 'we are more certain of things demonstrated' – demonstrated by mathematical reasoning – 'than of any thing taken from a belief in history'.[43] Eizat countered that there were some matters not subject to formal demonstration that nevertheless 'carry such an Evidence along with them, as determines almost necessarily our Assent'. Christ's resurrection fell into this category. The alarming implication of Pitcairne's scepticism was that we should doubt even Christian history.[44]

For George Hepburn, one of the defenders of Pitcairne among the Edinburgh medical community, Eizat's denial of scepticism flew in the face of common sense. Eizat's argument would suggest that the stories 'told by travellers and seamen about the Towns in *China*, are as evidently true and certain, as it is evident that two and two make four'. Moreover, Pitcairne had warned against any anti-Christian use of his analysis. Here, Hepburn quoted a sentence from the *Solutio* that Eizat had ignored: 'if Aristotle and Hippocrates are accepted as infallible, we can be more certain about the things handed down [by them], than about other things that we accept on trust from other historians'.[45] According to Hepburn, this rather arcane statement proved that the *Solutio* 'treats only of Historians or Observators that are not inspir'd', and that Pitcairne thought that 'we have more than an Historical certainty of what is taught in the sacred Scriptures'.[46] Whether or not Pitcairne intended his sentence to convey this meaning is unclear: he did not believe that Hippocrates or Aristotle was infallible, and yet he did not explicitly say that the Bible did have this quality. The sentence Hepburn quoted began 'Eadem de caussa [i.e. causa]' – 'for the same reason' – linking it logically to the previous sentence, in which Pitcairne argued that orally transmitted testimony was less reliable

[41] Pitcairne, *Solutio problematis*, pp. 12–13. The dependence of Roman Catholic doctrine on oral tradition was a key target of latitudinarian polemic: see e.g. John Tillotson, *The rule of faith: or an answer to the treatise of Mr I. S. entituled, Sure-footing* (London, 1666).

[42] [Edward Eizat,] *A discourse of certainty: wherein you have a further proof of the power of the mathematicks, and of the profound knowledge of A. P. M. D.* ([Edinburgh,] 1695), pp. 11–13, quotation at p. 13. The work was published with *Apollo mathematicus*, with a continuous register, but a separate title page and pagination sequence. See also Suzuki, 'Psychiatry without mind', p. 130.

[43] Pitcairne, *Solutio problematis*, p. 13 ('certiores nos esse de demonstratis, quam de ulla re ab historiae fide desumpta').

[44] [Eizat,] *Discourse of certainty*, p. 14; Shuttleton, 'Bantering with scripture', pp. 67–8.

[45] Hepburn, *Tarrugo unmasked*, pp. [iii]–[iv]; Pitcairne, *Solutio problematis*, p. 14 ('si *Aristoteles* & *Hippocrates* concedatur fuisse infallibiles, certiores esse poterimus de iis, quae illi tradidere, quam de aliis, quae aliorum historicorum fidei acceptum referimus').

[46] Hepburn, *Tarrugo unmasked*, p. [iv].

than testimony in writing. And the quoted sentence was followed by another, which concluded the paragraph, stating that 'we are always able to be more certain about the truth of the observations of those who are able to repeat [their observations] at will, than about observations that were formerly related and cannot be established again'.[47] Again, this did nothing to limit the scope of Pitcairne's scepticism. In spite of Hepburn's attempts to defend his mentor, it is evident that the *Solutio* could be understood to promote a general scepticism towards all historical texts.

Hepburn sought to minimize the likelihood that readers would extend Pitcairne's strictures from secular to sacred texts. But if Pitcairne himself thought about the obvious implications of his argument for the authority of the Bible, he was not alone. Indeed, in 1699, Pitcairne's former associate John Craig would explicitly analyse the theme in his *Theologiae Christianae principia mathematica*. To understand this aspect of the *Solutio*'s significance, we must introduce yet another context: the development of algebraic analyses of probability. Stimulated by the demands of legal reasoning, the quantitative approaches to chance of Christiaan Huygens and the Port-Royal *Logic* (1662), and more recently by Locke's discussion of degrees of assent in the *Essay* and the mathematical achievements of Newton's *Principia* (1687), the 1690s saw a proliferation of attempts to understand probability.[48] In 1692, John Arbuthnot, a Scottish mathematician and friend of Gregory and Pitcairne, published *Of the laws of chance*. This work disseminated for the first time in English the principles of Huygens's ground-breaking work on probability *De ratiociniis in ludo aleae* (1657).[49] In a medical dissertation of 1693, Pitcairne himself drew on the reasoning outlined in Huygens's work.[50] And in 1699, the scholarly English clergyman George Hooper wrote a short paper for the Royal Society's *Philosophical Transactions* on 'A calculation of the credibility of human testimony'. More mathematical than Pitcairne's discussion in the *Solutio*, Hooper considered

[47] Pitcairne, *Solutio problematis*, p. 14 ('semper certiores nos esse posse de veritate earum observationum, quae pro libitu rursus institui, quam quae olim peractae rursus institui non possunt').

[48] See Ian Hacking, *The emergence of probability: a philosophical study of early ideas about probability, induction and statistical inference* (2nd edn, Cambridge, 2006); Douglas Lane Patey, *Probability and literary form: philosophic theory and literary practice in the Augustan age* (Cambridge, 1984), chs. 1–2; Lorraine Daston, *Classical probability in the Enlightenment* (Princeton, NJ, 1988), esp. ch. 1; Nash, *John Craige's* Mathematical principles, ch. 3.

[49] [John Arbuthnot,] *Of the laws of chance, or, a method of calculation of the hazards of game* (London, 1692). On Arbuthnot's links to Gregory and Pitcairne, see David E. Shuttleton, '"A modest examination": John Arbuthnot and the Scottish Newtonians', *British Journal for Eighteenth-Century Studies*, 18 (1995), pp. 47–62. On the significance of Arbuthnot's later work in probability, see now Catherine Kemp, 'The real "Letter to Arbuthnot"? A motive for Hume's probability theory in an early modern design argument', *British Journal for the History of Philosophy*, 22 (2014), pp. 468–91.

[50] Stephen M. Stigler, 'Apollo mathematicus: a story of resistance to quantification in the seventeenth century', *Proceedings of the American Philosophical Society*, 136 (1992), pp. 93–126, at pp. 105–9.

similar points, notably 'the Truth of either *Oral* or *Written* Tradition, *Successively* transmitted'.[51]

Of greater significance for religious belief was John Craig's *Theologiae Christianae principia mathematica*. Like his fellow episcopalians Gregory and Arbuthnot, Craig had responded to the resurgence of Scottish presbyterianism at the revolution of 1688–90 by making a career in England, in his case as a clergyman in the established church. Self-consciously applying to theology what he claimed were Newtonian methods, Craig's book argued that the probability of the gospels' testimony was gradually declining, as the suspicions of successive generations increased. To understand this process, Craig endeavoured to quantify, and to supply formulae describing, the balance of probability and suspicion. This allowed him to predict when the probability of sacred history should disappear, and to draw his much-derided conclusion that 'For Christ to come [again], 1454 years must first elapse.'[52] As with Pitcairne's *Solutio*, Craig's probabilistic reasoning made many readers uncomfortable. The Anglican minister John Edwards described Craig's book as 'scandalous and prophane', and asserted that the probability of Christ's history would increase over time, as it was acclaimed by a growing number of witnesses.[53] The mathematician Humphry Ditton did not dissent from Craig to this extent, but he alleged that there 'is no Decrease of the Probability or Credibility of Testimony, deliver'd by faithful, careful, and knowing Witnesses; tho propagated through a Series of Ages'.[54] While Craig's critics did not refer to Pitcairne (indeed, Ditton did not explicitly mention Craig), their views illustrate some of the possible reactions to the use of probabilistic arguments about historical evidence. The revised version of the *Solutio*, republished in 1713, lacked the sentence that, according to Hepburn, clarified that the Bible was above suspicion. Early readers of the English translation might have been familiar with some of the responses to Craig. Whatever Pitcairne's original intention was when he wrote the *Solutio* in 1688, over time it became more, rather than less, plausible to apply its scepticism to Christian history and thus to find a heterodox message in the work.

[51] [George Hooper,] 'A calculation of the credibility of human testimony', *Philosophical Transactions*, 21 (1699), pp. 359–65, quotation at p. 363. Hooper's authorship is asserted in Nash, *John Craige's* Mathematical principles, p. 3.

[52] Nash, *John Craige's* Mathematical principles, pp. 11, 53–71, quotation at p. 70. See also Andrew I. Dale, 'Craig, John (*c.* 1663–1731)', *ODNB*. In addition to Nash's analysis of the *Theologiae Christianae principia mathematica*, see Stephen M. Stigler, 'John Craig and the probability of history: from the death of Christ to the birth of Laplace', *Journal of the American Statistical Association*, 81 (1986), pp. 879–87.

[53] John Edwards, *Some new discoveries of the uncertainty, deficiency, and corruptions of human knowledge and learning* (London, 1714), p. 86.

[54] Humphry Ditton, *A discourse concerning the resurrection of Jesus Christ* (2nd edn, London, 1714), p. 164.

## II

The *Epistola Archimedis ad Regem Gelonem* ('Letter of Archimedes to King Gelo') was a satire on religious belief and its political uses, which mocked in an oblique but devastating fashion core Christian doctrines. The work purported to be a newly identified letter from the ancient mathematician Archimedes (c. 287–212 BC) to King Gelo, co-ruler of Syracuse with his father Hiero before their deaths in 215 BC. Indeed, Pitcairne began the letter by referring to *Arenarius*, or *The sand-reckoner*, a genuine work by Archimedes, which was addressed to King Gelo.[55] But it seems that few if any readers believed that the *Epistola* was of classical origin, and Pitcairne's authorship was widely known.

It is unclear when Pitcairne wrote the *Epistola*. It was possibly the outcome of the musings that led him, in a letter of 1694, to declare his 'vast propensitie to writ the Relligio mathematici, or Euclidis', a work that he thought could not be printed in his lifetime.[56] Pitcairne had a version of the *Epistola* – with Archimedes in place of Euclid as his mathematical spokesman – in manuscript, but probably not yet in print, in 1704, when he offered to 'transcribe it' and send a copy to the earl of Roxburgh.[57] It has been assumed that Pitcairne originally composed the *Epistola* around the same time as the *Solutio*, perhaps intending to publish the works together.[58] On this point, scholars seem to have been misled by the *Epistola*'s title, which incorporated one of Pitcairne's learned jokes. The *Epistola*, the title pages of the printed editions claimed, had been 'found at Alba Graeca [Belgrade] in the year of the Christian era 1688'. It is tempting to read this as an allusion to its date of composition. But Pitcairne had in mind another event of 1688, the siege of Ottoman Belgrade by imperial forces that September. In the course of the siege, it was claimed, a Frenchman unearthed previously unknown fragments (later shown to be spurious) of Petronius's classical novel the *Satyricon*.[59] Pitcairne's letter to Roxburgh of 1704 mentioned this discovery, and we can infer that it inspired him to 'find' the *Epistola* at Belgrade in 1688.

[55] [Archibald Pitcairne,] *Epistola Archimedis ad Regem Gelonem, Albae Graecae reperta. Anno aerae Christianae 1688* (n.p., n.d.), p. 3; Archimedes, *The sand-reckoner*, in T. L. Heath, ed., *The works of Archimedes* (Cambridge, 1897), pp. 221–32. Pitcairne owned editions of Archimedes's works: volume containing the printed catalogue of Pitcairne's library, Edinburgh University Library (EUL), La. III. 629, pp. 10, 23. Information about the historical King Gelo can be gleaned from *Diodorus of Sicily* (12 vols., London, 1933–67), XI, pp. 188–9 (XXVI. 15); *Polybius: the histories*, ed. and trans. W. R. Paton (6 vols., London, 1922–7), III, pp. 418–21 (VII. 8); *Livy* (14 vols., London, 1919–59), VI, pp. 102–3 (XXIII. 30), pp. 188–9 (XXIV. 5).

[56] *Letters of Pitcairne*, p. 18.

[57] Ibid., p. 40.

[58] See esp. Guerrini, 'Pitcairne, Archibald'; eadem, 'Pitcairne and Newtonian medicine', p. 73; MacQueen and MacQueen, 'Introduction', p. 7.

[59] Christian Laes, 'Forging Petronius: François Nodot and the fake Petronian fragments', *Humanistica Lovaniensia*, 47 (1998), pp. 358–402, at pp. 360–1. I owe this reference to Donncha O'Rourke. Pitcairne owned the edition with the discovered fragments: Pitcairne's library catalogue, EUL, La. III. 629, p. 31.

There are four surviving versions of the *Epistola* as a separate printed pamphlet. None has a date or publication details, but it is possible to identify the order in which the editions were produced. As we shall see shortly, we can also establish the dates of at least some of the versions. What appears to be the first edition is in octavo format and has fifteen numbered pages.[60] In a second printed version of the *Epistola*, in octavo format with forty-seven numbered pages, corrections have been made to the text, which has been expanded with two lengthy passages not in the fifteen-page edition.[61] A further correction and an addition have been made in a version otherwise identical to the second, but with forty-eight numbered pages. Following the forty-eighth page is a list of errata.[62] In a fourth version of the *Epistola*, the work has been entirely reset to make a quarto pamphlet of sixteen numbered pages. The text is substantially the same as that of the forty-eight-page version, with most of the corrections made and a few accidentals changed. To the title page was added a statement that the *Epistola* contained information about the origin of the soul, religion and superstition, prodigies and prophecies.[63]

Internal evidence, then, suggests that the fifteen-page *Epistola* was the first version, and the forty-seven-, forty-eight-, and sixteen-page versions respectively the second, third, and fourth. We can now attempt to date these editions. The fifteen-page edition was published in 1706. A manuscript in Pitcairne's hand, which was perhaps intended as a preface to the second edition, stated that the *Epistola* was first printed in that year in Amsterdam by George Gallet.[64] David Gregory wrote that the *Epistola* 'is printed at Amsterdam, Summer 1706, by Mr [John] Drummonds means'.[65] Leiden University Library's copy of the sixteen-page edition was formerly possessed by the scholarly journalist Prosper Marchand (1678–1756); his annotations to the fly-leaf record that

[60] [Pitcairne,] *Epistola Archimedis*, ESTC 006354815, British Library (BL), 531.b.1(2). This copy is available through Eighteenth-Century Collections Online (ECCO). Another copy of this edition is in Harris Manchester College Library, Oxford, Y1705/4 (5).

[61] Royal College of Physicians of Edinburgh, SN 3.16, additions and alterations at pp. 11–15, 34–44. Isaac Newton had a copy of this version: Trinity College Library, Cambridge, NQ.16.99 (1). I am grateful to Michael Hunter for this information.

[62] ESTC 006354816, reset at pp. 34, 47; addition and alteration at pp. 47–8; errata page after p. 48; BL, 531.b.1(1), a copy of this edition, is available through ECCO.

[63] [Archibald Pitcairne,] *Epistola Archimedis ad Regem Gelonem, Albae Graecae reperta. Anno aerae Christianae 1688. Qua plurima notatu digna de animae origine, de religionum institutione atque de superstitione, de prodigiis & vaticinationibus, continentur* (n.p., n.d.). Copies are held by Leiden University Library (LUL), Utrecht University Library, and the Bibliothèque Nationale de France.

[64] Papers by Archibald Pitcairne, EUL, MS Dc.4.101 [part of a large collection of unrelated manuscripts organized alphabetically by author]. This is cited by S. M. Simpson, 'An anonymous and undated Edinburgh tract', *Book Collector*, 15 (1966), p. 67.

[65] W. G. Hiscock, ed., *David Gregory, Isaac Newton and their circle: extracts from David Gregory's memoranda* (Oxford, 1937), pp. 35–6. In April 1706, Gregory noted that John Drummond was in Amsterdam (ibid., p. 34). It is unclear whether this referred to Pitcairne's friend and fellow physician John Drummond: see Pitcairne, *Latin poems*, esp. p. 372.

the fifteen- and forty-eight-page versions were published in 1688 at Rotterdam by the Quaker Benjamin Furly. But we should probably discount this later evidence and conclude that the *Epistola*'s first edition was published in 1706.[66]

The expanded forty-seven- and forty-eight-page versions of the *Epistola* were probably published in 1712 or 1713. In June 1712, Pitcairne sent the duke of Roxburgh what he called 'the true old relligion of Archimedes', noting that 'a new shall be shortlie printed with addition'.[67] Pitcairne might have been referring to the forty-seven-page edition, but if he was responsible for all the passages added to the *Epistola*, we can infer that the forty-eight-page version was also published before his death in 1713. It was the last to appear in Pitcairne's lifetime. Marchand's annotations on his copy of the sixteen-page edition indicate that it was published at The Hague by Henry Scheurleer in 1716. Here, Marchand, who had recently lived in The Hague and was to move back there in the 1720s, is presumably reliable.[68] The sixteen-page edition was included without alteration in Scheurleer's 1722 edition of the dissertations of Pitcairne, again suggesting that Scheurleer published the sixteen-page version.[69]

Unlike the brisk, analytical *Solutio*, the *Epistola* was meandering and conversational, enlivened with anecdotes and historical narration.[70] It began with Archimedes recalling an earlier exchange with King Gelo, who had asked whether geometry could 'lead to the knowledge of everything', and if it 'could disclose to us the very nature of the divine and the powerful forces of all things'. Gelo had also requested information about the doctrines of different religions.[71] After alluding to the second Punic war, in which he was involved as an engineer of military machines, Archimedes began his answer with some remarks about astronomy, to which we shall return below. Archimedes then described his meeting with Archias, a physician. Though not solely committed to one school, Archias tended to follow Eristratus (c. 304–250 BC), imitating his dissections of the heart and studies of blood circulation. Archias was admired by geometers and did not seek to profit from his medical practice. In short,

[66] LUL, 546 F 17. There is no reference to Pitcairne's *Epistola* in the discussion and lists of works translated and published by Furly in William I. Hull, *Benjamin Furly and Quakerism in Rotterdam* (Swarthmore, PA, 1941), pp. 68–76. Nor is the *Epistola* listed in *Bibliotheca Furliana; sive catalogus librorum... doctiss. viri. Benjamin Furly* (Rotterdam, 1714).

[67] *Letters of Pitcairne*, 67.

[68] Christiane Berkvens-Stevelinck, *Prosper Marchand: la vie et l'ouevre (1678–1756)* (Leiden, 1987), pp. 3–5.

[69] *Archibaldi Pitcarnii, Scoto-Britanni, dissertationes medicae: quibus subjunguntur Epistola Archimedis, et Poemata selecta, ejusdem auctoris* (The Hague, 1722). The *Epistola* was again published with Pitcairne's medical dissertations in Leiden by Johan Arnold Langerak (1737).

[70] Unless otherwise indicated, subsequent references cite the forty-eight-page edition (ESTC 006354816).

[71] [Pitcairne,] *Epistola Archimedis*, pp. 3–4, quotations at pp. 3 ('in omnis rei cognitionem deducat'), 3–4 ('possit ipsas divinas Naturas atque vires omnium potentes nobis patefacere').

enough was said for informed readers to associate Archias with Pitcairne, and perhaps to equate Eristratus with William Harvey.[72]

Though Archimedes described some of his acquaintance's medical practice, most of the teachings of Archias related to Gelo's interest in religious beliefs. After discussing ancient Etruscan and Roman religion, the letter reported Archias's general approach to comparing religions. It was, he thought, necessary to distinguish between those principles that 'are peculiar and proper to a sect', and those that the sect shared with all others.[73] In the second category were maxims such as 'do not do to others what you do not wish to be done to you', from which derived principles of justice that 'existed the same among all peoples'.[74] Because these norms of morality were recognized by devotees of all religions, believers were not made better people by following one sect rather than another. Indeed, Rome did not become a more just society after the revelation of its early religion.[75] The introduction of a religion simply brought with it new specific articles of belief.

The founders of each sect, Archias continued, paid less attention to the general principles common to all than to the particular doctrines of their own religion. The same was true of the priests of the various sects. Indeed, citizens were more likely to face priestly criticism when they broke their sect's specific rules than when they behaved unjustly.[76] Gaining authority over their followers by asserting these distinctive teachings, priests also had the potential to alter popular understanding of the more general notions of justice. 'He who, by the sole authority of Numa [Pompilius] or the Pontifex, believes parricide to be illicit, will believe and comply should Numa confirm that parricide is licit.' Because of this, a religious believer might well be a better citizen were he not part of his sect.[77] Thus, the *Epistola* revealed a decided preference for natural religion, based on values common to humanity, over revealed belief. According to Archimedes and Archias, the norms of justice were 'installed in the minds of man by Jupiter Optimus Maximus, in the same way as the power is installed by which we know that two and two make four'.[78] It was human nature, not the sectarian teaching of priests, that made men fit for society.

The heterodox message of the *Epistola* can be understood in several ways. First, we can argue that Pitcairne joined the English campaign against 'priestcraft', a term used to highlight the accumulation of authority and abuse of

[72] Ibid., pp. 8–12 (including a passage not in ESTC 006354815). Pitcairne was said to provide treatment without charge: 'Some account of Dr Pitcairn', in *Works of Pitcairn*, pp. x–xi. The MacQueens think that Archias represented Pitcairne: 'Introduction', p. 31.

[73] [Pitcairne,] *Epistola Archimedis*, pp. 17–20, 21 ('sectae illi propria privataque sunt').

[74] Ibid., pp. 21 ('*alteri non esse faciendum quod ipsi tibi nolles factum*'), 22 ('apud omnes Gentes eadem existunt').

[75] Ibid., pp. 22–3.

[76] Ibid., pp. 23, 27.

[77] Ibid., pp. 25–7, quotation at p. 26 ('*ille qui sola auctoritate* Numae *vel Pontificis parricidia credit illicita, eidem* Numae *paricidia* [sic] *licere confirmanti credet ac obsequetur*').

[78] Ibid., p. 36 ('Haec…Effata mentibus hominum sunt a Jove Optimo Maximo indita, uti indita est ea vis, qua scimus Duo & Duo esse Quator').

power by clergymen.[79] A passage added to the *Epistola* after its first edition went as far as to suggest that no self-styled holy men and miracle workers were to be trusted, even if they inculcated piety and morality.[80] But there were crucial differences between Pitcairne's *Epistola* and the anti-clerical works of Blount, Toland, and others. Most obvious were Pitcairne's strenuous efforts – albeit they were unsuccessful – to disguise his authorship, publishing anonymously, in Latin, what purported to be an ancient text, and employing a Dutch printer. The work's Dutch publication can be attributed in part to continuing government restrictions on Scottish printing presses, which did not experience anything comparable to the lapse of the English licensing act in 1695.[81] But there was another consideration, of equal or greater importance. By publishing in Latin in Amsterdam, Pitcairne was aiming at a readership more educated and international than that of English-language anti-clerical writings. He had connections with free-thinking Dutch intellectuals, probably dating from his time in Leiden. Perhaps contacts such as the merchant and intellectual Adriaan Verwer helped to promote the *Epistola* in the Netherlands.[82] As Marchand's familiarity with the *Epistola* suggests, the work continued to interest heterodox readers beyond Scotland after Pitcairne's death. And it is particularly significant that the *Epistola* was published in 1716 by Henry Schleureer. Not only did Schleureer print works by English free-thinkers including Anthony Collins and the third earl of Shaftesbury, but he was closely connected to Charles Levier, the printer in 1719 of the notoriously heterodox work *La vie et l'esprit de Mr. Benoit de Spinosa*, otherwise known as the *Traité des trois imposteurs*.[83]

A second dimension in the *Epistola*'s heterodoxy concerns the use of ancient history to reflect on the social effects of religion. In some ways, Pitcairne's discussion echoed earlier analyses of 'civil religion'.[84] Most notably, the *Epistola*'s

[79] See esp. J. A. I. Champion, *The pillars of priestcraft shaken: the Church of England and its enemies, 1660–1730* (Cambridge, 1992); Mark Goldie, 'Priestcraft and the birth of whiggism', in Nicholas Phillipson and Quentin Skinner, eds., *Political discourse in early modern Britain* (Cambridge, 1993), pp. 209–31; Katherine A. East, '*Superstitionis Malleus*: John Toland, Cicero, and the war on priestcraft in early Enlightenment England', *History of European Ideas*, 40 (2014), pp. 965–83.

[80] [Pitcairne,] *Epistola Archimedis*, pp. 35–6.

[81] Alastair J. Mann, *The Scottish book trade, 1500–1720: print commerce and print control in early modern Scotland* (East Linton, 2000), chs. 5–6.

[82] See Rienk Vermij, 'The formation of the Newtonian philosophy: the case of the Amsterdam mathematical amateurs', *British Journal for the History of Science*, 36 (2003), pp. 183–200.

[83] Rienk H. Vermij, 'The English deists and the *Traité*', in Silvia Berti, Françoise Charles-Daubert, and Richard H. Popkin, eds., *Heterodoxy, Spinozism, and free thought in early eighteenth-century Europe: studies on the* Traité des trois imposteurs (Dordrecht, 1996), pp. 241–54, at pp. 244–5.

[84] See e.g. Mark Goldie, 'The civil religion of James Harrington', in Anthony Pagden, ed., *The languages of political theory in early modern Europe* (Cambridge, 1987), pp. 197–222; Justin A. I. Champion, 'Legislators, impostors, and the politic origins of religion: English theories of "imposture" from Stubbe to Toland', in Berti, Charles-Daubert, and Popkin, eds., *Heterodoxy, Spinozism, and free thought*, pp. 333–56; Jeffrey R. Collins, *The allegiance of Thomas Hobbes* (Oxford, 2005), esp. pp. 37–52.

references to Numa Pompilius, the mythical second king of Rome, recalled discussions by writers including Niccolò Machiavelli, Gabriel Naudé, and Thomas Hobbes, who alleged that Numa promoted religion to uphold his authority. Later, Numa appeared in a similar light in the *Traité des trois imposteurs*.[85] But if Pitcairne's choice of example was conventional, he nevertheless presented an interpretation different to that of his predecessors. Rather than emphasizing the political purpose of Numa's piety, he questioned the moral value of Roman religion. As we have noted, the *Epistola* claimed that the 'Romans did not become holier supporters of justice and honesty after the precepts of the goddess Egeria were received through Numa.' Religious observances did not make the Romans more virtuous, and the same was true of the Etruscans under their religion.[86] For Pitcairne, then, the story of Numa exposed the redundancy of civil religion, not its social utility.

Pitcairne pursued a third, equally controversial, theme: the absurd beliefs that are sometimes accepted on the basis of human testimony. As the *Epistola* related, the ancient Etruscan religion was thought to have been revealed by Tages, a prophet resembling a young boy, who was suddenly discovered by farmers ploughing a field.[87] Later in the text, Archimedes asserted that the Romans would not believe it 'if three countrymen…together with female attendants…affirmed that they had seen Amilcar', the former leader of the Carthaginians, 'return to life'.[88] Nor would it be credited that Hannibal won his battles over the Romans at Ticinus, Trebia, and Trasimene concurrently, rather than in succession, by dividing himself into three persons able to act separately, though they constituted one Hannibal.[89] These three passages seem obscure, but they could be read as commentaries on the doctrines of Christ's nativity, resurrection, and the Trinity. This, indeed, was how Prosper Marchand understood the passages.[90] Thomas Halyburton thought that the *Epistola*'s slighting account of the supposed immortality and receipt into heaven of Romulus questioned Christ's resurrection and ascension, and that the discussion of Hannibal alluded to the Trinity.[91] Another critic referred to

[85] Mark Silk, 'Numa Pompilius and the idea of civil religion in the west', *Journal of the American Academy of Religion*, 72 (2004), pp. 863–96; Niccolò Machiavelli, *Discourses on Livy*, trans. Harvey C. Mansfield and Nathan Tarcov (Chicago, IL, 1996), pp. 34–6; Thomas Hobbes, *Leviathan*, ed. Richard Tuck (rev. edn, Cambridge, 1996), pp. 82–3; Silvia Berti, ed., *Trattato dei tre impostori: la vita e lo spirito del Signor Benedetto de Spinoza* (Turin, 1994), pp. 116, 280.

[86] [Pitcairne,] *Epistola Archimedis*, p. 25 ('*Romanos* justi atque honesti sanctiores non exstitisse cultores post Aegeriae Deae recepta per Numam precepta').

[87] Ibid., pp. 19–20. Pitcairne's account followed Cicero, *De divinatione*, II. 23: Cicero, *De senectute De amicitia De divinatione*, ed. William Armistead Falconer (London, 1923), pp. 426–9.

[88] [Pitcairne,] *Epistola Archimedis*, pp. 39–40, quotation at p. 39 ('Si rustici tres…faeminis administrantibus permisti…affirmaverint vidisse se Amilcarem…ad vivos redeuntem').

[89] Ibid., pp. 32–4.

[90] LUL, 546 F 17, flyleaf annotations. Quoted in Vermij, 'Formation of the Newtonian philosophy', p. 192 n. 42.

[91] Halyburton, 'Oratio inauguralis', p. 23; [Pitcairne,] *Epistola Archimedis*, pp. 31–2.

the *Epistola* as 'the Latin Letter about the Trinity'.[92] Pitcairne himself asserted that the section about Hannibal satirized the Catholic and Lutheran doctrine of the real presence, by mocking its claim that Christ could be in many places at once.[93] But Pitcairne's critics could maintain that he was ridiculing fundamental Christian beliefs, while drawing attention to the dubious testimony on which they rested. The *Epistola*'s discussion of ancient sects constituted an assault on revealed religion, not on a single Christian community.

Another commentary on the sceptical agenda of the *Epistola* was offered by Halyburton's inaugural lecture. Halyburton summarized the *Epistola*'s analysis of religions in terms of their specific principles and the general tenets of morality. Whatever its merits, Halyburton argued, this understanding overlooked the special status of Christianity. Not only had Christianity been propagated faster than other religions, but its particular doctrines were closely entwined with common norms. It was Christianity's special teachings – about the necessity of divine grace – that allowed its followers to observe the universal principles of justice.[94] Halyburton then examined a passage in which Archimedes stated a geometrical rule for comparing religions. This section of the *Epistola*, it might be noted, shared some assumptions with John Craig's *Theologiae Christianae principia mathematica*. Archimedes proposed that the 'quantity of credibility' appropriate to each religion's specific tenets was proportionate to the number of its early proselytizers. This allowed him to maintain that shared codes of justice were the most credible of all principles, being testified to by humanity as a whole.[95] Again, Halyburton thought that this missed the point. Christianity rested on divine testimony, not simply on the statements of human witnesses. It was thus greatly more reliable than the beliefs discussed in the *Epistola*. Nor was it the case that all human testimony was to be treated equally. Pitcairne's aim, Halyburton complained, was clear: 'to support the faith of any given religion only on the testimony of men, and then to be able to cast doubt upon the merits of this testimony'.[96]

Of course, the *Epistola* was explicitly concerned with ancient religious beliefs; Christians might reasonably claim that these derived from human testimony. Nevertheless, what Archimedes proposed was a way of examining all religions. Indeed, another critic of the *Epistola*, the earl of Cromarty, asserted that Pitcairne's analysis of the credibility of religions was an argument 'for Heathenism and Paganism, against the Apostolick Doctrine'. Cromarty, who read the *Epistola* in March 1707 and was the first to respond in English,

[92] [?William Cockburn,] *A letter from Sir R- S-, to Dr Archibald Pitcairn* (Edinburgh, 1709), p. 27. On the attribution of this pamphlet, apparently not the work of Sir Robert Sibbald, see MacQueen and MacQueen, 'Introduction', p. 22.

[93] Papers by Archibald Pitcairne, EUL, MS Dc.4.101. Quoted in MacQueen and MacQueen, 'Introduction', p. 31.

[94] Halyburton, 'Oratio inauguralis', pp. 14–18.

[95] Ibid., pp. 18–20; [Pitcairne,] *Epistola Archimedis*, pp. 30–1.

[96] Halyburton, 'Oratio inauguralis', pp. 21–3, quotation at pp. 22–3 ('*Fidem Religionis cujuslibet solo Hominum Testimonio niti, & illud etiam Testimonium Fallaciae merito suspicari posse*').

perhaps raising awareness of the work, agreed with Halyburton that God's word in favour of Christianity was infinitely more reliable than human testimony for the ancient religions.[97] Moreover, as we have noted, the *Epistola* compared Christianity and pagan beliefs by insinuation, suggesting that some Christian dogmas were as ridiculous as the fables of the ancients.

## III

Our examination of the *Epistola* has shown that Pitcairne was critical of priestcraft and sceptical of apparently unreasonable doctrines founded on testimony. But he was not an atheist. The key to understanding Pitcairne's belief in a deity is that, while he rejected abstract *a priori* arguments for God's existence, he was convinced by *a posteriori* evidence, what we now call the argument from 'design'. At least twice in his correspondence, Pitcairne made explicit his refusal to accept proofs of God's existence based on reason alone. In 1706, the year of the *Epistola*'s publication, Pitcairne wrote to David Gregory that he was 'clear that metaphysics can never prove a Deity', and thus thought that 'our churchmen here have no ground not to be Atheists'.[98] In the same year, he repeated the sentiment in a letter to Adriaan Verwer.[99]

But while metaphysicians were unable to demonstrate God's existence, natural philosophers had the proof within their grasp. In the wake of Newton's *Principia*, of course, the latter point was commonplace. According to Christian apologists, notably Richard Bentley and Samuel Clarke when delivering the lectures endowed by Robert Boyle's will, the effects of gravity were explicable only with reference to God's creation and government of the universe.[100] Early in the *Epistola*, Pitcairne had his Archimedes echo this line of apologetic, by mentioning the force that kept the earth in its orbit around the sun, which he took to be evidence of divine guidance of the cosmos. Pitcairne's Archimedes, like the historical mathematician in his *Sand-reckoner*, referred to the astronomer Aristarchus of Samos (c. 310–230 BC), who envisaged a heliocentric system. But translated to a late seventeenth- or early eighteenth-century context, this passage of the *Epistola* suggests that Pitcairne

[97] George Mackenzie, earl of Cromarty, *Synopsis apocalyptica: or, a short plain explication and application of Daniel's prophecy and of St John's revelation* (Edinburgh, 1708), third pagination sequence, pp. iv–v, quotation at p. v.

[98] *Letters of Pitcairne*, p. 43.

[99] Archibald Pitcairne to Adriaan Verwer, June 1706, Royal Society Library, London (RSL), MS 247, fo. 73v. I am grateful to Michael Hunter for a transcription. The letter is cited in Vermij, 'Formation of the Newtonian philosophy', p. 195.

[100] John J. Dahm, 'Science and apologetics in the early Boyle lectures', *Church History*, 39 (1970), pp. 172–86, at pp. 183–6; Margaret C. Jacob, *The Newtonians and the English revolution, 1689–1720* (Brighton, 1976), chs. 4–5, esp. pp. 191–2. Compare Ann Thomson, 'Les premières "Boyle lectures" et les verités au-dessus de la raison', *Revue de la Société d'Études Anglo-Américaines des XVIIe et XVIIIe Siècles*, 68 (2011), pp. 97–111.

accepted the theistic reading of the *Principia*.[101] In the mid-1690s, and again in 1706, Pitcairne repeatedly asked his English correspondents for news of Newton's religious thoughts.[102]

Pitcairne did not discover gravity, but he made his own contribution to the argument from design. Responding to Sir Edward Eizat in 1695, George Hepburn claimed that Pitcairne's writings contained 'a demonstration of the Deity's existence', and thus his friend could not be accused of atheism.[103] To Verwer, Pitcairne wrote that he had 'proved God's existence by the known circulation of the blood'.[104] And in the manuscript note that may have been intended as a preface to the *Epistola*, Pitcairne referred to 'that demonstration which was (in my dissertation concerning the circulation of blood in living animals and embryos, published in Leiden in 1693) exhibited fully, which taught the fanatics the existence of God'.[105] The dissertation in question was defended on 6 June 1693, and the student respondent was none other than George Hepburn.[106] In a terse passage at the start of the dissertation, Pitcairne argued that blood circulation was a divinely created faculty whose appearance in new-born infants could not be explained by purely material processes. To make this case, he started by reiterating his view that the circulation was a self-contained system for moving particles and secreting them to appropriate parts of the body. The heart, circulation, and medullary substance (spine marrow) of embryos were ready to begin operating immediately on birth. Because 'the Powers of the Heart and Medullary Substance had the same Beginning, and act together', Pitcairne reasoned, 'no Animal is ever produced Mechanically'. In reproduction, he concluded, sperm brings to the ovary 'an Animal…which before enjoyed the Circulation of the Blood, and the Benefit of Life'. Pitcairne, this passage suggests, accepted the animalculist version of the preformation theory of generation: like many of his contemporaries, he thought that each sperm contained a microscopic preformed organism, which would grow when brought into contact with an egg from the female parent. Pitcairne drew a theistic conclusion from his analysis, claiming that it was clinching evidence of God's existence. 'I know not whether they

[101] [Pitcairne,] *Epistola Archimedis*, pp. 4, 6–8; Archimedes, *The sand-reckoner*, pp. 221–2. See also Thomas Heath, *Aristarchus of Samos: the ancient Copernicus* (Oxford, 1913), pp. 301–10. Pitcairne owned Aristarchus's surviving work: Pitcairne's library catalogue, EUL, La. III. 629, p. 38.

[102] *Letters of Pitcairne*, pp. 19, 20, 22, 43.

[103] Hepburn, *Tarrugo unmasked*, p. [iii].

[104] Pitcairne to Verwer, June 1706, RSL, MS 247, fo. 73v ('Deumque…esse demonstravi Circulatione Sanguinis intellecta'). Vermij, 'Formation of the Newtonian philosophy', p. 195.

[105] Papers by Archibald Pitcairne, EUL, MS Dc.4.101 ('Quod Illam Demonstrationem (antea tamen ostensam Lugduni Batavorum Anno 1693, in Dissertatione mea De Circulatione Sanguinis in Animalibus genitis et non genitis) plenius ostendat, Que Fanaticos docui Esse Deum Optimum Maximum').

[106] Archibald Pitcairne, *Dissertatio de circulatione sanguinis in animalibus genitis & non genitis* (Leiden, 1693). The dissertation was included in the English *Works of Pitcairn*, pp. 164–87.

who stile themselves *Theologians* and Interpreters of *Jove* ever produced any thing more worthy of *Jove*, or more glorious to Mankind.'[107] And Pitcairne thought highly enough of this reasoning to refer to it in the *Epistola*, where it was noted that Archias's dissections had persuaded Archimedes that there was a limit to mechanical explanations in anatomy, and that the human body was a divine creation.[108]

## IV

What was the nature of Archibald Pitcairne's religious beliefs? Perhaps we should start with his brief poetic 'confession of faith', written on 25 December 1712, his sixtieth birthday. In this, he testified to his belief that Christ was the son of God, was worthy of worship, and had assumed human form, issuing commandments that humans should follow so as to become 'demigods'. Of these commandments, Pitcairne emphasized the imperatives to do as you would be done by and to be loyal to 'Caesar'.[109] In his manuscript note relating to the *Epistola*, Pitcairne likewise asserted that he was a Christian. He defined Christianity with reference to three scriptural passages: Mark 11:22, in which Christ exhorted Peter to have faith in God; John 17:3, where Christ anticipated eternal life; and 1 Corinthians 8:4–6, asserting that there is one God. The *Epistola*, Pitcairne explained, intended to show how much religious knowledge Archimedes could obtain, relying solely on principles implanted in the mind by God.[110] Pitcairne thought that a kind of natural religion could be derived from innate ideas; this was an assumption he shared with Lord Herbert of Cherbury, whose *De veritate* (1624) influenced the late seventeenth-century English deists. But Pitcairne's personal beliefs also drew on the teachings of the Bible. He had confidence in reason, then, but did not reject revelation. The Christianity to which Pitcairne adhered was a simple faith, expressed primarily in moral conduct and obedience to authority.

Historians have struggled to classify Pitcairne's religion. Anita Guerrini has described the circle around Gregory and Pitcairne as 'High Church Anglicans', a category that is of little use in Pitcairne's Scottish context.[111] As John Friesen points out, Scottish episcopalians of Pitcairne's generation formed their views in reaction to presbyterianism.[112] Thus, Guerrini's more recent formulation, that Pitcairne was probably 'a devoted, if not devout,

[107] *Works of Pitcairn*, pp. 164–7, quotations at pp. 166–7. The Latin dissertation included, in the 'respondent's annexes', a statement reiterating this interpretation: Pitcairne, *Dissertatio de circulatione sanguinis*, sig. D3v. On the preformation theory, see Elizabeth B. Gasking, *Investigations into generation, 1651–1828* (London, 1967), chs. 3–4; Clara Pinto-Correia, *The ovary of Eve: egg and sperm and preformation* (Chicago, IL, 1997).

[108] [Pitcairne,] *Epistola Archimedis*, p. 11.

[109] Pitcairne, *Latin poems*, pp. 254–5.

[110] Papers by Archibald Pitcairne, EUL, MS Dc.4.101.

[111] Guerrini, 'The tory Newtonians', p. 289.

[112] Friesen, 'Archibald Pitcairne', esp. pp. 166–9.

Episcopalian', is more revealing, but does not easily accommodate the deist themes in his writings.[113] Roger Emerson was perhaps closer to the mark when he called Pitcairne 'hardly an ordinary or orthodox Episcopalian'.[114] But the problem with these interpretations is that they pay insufficient attention to the evolving character of episcopalianism. By the end of his life, Pitcairne was more out of step with the views of leading episcopalians than he had been as a young man. This was a result both of the articulation of his own thought, and the emergence of a more doctrinaire episcopalian culture.

Pitcairne held several attitudes that were typical of episcopalians in the Restoration period. First, he emphasized loyalty to the king. After the revolution of 1688–90, in common with most committed episcopalians, Pitcairne became a Jacobite. Second, there was his focus on a basic core of belief. The episcopalian church of the Restoration period did not impose any specific confession of faith, and its leaders promoted a simplified Christianity, against the dogmatic subtleties of presbyterianism.[115] And third, Pitcairne shared the anti-clerical ethos of the elite episcopalian laity, for whom episcopacy, lay ecclesiastical patronage, and royal supremacy were means of subordinating hitherto presumptuous parish ministers – and presbyterian demagogues – to lay power.[116]

In his scepticism of historical testimony, and more particularly in his interest in natural religion and hostility to priestcraft, Pitcairne's preoccupations resembled those of the English deists. While it is misleading to call Pitcairne a 'deist', we can certainly conclude that he wrote about deist topics. We can also interpret his analysis of natural religion as a development – albeit an idiosyncratic one – from the credal minimalism characteristic of Restoration episcopalianism. Furthermore, Pitcairne's anti-clericalism was an extreme form of the general late seventeenth-century phenomenon, exacerbated by his dislike of individual presbyterian ministers. But as he was expressing his religious views, from the late 1680s onwards, Scottish episcopalianism was changing. Though it remained a diverse culture, encompassing a spectrum of believers from Calvinists to mystics, its leaders increasingly emphasized divine-right views of church government, and made associated claims about the necessity of the episcopal ordination of clergy.[117] The doctrinal drift of Scottish

[113] Guerrini, 'Pitcairne, Archibald'; see also MacQueen and MacQueen, 'Introduction', pp. 29–30.

[114] Roger L. Emerson, 'The religious, the secular and the worldly: Scotland, 1680–1800', in James E. Crimmins, ed., *Religion, secularization and political thought: Thomas Hobbes to J. S. Mill* (London, 1990), pp. 68–89, at p. 73.

[115] Alasdair Raffe, 'Presbyterians and episcopalians: the formation of confessional cultures in Scotland, 1660–1715', *English Historical Review*, 125 (2010), pp. 570–98, at pp. 580–3.

[116] Bruce Lenman, 'Physicians and politics in the Jacobite era', in Eveline Cruickshanks and Jeremy Black, eds., *The Jacobite challenge* (Edinburgh, 1988), pp. 74–91, at p. 78; Julia Buckroyd, 'Anti-clericalism in Scotland during the Restoration', in Norman Macdougall, ed., *Church, politics and society: Scotland, 1408–1929* (Edinburgh, 1983), pp. 167–85.

[117] Raffe, 'Presbyterians and episcopalians', pp. 574–80.

episcopalianism was thus in the direction of greater rigidity, at the very time that Pitcairne was publishing his sceptical and anti-clerical writings.[118]

Unlike Thomas Aikenhead, with his quotable but shallow irreligious catchphrases, Archibald Pitcairne drew on a wide range of intellectual interests to forge a substantial heterodoxy. There is evidence that his *Solutio*, and more especially the *Epistola*, found readers, who appreciated at least some of the works' complexities, in Scotland, England, and the Netherlands. And yet Pitcairne wrote in a deliberately opaque manner, in the language of the educated. His approach was far from the brash vernacular deism of Charles Blount. In its allusive, suggestive style, moreover, his work had little in common with the irreligious system-building of Spinoza. If Pitcairne was a scoffer at religion, his mockery took a highly erudite form. All of these characteristics, I think, reflect the constraints on heterodox writing in late seventeenth- and early eighteenth-century Scotland. Pitcairne was addressing a small, international audience; he knew that it was unwise to advance irreligious messages openly, or in ways accessible to ordinary readers. Not only was this context of publication more characteristic of Scotland than of England, but Pitcairne's attitudes were those of a wayward Scottish episcopalian, not an Anglican high-churchman or a deist. For all his obscurity, Pitcairne was an authentically Scottish voice of religious heterodoxy.

[118] This would explain why Pitcairne was less sympathetic towards the episcopalians in his *Tollerators and con-tollerators* (1703) than in his satires of the early 1690s: MacQueen, '*Tollerators and con-tollerators* (1703)', p. 89.