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**‘In the Society’s Strong Box’: A Visual and Material History of the Royal Society’s
Copley Medal, c.1736-1760**

Dr Rebekah Higgitt, Centre for the History of the Sciences, University of Kent, UK.

Abstract

It has become a commonplace that exceptional achievement, including within science, should be rewarded with prizes and that these will often take the form of a medal. The ubiquity of such awards today means that the circumstances behind their arrival tend to be overlooked, but they were novelties when first suggested at the Royal Society in the 1730s. This article traces the creation of the Copley Medal and explores the meaning of medals to the recipients, the Society and the proposer of the scheme, Martin Folkes. Paying attention to the medal’s iconography and material nature can shed light on how experimental philosophy and the role of the Royal Society were conceived by key Fellows, demonstrating their links to antiquarianism and Freemasonry. Rather than arriving as a fully formed reward system, the medal concept required investment of time, money, thought and skill, and the development of ritual, meaning and value.

Keywords: Royal Society, medals, iconography

The president then acquainted the board that Sir Hans Sloane as Surviving Executor of the late Sir Godfrey Copley had this year recommended D^r Gowin Knight of the Society, for the Annual Prize Medal bestowed in consequence of S^t. Godfrey's Benefaction. and the Same being approved, the Several keys of the Iron Chest kept by the President, the Treasurer and one of the Secretaries, were produced, and a gold medal being the last but one remaining in the Chest, was taken out and delivered to the President to be Engraved, and presented on S^t. Andrews day according to Annual Custom.

*Council Minutes, 11 November 1747, Royal Society.*¹

1. Introduction

Today the Royal Society, the UK's premier scientific academy, has 29 awards and prizes, 18 of which are, or include, a medal.² Awards have proliferated, particularly in the last century, becoming a significant part of the activity of such societies and the conventional reward system in science. This normalisation of honorary prizes and medals has meant that there has been insufficient consideration of the origins of one of the first, the Royal Society's Copley Medal. The article that gives the most detailed account discusses its "rather uncertain start" before it, properly in the authors' view, "became established as a major award" that marked

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¹ Royal Society, CMO/3/120, Minutes of a meeting of the Council of the Royal Society, 11 November 1747. NB years are given commencing 1 January but follow contemporary use of Old or New Style calendars.

² Royal Society, "Awards" <https://royalsociety.org/grants-schemes-awards/awards/> (accessed 1 Aug. 2016).

“recognition by the Society of the highest scientific distinction”.³ This conforms to an idea of what a scientific prize *should* be that is a product of the 19th and 20th centuries and avoids close consideration of its early meanings. It also fails to consider the medal as a material object – or, rather, series of objects – for which particular aesthetic and other choices had to be made, and which had to be manufactured, maintained, safeguarded and distributed. This article argues that paying attention to the medal’s visual and material nature gives important clues to its meaning and to that of experimental philosophy within the Royal Society (RS) in the mid-18th century.

It has been particularly easy to create a presentist narrative of the Copley Medal because there is a good case for its being the first and longest lasting of what we have learned to recognise as a scientific prize. Firstly, it can be seen as an open prize. Unlike the Académie des Sciences’s Meslay Prize, or contemporary prizes offered by schools, universities, societies or publications, it was not awarded for a pre-defined task, question or topic.⁴ Secondly, it was also unlike rewards that gave financial compensation for work completed, whether through commercial opportunity (patents) or in exchange for sharing a process or product (for example the rewards arbitrated by the Commissioners of Longitude – the first of which was, like the Copley Medal, awarded in 1737 – or parliamentary rewards like that given to Joanna

³ M. Yakup Bektas and Maurice Crosland, “The Copley Medal: The Establishment of a Reward System in the Royal Society, 1731-1839”, *Notes and Records of the Royal Society of London*, 1992, 46:43-76, p. 43.

⁴ On the Meslay Prize see Patrice Bret’s article in this issue and Danielle Fauque, “Testing Longitude Methods in Mid-Eighteenth Century France”, in *Navigational Enterprises in Europe and its Empires, 1730-1850* edited by Richard Dunn and Rebekah Higgitt (Basingstoke: Palgrave Macmillan, 2015), pp. 159-179, pp. 159-60. Gold medal prizes were offered in 1735 by the *Gentleman’s Magazine* for a poem on “The Christian Hero” and from 1737 by the University of Dublin for study of Greek: Mark Jones, “All Shall Have Prizes: Prize Medals in Britain 1750-1850” (paper, British Art Medal Society Conference, June 2016), pp. 2-3 and *Gentleman’s Magazine*, 1735, p. 778. Some of the earliest post-Classical prize medals were given for orations on set topics: Frederick John Stopp, *The Emblems of the Altdorf Academy: Medals and Medal Orations, 1577-1626* (London: MHRA, 1974).

Stephens in 1739 in exchange for sharing her cure for the stone).⁵ Nor, thirdly, was it payment for a particular service, such as the performance of an experiment or giving of a lecture, as characterised the original use of Godfrey Copley's legacy and the Society's Croonian Lecture.⁶ However, as the epigraph to this article makes clear, in its early days the Copley Medal was not an expertly assessed open competition: it was in the gift of particular individuals, initially Hans Sloane, a trustee of the Copley bequest, and, after his death, the Society's successive presidents.

As a medal, the Copley award also seems to point the way to the 20th century's premier honorary prize medals, the Nobels, as well as the many institutionally backed prize medals that appeared from the 1750s.⁷ It is worth emphasising that, although there was a long tradition of marking royal and state events on medals and, from the Renaissance, the celebration or reward of civilian individuals, in the early 18th century there was little tradition of medals being used as regular or continuing prizes or rewards – even military service medals were a later invention.⁸ Nevertheless, there has been surprisingly little attention given to the Copley Medals themselves. Although Bektas and Crosland briefly discuss their creation, they have no interest in the visual or material aspects and, in fact, misattribute the

⁵ Derek Howse, "Britain's Board of Longitude: The Finances, 1714-1828", *The Mariner's Mirror*, 1998, 84:400-17; Richard Dunn and Rebekah Higgitt, *Finding Longitude* (London: Collins, 2014); Nicky Reeves, "Mrs Stephens' Cure for the Stone", *The Longitude Project Blog* (21 Dec. 2010) <http://www.rmg.co.uk/discover/behind-the-scenes/blog/mrs-stephens-cure-stone> (accessed 29 Jul. 2016).

⁶ See James Hudson, *Report on the Adjudication of the Copley, Rumford and Royal Medals: And Appointment of the Bakerian, Croonian, and Fairchild Lectures* (London: Richard Taylor, 1834), pp. 44-45.

⁷ See Jones, "All Shall Have Prizes". The 18th- and 19th-century RS prize medals were the Rumford Medal (suggested and financed by Count Rumford in 1797, first awarded 1800), the Royal Medals (1826), Davy Medal (1877), Darwin Medal (1890) and Buchanan Medal (1897). See Hudson, *Report*; Royal Society, "Awards"; Roy M. MacLeod, "Of Medals and Men: A Reward System in Victorian Science, 1826-1914", *Notes and Records of the Royal Society*, 1971, 26:81-105.

⁸ See Mark Jones, *The Art of the Medal* (London: British Museum Publications, 1979). Elizabethan and Commonwealth Naval Reward medals were early examples, but connected only to particular actions.

design. Their focus is, rather, on who and what work was rewarded and how this and the prize's administration evolved over time. Nicky Reeves, too, has considered the medal winners rather than the medals, or, more precisely, how John Pringle (RS President 1772-78) described them and sought to associate the Society with particular kinds of scientific work.⁹ Conversely, numismatists have described the Copley Medal and identify its makers, but do not link this to consideration of the Society's aims, iconographic choices or how the medal was distributed.¹⁰ This paper attempts to fill some of these gaps by asking why the RS introduced the novelty of a prize medal and what its new "Annual Custom" implied. As the opening quotation suggests, the physical nature of the medal required particular actions and practices, including the triple locking and unlocking of the Society's strong box, in which the medals and dies were kept (Fig. 1).¹¹

[Figure 1: The strong box, or iron chest, given to the Royal Society by William Ball in 1663. It measures 335 x 660 x 385 mm. Photograph courtesy of The Royal Society.]

A typical chest for valuables, including the RS seal, charter, deeds and money, I take it as a symbol and reminder of the material existence of the Copley Medal (or Copley Medals, since it existed in multiple copies). These objects required safekeeping and distribution, while the dies had to be maintained and used periodically to strike a new batch of medals to serve for

⁹ Nicky Reeves, "Science and the Sea in the Long 18th Century: John Pringle's Copley Medal Discourses: Practical Science and the British Navy", (Lecture, National Maritime Museum, 21 Oct. 2010).

¹⁰ The Copley Medal is described in the classic reference work Edward Hawkins, *Medallic Illustrations of the History of Great Britain and Ireland to the Death of George II* (London: The British Museum, 1885), Vol. 2, pp. 522- 3. See also Jones, "All Shall Have Prizes", p. 1. Histories of the RS also include details of the Copley legacy and the Medal's foundation: Hudson, *Report*, pp. 3-6; Weld, *History of the Royal Society*, Vol. 1, pp. 384-6.

¹¹ The Society's strong box, or iron chest, could only be opened with all three keys and by order of the Council: Weld, *History of the Royal Society*, Vol. 2, p. 532; Vol. 1, p. 171. This was a common way to secure valuables belonging to corporate entities, see e.g. Ben Marsh, "The Meanings of Georgia's Eighteenth-Century Great Seals", *The Georgia Historical Quarterly*, 2012, 96:195-232, p. 199.

the next dozen years. They also became collectors' items and gave physical form to the new role of the RS in rewarding merit, linking Society and recipient. As a prize, the scheme represented change in the use of the Copley legacy and how the award was understood. As a medal, it reveals some of their choices in representing experimental philosophy and its practitioners, and the importance of numismatics to 18th-century learned enquiry.

2. The Copley legacy and Sir Godfrey Copley's Experiment

The story of the Copley Medal did not begin with a medal, or even with a prize. Sir Godfrey Copley (d. 1709), an early fellow of the RS, left to two other fellows, Hans Sloane (Secretary 1693-1713) and Abraham Hill (Treasurer 1679-1700), "the sum of one hundred pounds upon trust for the Royal Society of London for improving natural knowledge to be laid out in experiments or otherwise for the benefit thereof as they shall direct and appoint."¹² Copley would have known well that the Society often struggled to pay for equipment and demonstrators to perform the experiments that were so bound up with the Society's identity. Thus, although the trustees were free to decide how to use the money, Copley's assumption was that this was the most likely need. As trustees, Hill and Sloane remained responsible for how the money was used until their deaths, in 1721 and 1753 respectively. Key suggestions were, however, made by other members of Council and decisions agreed by President (Isaac Newton to 1727, Sloane 1727-41, Martin Folkes 1741-52, George Palmer, Earl of Macclesfield 1752-64) and Council. Thus we can trace via the minutes of Council meetings how the use of the legacy transformed over time into: a) an annual event b) a matter of honour and/or competition and c) a medal.

Hill and Sloane proposed in June 1717 that the money, which had recently been paid to the Treasurer, should "for ever" pay for one or more experiments, "as the Society shall appoint <or approve>, to be made before them". These would be performed "at some Meeting as soon

¹² Quoted in Bektas and Crosland, "The Copley Medal", p. 44.

after the Anniversary Meeting” (St Andrew’s Day, 30 November), and should be written up, read to and registered with Society within six months.¹³ Although not specified, the idea of perpetuity meant using only the interest on the legacy, later identified as £5 per annum. Thus, the following year, it was ordered that the experimenter John Theophilus Desaguliers be paid £5 “on Account of the Experiment he Shew’d the Society on the fifth of December last”. This was in addition to larger amounts, such as £30 in October 1717, that he received for the various experiments he performed over the course of the year. Likewise, in 1719 he was paid £20 (£15 for the year’s service and £5 “for Sir Godfrey Copleys Experiment”) and in 1720 it was £40, “including Sir Godfrey Copleys Experiment”.¹⁴ This new annual event was, we might assume, a shift from Copley’s intention, probably as a result of the Society’s finances having stabilised and the rather small amount of money involved.

Desaguliers was repeatedly given this additional sum, and seems to have been the only person to have received it before 1731, although it was not always specified within his payments. In several years the event was missed altogether, so that in 1726, Sloane was concerned that the “Annual Experiment” was “in danger of being defeated by the failure of Supplying such Experiments”. He proposed they remove this “Evil” and render the legacy “more beneficial and usefull by a more publick Invitation and Encouragement” to be placed in *Philosophical Transactions*. His proposal “to invite Strangers or others to Offer and propose any new and usefull Experiment” potentially opened an element of competition and recognition, should the advertisement have been successful.¹⁵ It is not clear that it was, but it did lead to revived

¹³ CMO/2/272 (20 Jun. 1717).

¹⁴ CMO/2/ 278 (3 Jul. 1718); CMO/2/275 (24 Oct. 1717); CMO/2/288 (5 Nov. 1719); CMO/2/294 (20 Oct. 1720); Bektas and Crosland, “The Copley Medal”, p. 45-6. They wrongly state “the name of Copley is not mentioned” for these payments (p. 46).

¹⁵ Desaguliers was paid £40 in 1721, 1722 and 1723, for experiments made over the year and there is no mention here or elsewhere of the Copley money. In 1724-26 he was questioned about what experiments he had performed, and each time received £30. Sloane’s comments of 17 November 1726 (CMO/2/329) suggest there had not been a Copley experiment in these years, hence the lower payment.

internal interest and use of the eponym “Sir Godfrey Copley’s Experiment”.¹⁶ However, there again appears to have been no designated experiment in 1730, and in November 1731 Roger Gale proposed that as “no Experiment had been yet Offered on S^r Godfrey Copley’s foundation, for y^e present year”, Stephen Gray, who was not yet a fellow and so a “stranger”, “might be Entered on that foot, as an Encouragement to him for the readiness he has always Shewn in obliging the Society with his discoveries and improvements”. For the first time awarded as an incentive (though not a prize), this use of the money was agreed by Sloane who, as trustee, was described here as “Director of this Experiment”. Gray performed the Copley experiment in 1731 and 1732, but it was soon once again down to Desaguliers.¹⁷

Things changed radically after the meeting of 10 November 1736. It was agreed by ballot that Desaguliers should receive £20 payment for “Experiments performed this present year”, plus £5 “for the Experiment of Sir Godfrey Copley”, but then the Vice President, Martin Folkes, made a proposal “to render Sir Godfrey Copley’s Donation for an annual Experiment more beneficial than it is at present”. His idea was:

to convert the value of it into a Medal or other honorary Prize, to be bestowed on the person whose Experiment should be best approved: by which means he apprehended

¹⁶ CMO/2/340 (9 Nov. 1727): on this occasion Desaguliers was paid £35, £5 of which was for “S^r Godfrey Copley’s Experiment”. £5 and the Copley experiment were again mentioned in January 1729 (CMO/3/11) and 1730 (CMO/3/20). On eponyms as a reward system, see Marco Beretta’s article in this issue.

¹⁷ CMO/3/41 (15 Nov. 1731). These experiments were to be part of the entertainment for the Prince of Wales and Duke of Lorraine, who attended a meeting on 25 November: Weld, *History of the Royal Society*, Vol. 1, p. 465. Gray also received £5 for the 1732 experiment in February 1733 (CMO/3/50). In 1734 (CMO/3/147) and 1736 (CMO/3/69), Desaguliers again received the additional £5 but, while he and Gray each received 20 guineas (CMO/3/61 and 63) in 1735, there was no mention of Copley. Gray died in February 1736 and the scheme changed in 1737.

a laudable Emulation might be excited among Men of Genius to try their Invention, who in all probability may never be moved for the sake of Lucre.¹⁸

After some debate, sadly not minuted, the discussion was referred to another occasion. That came at the next Council meeting, on 7 December 1736, when there was further unminuted “Discourse thereon” and

it was agreed to & resolved that instead of Sir Godfrey Copley’s annual Donation of five Pounds, a Gold Medal should be struck of the same Value, with the Arms of the Society impress’d on it; and that the same should be given as a voluntary Reward or honorary Favour for the best Experiment produced within the Year, and bestowed in such a manner as to avoid any Envy or Disgust in Rivalship.

Whereupon M^r Folkes, M^r Gale, M^r West, and M^r Theobald were desired to consult together about a proper Medal.¹⁹

From 1737, we can list the annual winners of the Copley Medal, although the medal itself did not exist until 1742 and the first five received theirs retrospectively.²⁰ The shift to a medal scheme meant a very different use of Copley’s bequest, while the words “Invention” and “Genius” in the quotations above – and, as will be argued, some elements of the medal’s design – indicated a move from the collective witnessing of prepared experiments to the reward of individual merit across a range of activities. First, however, a “proper Medal” had to be created, worth the right amount and representative of the Society and its prize.

¹⁸ CMO/3/69 (10 Nov. 1736).

¹⁹ CMO/3/70 (7 Dec. 1736).

²⁰ Royal Society, “Award Winners: Copley Medal”, https://docs.google.com/spreadsheets/d/1dsunM9ukGLgaW3HdG9cvJ_QKd7pWjGI0qi_fCb1ROD4/pubhtml?gid=1336391689&single=true (accessed 1 Aug. 2016). This list includes Copley legacy recipients from 1731 but they cannot be seen as winners of an award or honorary prize. Later gaps were often made up by subsequently issuing more than one medal: 58 medals were distributed in the 64 years 1737-1800.

3. Making a medal of Copley's Donation

As was typical of medal production, the design and manufacture of the Copley Medal was a collaborative process, involving many people and inspired or constrained by a range of factors. As Mark Jones has noted, medal design, at least before the later 19th century, was rarely a matter of individual artistic vision but was, rather,

a highly segmented process in which a sequence of specialists contributed to the final result. Idea, motto or inscription, sketch, finished drawing, model, puncheon, inscription and die (and since medals have two sides there were two sets of each) might all be the work of different individuals.²¹

Jones notes that the concept and a suitable motto tended to be produced by those with a classical education and/or antiquarian interests.²² Thus Martin Folkes (gentleman natural philosopher and antiquary), Roger Gale (gentleman scholar and antiquary), James West (lawyer, MP from 1741, and antiquary) and James Theobald (timber merchant, natural historian and antiquary) were not only on the RS Council, but each was also an active member of the Society of Antiquaries (SA). Frequent committee men, they were also collectors of a wide range of material, particularly coins and medals.²³ While numismatics was occasionally a topic in RS meetings, the SA minutes show that coins and medals –

²¹ Mark Jones “Introduction” in *Designs on Posterity: Drawings for Medals*, edited by Mark Jones (London: British Art Medal Trust, 1994), pp. 7-9, p. 7.

²² An example of such practice in the later 18th-century commercial context is the assistance that scholar Thomas Hollis gave to the Pingo family: see Christopher Eimer, *The Pingo Family & Medal Making in 18th-Century Britain* (London: British Art Medal Trust, 1998), p. 21.

²³ For all four, see entries in the *Oxford Dictionary of National Biography*. See also John H. Appleby, “James Theobald, F.R.S. (1688-1759), Merchant and Natural Historian”, *Notes and Records of the Royal Society*, 1996, 50:179-189; David Boyd Haycock, “‘The Cabals of a Few Designing Members’: The Presidency of Martin Folkes, PRS and the Society’s First Charter”, *The Antiquaries Journal*, 2000, 80:273-84; and Anna Marie Roos, “Taking Newton on Tour: The Scientific Travels of Martin Folkes, 1733–1735”, *British Journal for the History of Science*, 2017, 50:569–601.

ancient, historic or modern – were often shown and discussed, often by these men. Six days before Folkes suggested that the Copley money be transformed into a medal, he had shown “a very fair coin of Emperor Julian” and Gale brought in some ancient Roman medals. One day after, Folkes showed some medieval gold coins from the collection of the Earl of Pembroke.²⁴ Throughout this period Folkes was researching the history of British coins and the group as a whole discussed a wide range of medals, bearing classical imagery, recent propaganda, intriguing inscriptions and “curious workmanship”.²⁵ Often the inscriptions were copied and the size of the medals represented. These men were expert in matters of medal size, materials, quality, inscriptions and iconography.

At the next RS meeting, the members of the committee “to consider of a proper Medal for the honorary Prize on Sir Godfrey Copley’s Donation” presented a design to Council. It was approved and they were asked to find out “the proper means to procure Leave for a Medal to be struck.”²⁶ At this period, when fears of counterfeit coinage were high, the practice of quality medal making was almost entirely restricted to the London Mint: in the early 1730s the engraver George Vertue noted the “obstructions and difficultyes” in obtaining use of a “coining press” to make medals, noting that the Mint’s machines were not “to be us’d publicly, for fear of ill consequences”.²⁷ Vertue, who was engraver to the SA and long-time collaborator with Folkes on his books on English coins, was later recorded in the Council Minutes as having made “a Draught for the Medal”. It is likely that this was the “Design” shown to Council in February 1737. Despite Bektas and Crosland’s statement that Vertue was the designer, his draft “happened not to be that which was followed”, although he was still ultimately rewarded for his work with two silver medals.²⁸ It is unclear why his design was

²⁴ Society of Antiquaries, Minute Book, Vol. 2 (4 and 11 Nov. 1736).

²⁵ Minute Book, Vol. 2 (8 May 1735).

²⁶ CMO/3/71 (8 Feb. 1737).

²⁷ Eimer, *The Pingo Family*, pp. 6-7; George Vertue, “Vertue Note Books, Vol. III”, *The Walpole Society Volume 22* (1933-4), p. 53.

²⁸ CMO/3/95 (16 Dec. 1741). Bektas and Crosland, “The Copley Medal”, p. 47.

not taken up but seems to have been rejected on 20 October 1738, when “It was recommended to M^f Folkes, M^f West and M^f Theobald, to think further on the Draught of the Medal and of the Dye to be cut for it”.²⁹

Theobald showed the next “Draught of a Design for a Medal” to the Council in January 1739. The fact that he was the one to show it, and was then “desired to procure an Estimate of the Charges for cutting the Dye”, may suggest his principal responsibility.³⁰ However, Theobald was later rewarded with just one silver medal, for “the Care and Pains he was at in getting the Dye cut”, and it is notable that Folkes was not present at the January 1739 meeting.³¹ The design was thus perhaps a joint effort of the committee, or perhaps chiefly of Folkes, for he was the most actively involved in the final stages and was rewarded with a gold medal (although this may simply have been because he was then RS President). Either way, the estimate of costs could only be done accurately once the size and amount of metal were worked out in three dimensions, and thus a wax, plaster or soft metal model would have been required to better reveal the relief and composition.³² Such a model presumably existed before the Society’s order that the “Medal for the annual Prize should be struck according to the Draught laid before the Council, and that it should be made as near as could be to the value of five Pounds.”³³ Yet another “Draught of the Medal” was shown in April 1740, this time, in the absence of Theobald and Folkes, by Cromwell Mortimer – RS Secretary, SA member and

²⁹ CMO/3/80 (20 Oct. 1738).

³⁰ CMO/3/81 (15 Jan. 1739).

³¹ CMO/3/97 (4 Feb. 1742).

³² Eimer, *The Pingo Family*, p. 21-22. See also Christopher Eimer, “James ‘Athenian’ Stuart” Medallie Design and Procedure”, in *Designs on Posterity* edited by Jones, pp. 131-7, p. 131 for an example of where a wax model revealed that a design required too much metal and was replaced by one in lower relief.

³³ CMO/3/85 (12 Nov. 1739). Folkes was the only member of the medal committee present on this occasion.

assistant to Sloane. This may have been a soft metal proof struck from the die, or the gold “Proof piece” for which the Society later paid £5.³⁴

The model, the die and the proofs were all the work of the medallist John Sigismund Tanner. He had been brought to the Mint in 1729 by John Conduitt, Master of the Mint, to assist the Chief Engraver, John Croker, before succeeding to this role in 1741. Vertue had shown interest in Tanner’s skills, noting in 1735 that he “goes on very promisingly” and in 1736 describing some of his medal work and wax modelling, hoping he might prove “a usefull and [*sic.*] ornament to England in that branch of Art.”³⁵ Like Croker, Tanner took on medal making when he was not required to work on coinage but, while Croker had made 44 medals, Tanner made only 5 in his 40 years at the Mint. The Copley Medal was his last, and the only one struck when he was Chief Engraver.³⁶ This was due to the fact that Tanner was kept busy with coinage, while Croker had had more time on his hands. As Master of the Mint, Newton had, in 1706, granted Mint engravers the right of private medal making to keep their skills practised and apprentices trained, arguing that “good graving is the best security of the coin”. Private work should be high quality, distinguished from official by including the engraver’s initials, and permission had to be granted by the Master.³⁷ Since 1737, this had been Richard Arundell, and his request to know how many medals the RS required was discussed at the Council Meetings of 16 December 1741 and 19 January 1742, before the medals and dies were presented on 22 February 1742.³⁸

³⁴ CMO/3/86 (16 Apr. 1740); CMO/3/96 (19 Jan. 1742).

³⁵ Vertue, “Vertue Note Books”, pp. 76, 79.

³⁶ See Eimer, *The Pingo Family*, pp. 6-7; L. Forrer, *Biographical Dictionary of Medallists: Coin, Gem, and Seal-Engravers, Mint-Masters, &c., Ancient and Modern, with References to their Works B.C. 500-A.D. 1900*, (London: Spink & Son, 1904-30), Vol. 6, pp. 14-16.

³⁷ See John Craig, *Newton at the Mint* (Cambridge: Cambridge University Press, 1946), quote at p. 54.

³⁸ CMO/3/98 (22 Feb. 1742).

It has been seen as curious that it took so long for the Copley Medal to move from idea to object. However, when we consider the people and processes involved, as well as the time between Council Meetings, it is hardly surprising, that “The records do not give the reason for such a delay.”³⁹ Tanner’s time, in particular, would have been very difficult to obtain. Even without other responsibilities, a quality die would have taken several weeks to make and Tanner was busy producing dies for the new gold coins of 1739 and the copper coins of 1740.⁴⁰ The time and skill required is clear from the £50 that he charged for the two dies and their production, although the final result was not, perhaps, the finest example of Tanner’s art.⁴¹ It is frustrating that we do not know more about the drawings and ideas that went into the medal design, nor what Vertue’s idea had been and why it was considered unsuitable, although still rewardable. Some suggestions can, however, be made by considering the design of the medal and comparing it to other medals, emblems and the iconography of experimental science and the Royal Society.

4. The medal’s design

The reverse of the medal (Fig. 2) had been uncontentious, with use of the Royal Society’s coat of arms mentioned at the very beginning. This was the Society’s most important symbol of corporate status, appearing on its seal, engraved on the mace gifted by Charles II and included in the frontispiece to Thomas Sprat’s 1667 *History of the Royal Society*. Its design and motto, *Nullius in Verba* (nothing on authority), are closely associated with John Evelyn, a founding Fellow with antiquarian interests and a concern for the Society’s representation. Agreed in 1662, the arms were given royal approval and physical form as a die for imprinting on wax seals in 1663.⁴² Although on the reverse of the medal, the coat of arms in some ways

³⁹ Bektas and Crosland, “The Copley Medal”, p. 47.

⁴⁰ Eimer, *The Pingo Family*, p. 7; Forrer, *Biographical Dictionary*, p. 15.

⁴¹ CMO/3/96 (19 Jan. 1741/2).

⁴² See J.D.G.D., “The Arms of the Society”, *Notes and Records of the Royal Society of London*, 1938, I:37-39. Michael Hunter, *Establishing the New Science: The Experience of the Early Royal Society* (Woodbridge: Boydell Press, 1989), pp. 41-2, discuss Evelyn’s ideas for “Armes & Mottos proposed

plays the part of the traditional obverse, with the Society's corporate identity acting in place of the typical portrait of the monarch, donor, recipient or honoured individual.

[Figure 2: Reverse of the Copley Medal (BM: M.8316), diameter 42mm. ©The Trustees of the British Museum.]

The inscription on the obverse (Fig. 3) records the donor – “G . COPLEY BAR^T.” – and with “DIGNISSIMO” (to the most worthy) underscored the new idea of an honour and prize, as do the laurels held out by the seated figure of Pallas Athena. The exergue was to be engraved with the name of the recipient and date of award. Athena appears as a personification of wisdom, arts and skill. She holds out the wreath in her right hand, while with her left she cradles the Ephesian Artemis, a symbol of nature. The Copley armorial shield leans against the plinth on which she sits she surrounded by objects signifying the experimental and practical sciences. While the instruments depicted on the John Evelyn-designed frontispiece to Sprat's *History* have been shown to be actual objects of recent interest to the RS, here they are more generic.⁴³ The globe, scroll and dividers, which appear on the left along with a marine compass, are not dissimilar to those that appear around Athena/Minerva's feet on another Tanner medal.⁴⁴ Those on the right are, however, more specific to experimental philosophy and closer to the “innovative, active” representation of the Society we find in the

for the R. Society”, including Nullius in Verba, depicted in 1660 (British Library Add MS 78344, fol. 114). This manuscript is reproduced in Michael Hunter, *The Image of Restoration Science: The Frontispiece to Thomas Sprat's History of the Royal Society* (Abingdon and New York: Routledge, 2017), p. 28.

⁴³ See Jim Bennett, “The Instruments” in Hunter, *The Image of Restoration Science*, pp. 79-127.

Evelyn's designs for the Society's arms include two with generic instruments: a plumb line and crossed telescopes, described by Charles John Smith, who published an engraved facsimile in *Historical and Literary Curiosities* (1840), as “allegorical rather than heraldical” (n.p.).

⁴⁴ British Museum, John Sigismund Tanner, Jernegan's Lottery Medal, M. 8307 (1736). Made as high-end tokens for a lottery run to recoup costs on an unsold extravagant silver wine cistern, this medal depicted Minerva and Queen Caroline, “GROWING ARTS” for Britain and Empire.

frontispiece.⁴⁵ As well as what appears to be leaves and stones, we find a distillation apparatus – an alembic and a furnace with exaggeratedly fierce flames – and two icons of the Society’s experimental programme: an air pump and a prism. This time, as with the Sprat frontispiece, the air pump can be linked to a maker, clearly being based on a Hauksbee machine, although by no means accurately represented.⁴⁶

[Figure 3: Obverse of the Copley Medal (BM: M.8316). This medal is inscribed to John Belchier, the first Copley Medal recipient. It was awarded in 1737 but he only received the newly struck medal in 1742. ©The Trustees of the British Museum.]

The inclusion of globe, dividers, telescope, scroll and compass – and the leaves and rocks that may nod to natural history – suggest that the designers did not wish this depiction of science to be restricted to the kind of set-piece demonstrations associated with Desaguliers’ and Gray’s Copley experiments. Rather, the medal incorporates a broader notion of experimental science, which included discovery, trial and observation. It is possible that a shift of this sort was behind the change of mind regarding Vertue’s design. Between its initial acceptance and the order to reconsider, Sloane had directed “that the five Pound Experiment for the last year should be assigned to M^r Belchier for his Experiment of colouring the Bones of living Animals by a Diet of Madder-Root.”⁴⁷ This, through which Belchier established that the dye in the roots of madder stained bones and might be a means to study circulation, was not an experiment that could be performed before the Society. While the 1738 winner, James Valoue, had demonstrated his pile-driving machine to the RS, the award for his “invention” again marked a departure, as did Stephen Hales’s 1739 award for work on meat preservation

⁴⁵ Bennett, “The Instruments”, p. 80.

⁴⁶ See Terje Brundtland, “Francis Hauksbee and his Air Pump”, *Notes and Records of the Royal Society*, 2012, 66:253-72. In the late 19th century a new version of the die was engraved, signed M.T., which includes a straight-handle on the air pump and more detail on the base. See e.g. Wellcome Collection, Copley Medal awarded to Joseph Lister, M0007837 (1902).

⁴⁷ CMO/3/76 (8 Nov. 1737).

and cures for the stone and Christopher Middleton's 1742 medal for observations during an Arctic voyage. These awards crossed a range of fields that, like the medal design, speak to the breadth of RS interests. Sloane's idea of suitability for an honorary prize also seem to be nearer Folkes's idea of ingenuity than the official focus on "best Experiment".⁴⁸ This is echoed in a change of language in the Minutes: in 1738-40, they refer to both the "annual Experiment" and "Prize" but from 1741 Copley's "prize" or "medal" fully replaced his "experiment".

The unusual inclusion of the Ephesian Artemis on the medal, cradled by Athena, also points to an inclusive notion of nature and its investigation. This figure was based on Roman depictions of the ancient cult statue in the Temple of Artemis: a female figure with a veil and (often) crown, a chest with numerous breasts and lower body encased in a sheath with depictions of animals. It is now believed that the "breasts" were a misunderstanding of sculpted representations of the original wooden figure's attached ornaments, yet they and the animals led to the figure being identified with nature and its nourishment. The Ephesian Artemis was also identified as the Roman Diana and linked to the Egyptian Isis. Drawing on ancient texts, scholars from the 16th century onward played with the identities of these goddesses, uniting them in emblem books to represent Nature. The veil of the Ephesian Artemis/Isis was also associated with the idea of the veil or secrets of nature.⁴⁹ Thus this peculiar antique figure appeared in several 17th-century frontispieces in a confident

⁴⁸ On Folkes's conception of genius and invention as personal and innate, see Jim Bennett, "James Short and John Harrison: Personal Genius and Public Knowledge", *Science Museum Group Journal*, 2014, 2 doi: 10.15180/140209. In 1740 and 1741 faithful servants to the RS were rewarded with medals in addition to their payments: physician Alexander Stuart as Croonian Lecturer and Desaguliers as demonstrator.

⁴⁹ Pierre Hadot, *The Veil of Isis: An Essay on the History of the Idea of Nature*, trans. by Michael Chase (Cambridge, Mass. and London, The Belknap Press of Harvard University Press, 2006), pp. 233-7. John Evelyn, discussing medal reverses, wrote "sometimes we find [Diana] naked and full of Breasts, a Basket of Fruit on her Head, as they picture Nature", adding "she is likewise accompanied oftentimes with some Egyptian Deity, as Serapis, Isis, or Apis": John Evelyn, *Numismata. A Discourse of Medals, Antient and Modern....* (Benj. Tooke: London, 1697), pp. 56-7.

representation of the role of natural or experimental philosophy in revealing knowledge (e.g. Figs. 4 and 5).⁵⁰ On the Copley Medal, however, the figure is small and held as an attribute of Athena rather than forming the focus, or desired objective. This is reminiscent of the use of a Ephesian Artemis ‘statuette’, inspired by depictions on ancient coins, as “the figure of nature” in two of Cesare Ripa’s emblems in *Iconologia: Principio and Inventione*.⁵¹ These representations have Nature as the beginning or inventor of all things, but ‘Invention’ uses her intellect and activity to ape this productivity and draw on nature’s bounty. The choice is pertinent to the shifting use of Copley’s bequest, from financing an experimental performance to the reward of individual effort, invention and discovery.

[Figure 4: Title page to Vol. 2 of Athanasius Kircher, *Mundus Subterraneus* (1665), courtesy of Linda Hall Library.]

[Figure 5: Title page to Antoni van Leeuwenhoek, *Ontledingen en Ontdekkingen* (1696), courtesy of Linda Hall Library.]

The Ephesian Artemis offered contemporaries a range of meanings. It suggested antiquarian learning and, in the 17th century, the restoration of ancient knowledge. However, increasingly

⁵⁰ Examples discussed by Hadot, *The Veil of Isis*, include various frontispieces of Antoni van Leeuwenhoek, Gerardus Blasius, *Anatome Animalium* (1681) and (without the unveiling motif used explicitly) Athanasius Kircher, *Mundus Subterrenaeus* (1665). Leeuwenhoek’s *Arcana Naturae Detecta* and Kircher’s *Mundus Subterrenaeus* were in Folkes’s library: *A Catalogue of the ... Library of Martin Folkes, esq., President of the Royal Society ...* (London, 1752). We might also note the frontispiece to John Evelyn’s translation of Lucretius’s *De Rerum Natura* (1656). Designed by Mary Evelyn and etched by Wenceslaus Hollar, it was based on the frontispiece to Michel de Marolles’s 1650 French translation, itself based on that to G. Jansson’s edition (Amsterdam, 1620). All three include a lactating Ephesian Artemis in decreasingly formalised and increasingly feminised form. See Hunter, *The Image of Restoration Science*, pp. 35-6; Stuart Gillespie and Philip Hardie (eds), *The Cambridge Companion to Lucretius* (Cambridge: Cambridge University Press, 2007), pp. 230-32.

⁵¹ Cesare Ripa, *Iconologia* (Venice, 1645), pp. 502, 292. The first English edition was by Pierce Tempest, *Iconologia: or, Moral Emblems, by Cesare Ripa* (London, 1709), pp. 62-3, 42-3.

the figure and its veil had begun to emphasise the mystery rather than mastery of Nature. Hadot points to the description in the 1759 *Iconology* of Jean-Baptiste Boudard, who stated that the figure's veil "signifies, according to the opinion of the Egyptians, that the most perfect secrets of Nature are reserved for the Creator". This was intrinsic in the later 18th century to the type Hadot calls the "Masonic Isis", which also represented a pantheistic notion of universal God and Nature.⁵² Although in the 1730s-40s this characterisation was in the process of formation, its development was intimately linked to the interests of the medal's proposer, Folkes. He was a member of the short-lived Egyptian Society for "promoting and preserving Egyptian and other ancient learning", founded by Lord Sandwich and other "philologists".⁵³ Folkes, and fellow SA and RS member William Stukeley, were elected at the first meeting, on 11 December 1741. This date was the Feast of Isis, which the Society committed to marking annually. At one meeting Stukeley presented a dissertation on the feast, which he linked to the practices of ancient British Druids. The Society also took particular interest in medals, possessing a collection, paying for engravings and drawings and having an official examiner of medals.⁵⁴ The Society of Antiquaries, too, explored Egyptian antiquities, as did the Freemasons, among whom we find Folkes, Stukeley and many other RS fellows, including Desaguliers.⁵⁵ Folkes had become Deputy Grand Master of the Grand London Lodge in 1724, and founded the Maid's Head Lodge in Norwich in the same year.

⁵² Quoted in Hadot, *The Veil of Isis*, p. 238. See also the discussion of the use of this figure in Joan Steigerwald, "Figuring Nature/Figuring the (Fe)male: The Frontispiece to Humboldt's *Ideas Towards a Geography of Plants*" in *Figuring it Out: Science, Gender, and Visual Culture*, edited by Ann B. Shteir and Bernard Lightman (Hanover and London: Dartmouth College Press, 2006), pp. 54-82.

⁵³ M. Anis, "The First Egyptian Society in London (1741-1743)", *Bulletin de l'Institut français d'archéologie orientale*, 1952, 50:99-105, pp. 99, 104.

⁵⁴ Anis, "The First Egyptian Society", pp. 103, 102.

⁵⁵ See Paul Elliott and Stephen Daniels, "The 'School of True, Useful and Universal Science'? Freemasonry, Natural Philosophy and Scientific Culture in Eighteenth-Century England", *British Journal for the History of Science*, 2006, 39:207-229. Egyptian artefacts were occasionally brought to meetings of the Society of Antiquaries: see e.g. 8 May 1735 and 8 January 1736, Minute Book, Vol. 2.

Two other Freemasons, closely linked to Folkes's circles, used the image of the Ephesian Artemis around the time the Copley Medal was being designed. One was Stukeley who, although he later fell out with Folkes, was a close friend in the 1720s and they continued to have many shared interests. Stukeley drew a multi-breasted figure of Nature holding a portrait of Newton that was included in his 'Memoirs of Sir Isaac Newton's Life'.⁵⁶ The latter was depicted in a roundel "in the antique way of profile", as if it for a medal design. The portrait was done around 1726 and pasted into the 1752 manuscript, making it difficult to date the surrounding design.⁵⁷ The other was William Hogarth, to whom Folkes sat for a portrait around 1740. Hogarth, who revelled in layering multiple meanings in his graphic art, including Masonic symbolism, made use of the Ephesian Artemis as statue in a 1731 etching used on subscription tickets.⁵⁸ Usually titled 'Boys Peeping at Nature', this depicts three putti, one drawing the statue, one engraving it and the other attempting to stop a satyr lifting its skirt. This was an allegory of the work of the satirist, who must lift the veil to reveal truth, here the seamier side of life. It is an image perhaps inspired by his familiarity with Rubens' *Nature Adorned by the Graces* (c. 1615), which was from 1716 to 1734 in the collection of his father-in-law James Thornhill, and the Freemasonry to which he was introduced by Thornhill.⁵⁹ Hogarth also included the Ephesian Artemis in the coat of arms of the Foundling

⁵⁶ Royal Society, William Stukeley, *Memoirs of Sir Isaac Newton's Life* MS/142 (1752), see RS Picture Library, <https://pictures.royalsociety.org/image-rs-9256> (accessed 24 Jul. 2018). On Stukeley and Folkes's later relationship, see G.S. Rousseau and David Haycock, "Voices Calling for Reform: The Royal Society in the Mid-Eighteenth Century – Martin Folkes, John Hill, and William Stukeley", *History of Science*, 1999, 37:377-406. As friends, see Haycock, "The Cabals of a Few", p. 280 and Roos, "Taking Newton on Tour", p. 572.

⁵⁷ See Milo Keynes, *The Iconography of Sir Isaac Newton to 1800* (Woodbridge: The Boydell Press, 2005), pp.27-29

⁵⁸ The portrait, dated c.1740, was presented to the RS in 1742: <https://pictures.royalsociety.org/image-rs-9283> (accessed 24 Jul. 2018). 'Boys Peeping at Nature' was used on etched subscription tickets for *The Harlot's Progress*: British Museum, 1857,0509.17 (1731) and reused in 1737 and 1751 for other print series (e.g. BM: 1868,0822.1517).

⁵⁹ The painting is now in Kelvingrove Art Gallery. See Joost Vander Auwera, *Rubens, A Genius At Work: The Works of Peter Paul Rubens in the Royal Museums of Fine Arts of Belgium Reconsidered*

Hospital, granted in 1747 (Fig. 6), an institution with which Hogarth and Folkes were closely involved from its 1739 foundation.⁶⁰ It is tempting to conclude that Hogarth had at least some input into the Copley Medal design.

[Figure 6: Arms of the Foundling Hospital, engraved by T. Cook after William Hogarth, 1809. Wellcome Collection CC BY.]

Freemasonry was central to another medal project, which Folkes pursued concurrently with the Copley scheme. In 1733-5 he toured Italy, in part to assist with the foundation of a lodge in Rome, events which were commemorated in a medal of Folkes made by the papal medallist Ottone Hamerani.⁶¹ This is one of the two earliest Masonic medals, the other marking the creation of the Florentine lodge in 1733, before the type took off in the second half of the 18th century. The obverse features a classical bust of Folkes, which he sat for in Hamerani's studio in Rome in early 1734, while the remarkable reverse (Fig. 7) depicts a sphinx with the pyramid tomb of Caius Cestius in Rome, and the Sun with bursting rays above.⁶² The medal is inscribed "SVA SIDERA NORVNT" (They know their own stars) and dated to 5742 AL. Annus Lux, the Year of Light, is the Masonic calendar running from the supposed date of creation in 4000 BC, making the date 1742 AD, when the medal was finally struck. The motto nods to Folkes's achievements in astronomy, while the *Aeneid* passage from which it is derived refers to the Sun and stars known to the inhabitants of Elysium, who include those

(Tielt: Uitgeverij Lannoo, 2007), pp. 115-6 and Ronald Paulson, *Hogarth: Volume 1 The "Modern Moral Subject"* (Cambridge: The Lutterworth Press, 1992), pp. 278 ff.

⁶⁰ The figures are identified as "Nature" and "Britannia" in a drawing: Foundling Museum, L2008.2.2 (c.1747). Satirical comments on the page suggest it was produced at a later date.

⁶¹ See William Eisler, "The Construction of the Image of Martin Folkes (1690-1754) Part I", *The Medal*, 2011, 58:4-29 and, for other objectives of the tour, see Roos, "Taking Newton on Tour".

⁶² British Museum, Ottone Hamerani, Medal, M. 8467 (1742); Eisler, "The Construction ... Part I", p. 13.

“who ennobled life by arts discovered”.⁶³ It suggests the light and knowledge of Freemasonry, also symbolised by the revealing rays of the Sun over the pyramid and sphinx. The latter, suggesting “enigmatic wisdom” or “the perspicacity that unveils the secrets of nature”, has a veil and crescent moon on her side.⁶⁴ This is almost certainly a symbol of Isis, although it was also, perhaps not coincidentally, a device on Folkes’s crest, incorporated from that of the family of his mother, Dorothy Hovell.⁶⁵ Its inclusion on the Foundling Hospital arms is also conspicuous. The Egyptian-inspired Roman pyramid depicted on the medal had been excavated in 1660 and from 1716 was a marker for the location of Rome’s Non-Catholic Cemetery. The apparent link between ancient Egyptian and Roman civilisations, passing on the light of knowledge between them and on to their heirs the Freemasons, undoubtedly appealed to Folkes, while the Protestant cemetery in Catholic Rome may symbolise tolerance and freethinking. The medal as a whole links the mysteries of ancient knowledge with Enlightenment thought.⁶⁶

[Figure 7: Reverse of Ottone Hamerani’s 1742 Folkes Medal (BM: M. 8466), ©The Trustees of the British Museum.]

Folkes was, then, involved with two medal projects at the same time. While one started in 1733 and the other in 1736, both medals were finally struck in 1742. The RS design was less cryptic and mysterious, but the decision to include the figure of the Ephesian Artemis surely

⁶³ Eisler, “The Construction ... Part I”, p. 6; William Eisler, “The Construction of the Image of Martin Folkes (1690-1754): Art, Science and Masonic Sociability in the Age of the Grand Tour, Part II”, *The Medal*, 2011, 59:4-16, drawing illustrated p. 7.

⁶⁴ Eisler, “The Construction ... Part I”, p. 7; Hadot, *The Veil of Isis*, p. 240.

⁶⁵ Eisler, “The Construction ... Part I”, p. 7. Eisler states that this was Folkes’s wife’s family, but his wife was the actress Lucretia Bradshaw: David Boyd Haycock, “Folkes, Martin (1690–1754)”, in *Oxford Dictionary of National Biography*, online edition, ed. David Cannadine (2008) <http://www.oxforddnb.com/view/article/9795> (accessed 8 Nov. 2016).

⁶⁶ Folkes was a Deist, who, according to Stukeley, was an “errant infidel” and started an “infidel Club”, Rousseau and Haycock, “Voices Calling”, p. 397.

points to the dominance of Masonic and deist ideas of nature and science within the Society at this time and, at least, the connections between antiquarian knowledge and experimental philosophy.⁶⁷ At the same time, it borrowed from Ripa's emblem of Invention, suiting the changing requirements of the award. However, the numismatic and antiquarian elements of RS activity not only help to elucidate the design of the Copley Medal, but also explain why the idea of a prize medal arose in 1736.

5. The meaning of medals

Folkes was keenly aware of the use of medals, as physical objects, to demonstrate learning, celebrate individuals, reveal connections and reinforce networks. Other things could perform such functions: on his travels he noted that copies of *Philosophical Transactions* were well received and suggested that bestowing "a few such presents" would "increase our reputation abroad".⁶⁸ However, the attractiveness, portability and durability of coins and medals gave them greater significance. Not only could they be exchanged and circulated in the present, they were an exemplary primary source for constructing chronologies and writing histories of the past and in the future. In his *Numismata* (1697), John Evelyn described ancient coins as "the most lasting and ... Vocal Monuments of Antiquity" and, noting the recently begun project to produce a Medallic History of France, saw them as a way to secure future reputations. He urged the striking of medals of today's honoured and famous, including those known for "*experimental Learning*", who were as "fit to have been stamp'd, and worn in *Medals of Gold*" as any Greek or Roman.⁶⁹ Roger Gale, of the original medal committee, translated a book on the *Knowledge of Medals* that likewise declared that history "hath no

⁶⁷ On the attempts to unite the societies, to which Folkes was central, see Haycock, "The Cabals of a Few" and Rousseau and Haycock, "Voices Calling". On the links between these intellectual endeavours, see Elliot and Daniels, "School of True".

⁶⁸ Rousseau and Haycock, "Voices Calling", pp. 390-391.

⁶⁹ Evelyn, *Numismata*, pp. 1, 257, 341-2 (original emphasis). On the French Medallic History, begun by Louis XIV and Jean-Baptiste Colbert in 1663, see Jones, *Art of the Medal*, pp. 81-3.

Testimony more solid than that of Medals, to justify the Truth of its Facts”.⁷⁰ Striking a new medal would confer immortality on the RS and its aims, as well as the benefactor and winner, as the collections, catalogues and publications of these RS/SA men testified. The habit of medallic commemoration of individual achievement was beginning to take off in Britain. The RS was linked into this inasmuch as its former President, Newton, and his nephew-in-law, Conduitt, an RS Council Member, were the two Masters of the Mint prior to Arundell. They were involved with the production of official coronation medals and both were early non-royal subjects of medals by Mint engravers, in designs that included personifications of Science and Truth.⁷¹

The Copley Medal project was bound up with a contemporary concern for commemoration and preservation for the future within both the RS and SA. It is suggestive that immediately after the medal committee was formed, Folkes “proposed that some Impressions might be taken of the Title Page to Sprat’s History of the Royal Society from the Plate in the Society’s Custody”, since it was “now very scarce and seldom to be met with.” Mortimer, as Secretary, was asked to locate it and “other Plates that might be cleaned and fit to take off Impressions of any such Cutts as are become scarce”.⁷² It reveals Folkes’s interest in the Society’s institutional history, relics and self-presentation, in ways that are reminiscent of Evelyn half a century earlier. Tellingly, Thomas Birch, a recent and active addition to both societies, donated a copy of the frontispiece to the SA in 1738. Similarly, Mortimer, who about 1737 had begun an unfulfilled project to write the histories of the RS, SA and Spalding

⁷⁰ [Louis Jobert], *The Knowledge of Medals: or, Instructions for Those who apply Themselves to the Study of Medals both Ancient and Modern*, trans. Roger Gale (London: T. Caldecott, 1715), Preface.

⁷¹ British Museum, John Croker, Newton medal, G3,IP.722 (1727); Gravelot (designer) and John Sigismund Tanner (engraver), Conduitt medal, M.8310 (1737). The RS approved the Newton medal but did not order commemorative medals before James Cook’s (Lewis Pingo, M.4837 [1784]). Several Fellows, including Folkes, were depicted in medals by the Swiss engraver Jean Dassier in the 1730s-40s. On Newton’s role in medal design, see Joseph Hone, “Isaac Newton and the Medals for Queen Anne”, *Huntington Library Quarterly*, 2016, 79:119-148 and Craig, *Newton at the Mint*, pp. 51-3.

⁷² CMO/3/70 (7 Dec. 1736).

Gentleman's Society, had presented a copy of *Philosophical Transactions* "relating to an ancient date". In 1742, Folkes gave the SA a silver Copley Medal, presumably to be kept in "the proper drawers" ordered for their coin and medal collection in 1736.⁷³ Theobald took a leading role in inspecting and safeguarding these and other SA collections, playing a similar role for the RS repository. Folkes, meanwhile, was "keenly interested in the Archives of the [Royal] Society and the Library generally" and helped promote efforts to catalogue both.⁷⁴

Folkes's numismatic work, however, focused chiefly on metrology and chronology.

Returning from Rome, and Folkes read a paper based on the collections he examined there to the SA "on the Weights & Values of the antient Coins". He worked throughout the 1730s and 1740s on English coins, in response to a general and unfulfilled SA ambition to publish a complete history of British coins. These works likewise recorded weights and "present intrinsic values", a project for which careful comparative research among books and collections, measurement and "friendly officials at the Tower mint" were essential. In the volume on silver coins he constructed a lengthy historical-chronological introduction.⁷⁵ The metrological approach, which drew on Newton's work at the Mint to establish purity of

⁷³ Minute Book, Vol. 3 (16 March 1738), p. 113; Vol. 2 (16 Dec. 1736), p. 252; Vol. 4 (18 Feb. 1742), p. 103; Vol 2 (8 Jan. 1736), p. 133. On Mortimer's planned histories, see W.P. Courtney, "Mortimer, Cromwell (c.1693–1752)", rev. Michael Bevan, *Oxford Dictionary of National Biography* <http://www.oxforddnb.com/view/article/19341> (accessed 17 Nov. 2016). Mortimer received a letter outlining the history of the Spalding Gentleman's Society from its founder Maurice Johnson on 15 August 1737: Leicestershire Record Office, Papers of the Mortimer Family, DE 107/101. The SGS united antiquarian, scientific, artistic and literary interests, and its members included Newton, Sloane, Mortimer, Stukeley, Vertue, West, Folkes, Theobald, Birch and Desaguliers. Johnson and Stukeley had reestablished the SA in 1717, and both were involved in freemasonry.

⁷⁴ Minute Book, Vol. 2 passim; Appleby, "James Theobald"; Marie Boas Hall, *The Library and Archives of the Royal Society 1660-1990* (London: The Royal Society, 1992), pp. 9, 13.

⁷⁵ Haycock, "Folkes, Martin"; Hugh Pagan, "Martin Folkes and the Study of English Coinage in the Eighteenth Century", in *Enlightening the British: Knowledge, Discovery and the Museum in the Eighteenth Century* edited by R.G.W. Anderson, M.L. Caygill, A.G. MacGregor and L. Syson (London: British Museum Press, 2003), pp. 158-63; Martin Folkes, *A Table of English Silver Coins from the Norman Conquest to the Present Time* (London: Society of Antiquaries, 1745).

metals and fix prices for gold and silver, perhaps made it natural for Folkes to have thought of the annual interest on the Copley legacy as so much bullion that might be converted into medallic form.⁷⁶ Yet his first comments on the medal emphasise it as an honour: assuming the gentlemanly and scholarly disinterest of experimental philosophers, unmoved by mere “lucre”, he raised its meaning above the cost of experiments or metal. But it was also the case that medals could be reconverted. Those struck at the Mint or certified at the Assay Office contained metals of the same purity as coins. Thus the founder of the Society of Arts, William Shipley, suggested that gold medals “may serve both for premiums and also for honorary gratifications”. Realising that some might be obliged to sell or melt their medal, the Society provided a certificate to “perpetuate the honour”.⁷⁷ For similar reasons Count Rumford stipulated that his RS prize should consist of both a gold and a silver medal. Together worth £60, these medals were much larger than the Copley, although because of its accrued history the latter remained the Society’s premier reward.⁷⁸

Thus the value attached to a particular medal can remain linked to its metal content or vary widely. The values of the medals struck by Tanner were discussed at RS Council meetings in early 1742. He was “examined about the Weight and Fineness of the Medals” and testified that “Medals were always made of fine Gold and Silver, and might be certified as such, if required”. Once delivered, he confirmed a gold medal was 1oz, 2pwt and 3½gr, valued at

⁷⁶ Derek Gjertsen, *The Newton Handbook* (London and New York: Routledge & Kegan Paul, 1986), pp. 363-7 on Newton’s work in valuing silver, gold (as guineas) and foreign coinage, dealing with counterfeiters and clippers, and testing coinage by assay. See also Craig, *Newton at the Mint* and Richard S. Westfall, *Never at Rest: A Biography of Isaac Newton* (Cambridge: Cambridge University Press, 1983), pp. 551-625.

⁷⁷ Jones, “All Shall Have Prizes”, p. 4; See James F. English, *The Economy of Prestige: Prizes, Awards, and the Circulation of Cultural Value* (Cambridge, Mass. and London: Harvard University Press, 2005), pp. 157-61 for later examples of the “recoverable materials” and monetary value of medals, and pp. 183-4 on the commercial afterlife of medals and trophies.

⁷⁸ Weld, *History of the Royal Society*, Vol. 2, p. 215; P.L. Simmonds, “Notes on Medals and Societies Granting Medals”, *Journal of the Society of Arts*, 1875, 23:745-751, p. 749. As Rumford suggested, additional money (extra interest, or if not awarded) might be added to the winner’s premium.

£4.19s.2d. (10d under the desired £5), and a silver was 1oz, 1pwt and 22gr, valued at 6s.11d. This followed Newton's 1717 fixed prices for gold and silver but the medals' market value also included the time and skill of their makers and their association with the RS. Reinforcing this, the Council decided "the Silver Medals should be prized to such Members as were desirous to subscribe for the same at 10^s.6^d."79 At the previous meeting it had been agreed to strike 12 gold, 12 silver and 24 copper medals; this was later upped to 13 gold and as many silver as demand from subscribers might suggest. By the time they were delivered, it was 14 gold, 92 silver and 24 copper, most of which had immediate homes.⁸⁰ Folkes, now President, "was desirous to keep one of the Gold Medals for his own Use" and the five Copley Medal recipients since 1737 were to have theirs delivered at the next meeting. In addition, Folkes proposed that Sloane, former President and surviving trustee of Copley's will, should be given a gold medal, and the collector Richard Mead was allowed to buy one for £5. Folkes also proposed that, in addition to gifting two silver medals to Vertue for his unused design, one each should be given to Theobald, Arundell, and the two RS Secretaries.⁸¹

Folkes was initially to buy his medal from the Treasurer, but was asked to "accept of the Gold Medal as a Present, and not allow them to take the Value of it". It remained part of his collection and was sold after his death, fetching £4.6s, despite the additional worth that we might assume would accrue to such an object over time and with the additional lustre of being associated with a rich collection assembled by a renowned collector – although, of course, it lacked association with a prize winner.⁸² Theobald's silver medal likewise was kept with his

⁷⁹ CMO/3/96 (19 Jan. 1742) and CMO/3/98 (22 Feb. 1742).

⁸⁰ CMO/3/97 (16 Dec. 1741).

⁸¹ CMO/3/96 (19 Jan. 1742) and CMO/3/97 (4 Feb. 1742).

⁸² CMO/3/98 (22 Feb. 1742); *A Catalogue of the Genuine, Entire and Choice Collection of Coins, Medals, and Medallions, In Gold, Silver, and Brass, of the Learned and Ingenious Martin Folkes, Esq; Late President of the Royal Society* (London, 1756) – the British Library copy has manuscript notes of the prices each lot fetched: 1000*l.* 9*s.* 6*d.* in total.

collection until his death.⁸³ The minutes suggest that 80 silver medals were subscribed to, with the Society purchasing 12 more, six of which were immediately dispensed as above. Four copper medals, at 5s each, were bought by the Duke of Richmond. Folkes was to take custody of four silver and 20 copper medals and the Society's remaining seven gold medals, six silver and twenty-four copper were placed in the strong box (Fig. 1) – a reminder that the Copley bequest had, through significant additional investment, taken physical form.⁸⁴

6. Managing the medals

Annually for the next decade, at the meeting before St Andrew's Day, Folkes would inform the Council whom Sloane, who was in increasingly poor health, had chosen as medal recipient. In 1748, the minutes suggest that the Council formally approved Sloane's recommendation, but generally the name was simply passed on until his death in 1753. After this date the names, usually put forward by the President, were agreed by ballot, nearly always unanimously. Undramatic and uncontested as it generally was, the decision necessitated action. Each year Council ordered that a medal should be retrieved from the strong box and that the name and date should be engraved on it ahead of presentation on 30 November. By 1747 this was done "according to Annual Custom", although the material nature of the process meant that irregular actions might also be demanded. That year the Council asked to inspect the dies, which were found to have rusted after being "injudiciously packed up with Cotton" that had become damp. The watchmaker John Ellicott, then on Council, volunteered to clean and repack them, and they were duly delivered to his workshop.⁸⁵ There they stayed until April 1749, finally returned after Council asked in July 1748 for them to be retrieved so that another 12 gold medals might be struck at the Mint, the existing stock having been used.⁸⁶ Thereafter the dies were returned to the strong box, to be

⁸³ Appleby, "James Theobald", p. 184.

⁸⁴ CMO/3/98 (22 Feb. 1742).

⁸⁵ CMO/3/120 (11 Nov. 1747).

⁸⁶ CMO/4/2 (1 Jul. 1748) and CMO/4/8 (21 Apr. 1749).

extracted periodically to make further medals, which were then placed in storage alongside the dies.⁸⁷ Ellicott also carried out the engraving of the recipient's name, at least in 1751-2, work later done by Mr Mynde, the Society's engraver. Maintaining a prize medal system requires work and activity beyond the creation of the scheme and the annual selection.

The establishment and continuance of the annual custom, which was at times interrupted by illness of the president or distraction of other work, led to other consequences. The sense of significance seems to have been increased by the physical reality of the medal: Middleton, the first to receive it in the year of award, appears to have been the first to raise the interest of the press.⁸⁸ The medal became part of Anniversary Meeting ritual and this always included a statement or address by the President regarding the individual and their work. Folkes's addresses were recorded in the Journal Book, two of Macclesfield's also survive in the archives, and their importance was sufficient under Pringle for his to be published.⁸⁹ The *Gentleman's Magazine* suggested that Macclesfield's speech on the occasion of awarding Benjamin Franklin, "greatly enhances the value of the prize".⁹⁰ The prize created connections between Society and winners that would increase awareness of, and potentially do honour to, all. Thus, Middleton used his award as a guarantee of his good faith and the value of his work when he responded to accusations of withholding information. Yet this was at a period when the Society was anxious not to be seen to be endorsing instrument makers' work or even

⁸⁷ E.g. CMO/4/2 (1 Jul. 1748) and CMO/4/9 (1 Nov. 1749); CMO/4/117 (17 Nov. 1760) and CMO/4/133 (17 Dec. 1761).

⁸⁸ The same brief report appears in several publications in December 1742, including the *London Evening Post*, *Daily Advertiser*, *Stamford Mercury* and *The London Magazine*.

⁸⁹ Bektas and Crosland, "The Copley Medal", pp. 50-1; Royal Society, Macclesfield, Draft addresses, MM/4/16, 20; John Pringle, *Six Discourses... on occasion of six annual assignments of Sir G. Copley's Medal* (London: 1783). See Reeves, "Science and the Sea".

⁹⁰ *Gentleman's Magazine*, 1753, 23:587. On ritual and prizes, see English, *The Economy of Prestige*, pp. 4-5.

approving the content of *Philosophical Transactions* and, not surprisingly, there were occasionally concerns about how and to whom the awards were made.⁹¹

After Sloane's death the RS Council members now found themselves responsible for the medal's distribution. They felt that they could not take action without first consulting Copley's will, the openness of which reassured them that they might do as they wished, including honouring a foreigner. It was a decision that paid off, with the *Gentleman's Magazine* commending the Society for looking beyond their "own circle" to "distinguish the most deserving" such as Franklin.⁹² In 1756 the Council again checked their procedures, looking back over the Minutes for 7 December 1736, and repealed the resolution that the medal would be awarded "for the best Experiment produced within the year", giving them more leeway in considering date, and type, of contribution.⁹³ Despite this, in 1762 they found it better, "for the Honour of the Society", to miss an year "than to bestow [the medal] upon a subject, that was inadequate, or less deserving."⁹⁴ After a gap, due more to the President's illness and absence than the quality of recent work, reputational anxiety was again evident when it was decided that the medal should only be awarded if the experiments were confirmed. A committee tested, and in 1765 approved, John Canton's experiments on the compressibility of water, although this did not become a regular approach.⁹⁵ Nevertheless, the significance that the medal accrued over time raised the stakes, meaning that careless bestowal could cause greater damage. From 1766, by which time the Council had accepted collective responsibility for the journal, to the 1830s, nearly all the medals were bestowed for published work. Publication in *Transactions* represented the Society's confirmation of the

⁹¹ Christopher Middleton, *A Vindication of the Conduct of Captain C. Middleton* (London: 1743). See Noah Moxham and Aileen Fyfe, "A Pre-History of 'Peer Review': Refereeing and Editorial Selection at the Royal Society", *Historical Journal*, 2018, 61: 863-89, pp. 869, 873; see also British Library, Birch Royal Society Papers, Add MS 4441, Vol. X.

⁹² CMO/4/44 (15 Nov. 1753); *Gentleman's Magazine*, 1753, 23:587.

⁹³ CMO/4/73 (18 Nov. 1756).

⁹⁴ CMO/4/143 (4 Nov. 1762).

⁹⁵ CMO/5 (28 Nov. 1764), p. 53 and (28 Nov. 1765), pp. 131-2.

significance, if not the truth, of the content, but was increasingly viewed as signalling approval, and the bestowal of a medal for the best among recent papers was a clear sign of esteem.⁹⁶

The medal as material and symbolic object also played its role. The medals were collectors' items, gifts and personal souvenirs that could be further circulated by being depicted in print. Franklin's medal, the first sent overseas rather than presented in person, was illustrated, described and explained as the "Annual Medal of the Royal Society" in the *Gentleman's Magazine* (Fig. 8).⁹⁷ The 1750 winner, George Edwards, honoured for the first three parts of his *Natural History of Uncommon Birds* (1743-50), included an engraving of his medal on the title page of the collected 1751 edition. The *Gentleman's Magazine* suggested this as an exchange (one, financially, considerably to the Society's benefit), with Edwards receiving the medal after presenting his volumes at the Anniversary Meeting.⁹⁸ However, another kind of exchange was generated with the engraving. Its presence on the title page, showing Edwards's gratitude and belief that it acted as a signifier of quality, was also an advertisement for the RS and its medal.⁹⁹ Even when simply within the gift of Sloane (who was, to be sure, a patron of Edwards), with its laurels and "most worthy" inscription, the Copley Medal marked recognition of quality and achievement from the Society represented by its coat of arms.

[Figure 8: "Annual Medal of the Royal Society", *Gentleman's Magazine*, 1753. Courtesy of the Wellcome Library, London.]

Conclusion

⁹⁶ Moxham and Fyfe, "The Pre-History", pp. 871-3.

⁹⁷ *Gentleman's Magazine*, 1751, 21:26.

⁹⁸ *Ibid*, p. 554.

⁹⁹ Edwards's move foreshadows the later use of medals as advertisements on instruments makers' trade cards and catalogues: see Paolo Brenni's contribution to this issue.

Thinking materially and visually about the Copley Medal reveals a number of things usually overlooked. One is the sheer novelty of a prize medal at the date of its foundation. Another is the amount of time, money and effort that were involved in bringing a medal project to fruition. This underscores the commitment to the idea, which should be understood in the context of interest in antiquities and in securing the Society's future reputation, as well as a developing desire to recognise and reward individual merit. While it is unclear whether there was any deliberate policy regarding the type of work that would be rewarded during the medal's early years, beyond connection to or approval by Sloane, it encompassed a range that considerably expanded the use of Copley's legacy, something echoed in the medal's eventual design. Tracing the legacy and its use, from Copley Experiment to Annual Medal, we may follow the Society's shift from a focus on collective witnessing of experimental demonstration toward the reporting and publication of individual investigations, made over time, whether observational, experimental or to develop an invention. The reproducible nature of the Medal – as a series of objects, as circulated engravings and as part of Society ceremony and annual routine – ultimately helped to create a canon of associated people and work to which the Society still makes reference.

An examination of design has revealed the on-going commitment to representations of the Society, featuring its coat of arms, motto and experimental equipment, and the influence of the concurrent antiquarian interests of RS fellows, also associated with the SA and Freemasonry. While it has come to represent the RS, its longevity and the individuals honoured, the Medal was the product of its time and the interests of its founders. While no individual can be definitively linked to the concept behind the design, Folkes's interests were central and it is plausible that Hogarth had at least some influence on his thinking. There has been a tendency for the 18th-century Society to be cast as insufficiently serious or scientific but this account underscores the broader range of concerns and connections to which the historian must pay heed. Just as Michael Hunter's recent exemplary examination of the Sprat frontispiece has demonstrated that the arts and Evelyn's "connoisseurial aspirations" were an

integral part of the RS enterprise, the Copley Medal story shows that antiquarian learning was central to the vision of Folkes and other leading fellows in the mid-18th century.¹⁰⁰ More broadly, this approach encourages us to think about the specific nature of medals – how they were gifted, awarded, represented, valued, recycled, displayed or kept safe – and what practices and principles they demanded or embodied. They were objects that were inspired by gentlemen's collections, signifying antiquarian, scientific and even secret knowledge, and made with the assumption that they were themselves destined to become collectors' items, moving from strong box to display cabinet.

¹⁰⁰ Hunter, *Image of Restoration Science*, p. 144.