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Warming Technologies, Cold Bodies, and Everyday Health in Early Modern England

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SUMMARY: This article investigates the history of Sir Richard Carew's warming stone. Through examination of handwritten notebooks, letters, and printed medical pamphlets, it recovers the theoretical framework shaping the stone's design as a cure, the creation and launch of medical business in early modern London, the use of cheap print in promoting medical services, and the place of cure testimonials in the marketing of early modern health technologies. It also showcases the dynamism inherent in the design, production, and marketing of the early modern health devices. The article extends histories of early modern therapeutics beyond pharmacy to include medical devices and shines light on new historical actors, knowledge practices, and commercial ventures in early modern health care. It also demonstrates the utility of adopting history of technology frameworks to study early modern health objects and posits that further study of everyday health technologies can enrich histories of medicine.

KEYWORDS: medical technologies, natural heat, material culture, everyday medicine, cases and observations, print and manuscript cultures, medical advertising

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In summer 1640, the Cornish gentleman Sir Richard Carew (1579/80–1643) began corresponding with the London bookseller John Bartlet.[1] The two were introduced by Carew's neighbor and kinsman Francis Rous, who, along with Bartlet, moved in the circle of the émigré intelligencer Samuel Hartlib. The topic of their conversation was the warming stone.[2] For some time, Carew had been using a Cornish stone with exceptional heat-retention properties to perform cures in the village of Antony and its surrounding areas. By that summer he had collected enough positive cases and testimonials to put his invention on the London market, and he entrusted Bartlet to market and sell this healthful device. For the next twenty years or so and even after Carew's death in 1643, Bartlet stocked and sold the stone and a printed tract titled *The Warming Stone. Excellent Helps Really Found Out, Tried and Had by a Warming Stone in His Case* from his shop at The Sign of the Gilt Cup in St. Paul's Churchyard.[3] The tract described the manifold uses of the stone, preparation instructions, and, perhaps most crucially, points of sale. After Bartlet's death around 1660, the bookseller

[1] L. A. Holford-Strevens, "Carew, Sir Richard, First Baronet (1579/80–1643?), Medical Experimenter and Educationist," in *Oxford Dictionary of National Biography* (September 23, 2004), https://www.oxforddnb.com/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-4636.

[2] On Rous, see Colin Burrow, "Rous, Francis (1580/81–1659), Religious Writer and Politician," *Oxford Dictionary of National Biography* (September 23, 2004), https://www.oxforddnb.com/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-24171. There is a rich literature on Hartlib and his circle; see, for example, Charles Webster, *The Great Instauration: Science, Medicine and Reform, 1626–1660* (London: Duckworth, 1975); Mark Greengrass, Michael Leslie, and Timothy Raylor, eds., *Samuel Hartlib and Universal Reformation: Studies in Intellectual Communication* (Cambridge: Cambridge University Press, 1994). Recent studies include Carol Pal, "The Early Modern Information Factory: How Samuel Hartlib Turned Correspondence into Knowledge," in *Empires of Knowledge: Scientific Networks in the Early Modern World*, ed. Paula Findlen (London: Routledge, 2018); Leigh T. I. Penman, "Omnium Exposita Rapinæ: The Afterlives of the Papers of Samuel Hartlib," *Book Hist.* 19 (2017): 1–65.

[3] Richard Carew, *The Warming Stone. Excellent Helps Really Found Out, Tried and Had by a Warming Stone* (London, 1640).

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Thomas Rooks acquired the rights to the business and continued to sell the stone with a revised edition of the printed tract in 1670.

Over those thirty-odd years, the warming stone became a familiar health device in London and beyond. For instance, in a 1698 publication, the medical writer William Salmon recommended it as a method to produce a sweat, alongside a glass bottle filled with hot water.[4] The warming stone also came to the attention of Royal Society fellows. For example, naturalists John Ray and Robert Plot referenced the stone in their works, suggesting that its unusual material properties came into the purview of men interested in cultures of observation and experimentation.[5] The fame of the stone also reached other European cities. Correspondents of Hartlib, including John Beale and the Johann Moriaen, wrote of their appreciation of the device, praising it as "cheaper and more elegant than any fire."[6] And Hartlib's accounts also demonstrate that he procured the stone for other members of his

[4] William Salmon, *Ars Chiurgica a Compendium of the Theory and Practice of Chirurgery in Seven Books* (London, 1698), 431 (apply to the soles of the feet for the "French-Pox"), 553 (used alongside hot water bottles to produce sweat to ease gangrene), 1105 (apply to the soles of the feet for a gangrenated ulcer), and 1306 (apply to soles of the feet for a dislocation with a convulsion).
[5] John Ray, *The Wisdom of God Manifested in the Works of the Creation* (London, 1691), 69, and Robert Plot, *The Natural History of Oxford-shire*, *Being an Essay towards the Natural History of England* (Oxford, 1677), 253. Plat was the first professor of chymistry at Oxford and held a keen interest in materials and chymical experimentation. See, for example, Anna Marie Roos, "The Chymistry of 'The Learned Dr Plot' (1640–96)," *Osiris* 29 (2014): 81–95.
[6] Quotation from a letter from Beale to Hartlib, dated January 10, 1656/7, Greengrass, M., Leslie, M., and Hannon, M. (2013), Hartlib Papers, published by the Digital Humanities Institute, University of Sheffield (available at https://www.dhi.ac.uk/hartlib) (hereafter Hartlib Papers), 31/1/9A-12B (12B). All quotations from the Hartlib Papers follow their transcriptions with silent modernizations. Beale also praised the stones in his tract titled "A disquisition concerning pearle-bearing shellfish," dated January 10, 1660, Hartlib Papers 25/17/1A-16B (16A). Morian expressed a wish for additional warming stones in his letter to Hartlib dated January 7, 1641/2 where he says, "Mir were lieb gewest wan der herr ihme 1 paar warming stones mehr mit gegeben hette wolte sie gern bezahlt haben kombt aber ein Schiffer der die feÿl bringt so ist gar nichts versaumet vnd will mich dan woll damit versehen." Hartlib Papers, 37/75A-B (74A).

network, attesting to the widespread interest in the stone—as a material, as a health object, and as a warming device.[7]

With the material turn, health objects have come under increased scrutiny by historians of medicine.[8] Scholars such as Alexandra Bamji have recovered the medical and cultural histories of printed health passes as a form of disease control, and Sasha Handley and others have poignantly illustrated the cultural and affective meanings afforded to sickroom objects such as bedsheets.[9] Building on these studies, this article uses the story of the warming stone to open conversations about the place of technologies in early modern histories of medicine, health, and the body. The case of the warming stone is particularly revealing due to the unusually rich archival materials documenting its story, which offer a behind-the-scenes glimpse into the business of early modern medical technologies.

In a period when historical actors tend to refer to objects such as the warming stone as "inventions," "instruments," or "devices," the choice to adopt the term "technology" is deliberate, designed to signal the analytical borrowing from histories of technology.[10] It joins recent scholarly efforts to bring together histories of medicine with histories of

[7] Hartlib purchased the stone for 8 pence on behalf of Joachim Hübner. "Accounts Relating to Fundandius, Hartlib," February 20, 1639, to May 30, 1641, Hartlib Papers (n. 2), 23 /7A-B.
[8] For an overview on the study of material culture in early modern health practices, see Sandra Cavallo, "Objects," in *A Cultural History of Medicine in the Renaissance*, ed. Elaine Leong and Claudia Stein (London: Bloomsbury, 2021), 111–40.
[9] Alexandra Bamji, "Health Passes, Print and Public Health in Early Modern Europe," *Soc. Hist. Med.* 32 (2019): 441–64; Sasha Handley, "Objects, Emotions and an Early Modern Bed-Sheet," *Hist. Workshop J.* 85 (2018): 169–94; Hannah Newton, "Inside the Sickchamber in Early Modern England: The Experience of Illness through Six Objects," *English Hist. Rev.* 136 (2021): 530–67.
[10] On the history of "technology" as term and concept, see Eric Schatzberg, *Technology: Critical History of a Concept* (Chicago: University of Chicago Press, 2018). For a critique of Schatzberg, see Francesca Bray and Barbara Hahn, "'The Goddess Technology Is a Polyglot': A Critical Review of Eric Schatzberg, Technology: Critical History of a Concept," *Hist. Technol.* 38, no. 4 (2022): 275–316.

technologies.[11] Methodologically, it draws upon revisionist studies calling for a reexamination of what might fall under the umbrella of "technology" at different periods in history.[12] Two recent articulations particularly come into play. First, my focus on warming stone takes inspiration from David Arnold and Projit Mukharji's call for scholars to examine small technologies—that is, machines or consumer goods that were commonplace and designed for quotidian use.[13] Relatedly, it also answers David Edgerton's invitation to switch our focus away from innovation, machines, and feats of invention and to examine "technologies in-use" or "use-centered history."[14] For early modern medicine and health care, this analytical frame opens up a world of everyday technologies related to health maintenance and the care of the body. Second, I take inspiration from Francesca Bray's notion of technology as "social-material networks or systems, including sets of techniques and

[11] Other historians have also chosen to embrace the term "technology" for premodern histories, for similar reasons. See Christelle Rabier, "Introduction: The Crafting of Medicine in the Early Industrial Age," *Technol. Cult.* 54, no. 3 (2013): 437–59; Liliane Hilaire-Pérez and Christelle Rabier, "Self-Machinery? Steel Trusses and the Management of Ruptures in Eighteenth-Century Europe," *Technol. Cult.* 54, no. 3 (2013): 460–502; Heidi Hausse, "The Locksmith, the Surgeon, and the Mechanical Hand: Communicating Technical Knowledge in Early Modern Europe," *Technol. Cult.* 60, no. 1 (March 21, 2019): 34–64. On further eighteenth-century examples, see essays in Christelle Rabier, "Fitting for Health," special issue of *Technol. Cult.* 54, no. 3 (2013), and Alun Withey, *Technology, Self-Fashioning and Politeness in Eighteenth-Century Britain: Refined Bodies* (London: Palgrave Macmillan, 2015).

[12] See David Edgerton, "Innovation, Technology, or History: What Is the Historiography of Technology About?," *Technol. Cult.* 51 (2010): 680–97; Pamela O. Long, "The Craft of Premodern European History of Technology: Past and Future Practice," *Technol. Cult.* 51 (2010): 698–714; Carroll W. Pursell, "Technologies as Cultural Practice and Production," *Technol. Cult.* 51 (2010): 715–22.

[13] David Arnold, *Everyday Technology: Machines and the Making of India's Modernity* (Chicago: University of Chicago Press, 2015); Projit Bihari Mukharji, *Doctoring Traditions: Ayurveda, Small Technologies, and Braided Sciences* (Chicago: University of Chicago Press, 2016).

[14] David Edgerton, *The Shock of The Old: Technology and Global History since 1900* (London: Profile Books, 2006).

equipment, but also trained personnel, raw materials, ideas and institutions."[15] As will become clear, local and national social networks and relational dynamics between producers, users, objects, and knowledge and practice were key to the production, trials, and sale of the warming stone.

I begin by introducing the three different archival sources describing the creation, production, and sales of the warming stone. Digging into the history of the Carew family, I argue that the survival of this archive was a consequence of Carew's locality and social networks. The second section, based on Carew's medical reflections, contextualizes his discussion of natural heat and cold bodies within contemporary medical theories and offers the theoretical background to the development and use of the warming stone. Tracing the story from Cornwall to London, I then examine how Carew and Bartlet worked together to promote the stone and how they adapted and tweaked the device to ensure the widest possible audience and number of users. The final section explores the place of cure testimonials in the establishment of Carew and Bartlet's business and in the marking of the device. Taken as a whole, this study illustrates the key role played by everyday health technologies in early modern health practices. It both broadens the scope of what we might study under the umbrella of interventional therapeutics beyond the traditional focus on pharmacy and extends our conception of early modern medical technologies beyond recognizable medical instruments.[16] Moreover, the detailed story of the development and marketing of the

[15] Francesca Bray, "Science, Technique, Technology: Passages between Matter and Knowledge in Imperial Chinese Agriculture," *Brit. J. Hist. Sci.* 41 (2008): 319–44, quotation on 320.

[16] See Alisha Rankin, *Panaceia's Daughters: Noblewomen as Healers in Early Modern Germany* (Chicago: University of Chicago Press, 2013); Samir Boumediene, *La colonisation du savoir* (Vaulx-en-Velin: Des mondes à faire, 2016); Matthew James Crawford, *The Andean Wonder Drug: Cinchona Bark and Imperial Science in the Spanish Atlantic, 1630–1800* (Pittsburgh: University of Pittsburgh Press, 2016); Matthew James Crawford and Joseph M. Gabriel, eds., *Drugs on the Page: Pharmacopoeias and Healing Knowledge in the Early Modern Atlantic World* (Pittsburgh: University

technology deepens our understanding of medical economies and widens the cast of historical actors who might have provided health services within early modern European cities and villages.

Tracing Health Technologies in the Archives

Printed tracts advertising drugs, medical wares, or services were commonplace in early modern London and particularly proliferated in the second half of the seventeenth century.[17] Surviving examples come in a wide variety of forms, from single broadsheets to hefty pamphlets, and advertised a wide range of health-related goods including wonder drugs, proprietary medicines and health technologies such as antimonial cups, and anodyne necklaces.[18] Past studies have used these advertisements to demonstrate the dynamism of health services, the increase of medical consumerism, the push for iatrochemistry, and the close connections between "pills and print."[19] While the printed tracts offer us a glimpse of a rich array of material objects designed for health, for the most part they tell the story from the

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of Pittsburgh Press, 2019); Paula De Vos, *Compound Remedies: Galenic Pharmacy in Colonial Mexico* (Pittsburgh: University of Pittsburgh Press, 2020).

[17] See, for example, Roy Porter, *Health for Sale: Quackery in England, 1660–1850* (Manchester: University of Manchester Press, 1989); Elizabeth Lane Furdell, *Publishing and Medicine in Early Modern England* (Rochester, N.Y.: University of Rochester Press, 2002); Kevin P. Siena, "The 'Foul Disease' and Privacy: The Effects of Venereal Disease and Patient Demand on the Medical Marketplace in Early Modern London," *Bull. Hist. Med.* 75 (2001): 199–224.

[18] Scholars of early advertising have pointed out that books and medicine were particularly well featured in newspaper advertising of the period: R. B. Walker, "Advertising in London Newspapers, 1650–1750," *Bus. Hist.* 15 (1973): 112–30; Jon Stobart, "Selling (Through) Politeness," *Cult. Soc. Hist.* 5 (2008): 309–28. On the anodyne necklace, see Francis Doherty, "The Anodyne Necklace: A Quack Remedy and Its Promotion," *Med. Hist.* 34 (1990): 268–93. On the antimonial cup, see John Evans, *The Universall Medicine: or Then Virtues of My Magneticall or Antimoniall Cup* (London, 1642).

[19] Peter Isaac, "Pills and Print," in *Medicine, Mortality and the Book Trade*, ed. Robin Myers and Michael Harris (Kent: Folkstone, 1998), 25–47.

point of view of the sellers and promoters. Surviving medical printed tracts are rarely accompanied by additional archival materials, and it is often challenging to recover the intentions or design decisions of the authors/creators or the lived experiences of users. Among the flurry of health devices advertised in print, the warming stone stands out, as an unusually rich set of related archival documents have survived. Three different kinds of sources substantiate its story: a public view via the series of printed medical advertisements issued between 1640 and 1670, a semipublic view via copies of Carew's letters to Bartlet and Hartlib, and finally a semiprivate view via Carew's own medical reflections surviving in scribal copy at Antony House in Cornwall. This mix of private and public documents offers an opportunity to trace and reconstruct changing design ideas and production processes and contextualize them within a larger set of knowledge practices.

Printed information about the warming stone survives in a complicated trail of medical pamphlets. John Bartlet registered the publication of the first tract in the Stationers' Register on September 3, 1640, under the title "The warming stone, a new Invention found out to void the danger of fire and good for many things & [c] . . . vj^{d}."[20] Later that year, this work was printed by an "R. H." and published as *The Warming Stone. Excellent Helps Really Found Out, Tried and Had by a Warming Stone in His Case* and sold at Bartlet's shop at The Sign of the Gilt Cup in St. Paul's Churchyard.[21] Carew is not named on this first edition of the work. The English Short-Title Catalogue (ESTC) lists three further editions of the work, printed in 1652 and 1660, and an undated tract.[22] Furthermore, another single-sheet

[20] Edward Arber, ed., *A Transcript of the Registers of the Company of Stationers of London, 1554–1640* (London: Privately printed, 1875–77), 4:493.
[21] The ESTC lists the printer R. H. as Richard Hodgkinson. ESTC S119482 and STC 4615.5.
[22] These are Richard Carew, *Excellent Helps Really Found Out, Tried and Had (Whereof the Parties Hereafter Mentioned Are True and Sufficient Witnesses), by a Warming Stone* (London, 1652) (ESTC R207350/Wing C588) and a third edition with two different title pages, one with the same title but

publication under the same title was published in 1648 and survives as part of the Hartlib Papers. This work presents only the summary headings offered in the margins of the earlier pamphlets.[23] Finally, as noted earlier, in 1670 the bookseller Thomas Rooks issued another pamphlet about the stone titled *The Warming-Stone, First Found Out by Sir Richard Carew, Baronet Who was himself cured of several distempers by it; and by the use thereof Cured many thousands in the west . . . Formerly sold by John Bartlet bookseller: and now onely to be had at the Shop of Thomas Rooks Stationer*.[24] This final tract is a shortened and reorganized version of the same information as previous publications. It includes a first section offering a brief history of the stone and its general virtues, and a second section presenting a selection of user testimonials reprinted from earlier tracts. Rooks appears to have taken a broader approach than Bartlet in his medical business, selling the warming stone alongside other wonder drugs and self-help guides. His tract pairs information about the stone with promotional materials for other proprietary medicines, including Theophilus Buckworth's lozenges, Turner's Dentifrices, a "Noble Pill" that could be used to cure many ills, and a balsamic oil, or liquor for hair. These were all available for purchase at Rooks's shop in Gresham College next to the stairs of the entrance near Bishopsgate Street, along with a wide range of books including *Dr Chamberlains Midwifes Practice* and *Compleat Bonesetter Enlarged*.[25]

printed in 1660 by J. Brudenell for John Bartlet (Wing C599A/ESTC R231156) and the other without the printed named (Wing C 559/ESTC R224020).

[23] This printed bill is not listed in the ESTC; Hartlib Papers (n. 2), 8/21A-B.

[24] This was printed in London, ESTC R22793 and Wing C560.

[25] *The Warming-Stone, First Found Out by Sir Richard Carew* (London, 1670), 11, 12, 14, 15 and 16. The two medical books are Peter Chamberlen, *Dr Chamberlain's Midwifes Practice* (London, 1665) and Thomas Moulton, *The Compleat Bone-Setter Enlarged* (London, 1665). Rooks's stock covered a number of topics from "Sir Walter Rawleigh's History of the World" to "Cornelius Agrippa's fourth book of Occult Philosophy" to "Drexlius Consideration of Eternity" to sermons, copy books, and math and French textbooks.

Together, the tracts issued by Bartlet and Rooks present the public-facing story of the warming stone as a health technology. Ephemeral prints such as medical advertisements have very low survival rates, and so the fact that numerous tracts and single bills are still extant suggests that these printed objects circulated in considerable numbers at the time.[26] It is likely that these surviving pamphlets, presenting similar information under different titles and taking various material forms, were only a small part of a larger set of promotional print which that Carew, Bartlet, and Rooks issued in connection with the stone. As detailed in the section below, the survival of this series of advertisements across time enables us to track changes in marketing strategy as the technology settled into the daily lives of early modern Londoners.

Information about the stone also survives in the complex paper archive of Samuel Hartlib (ca. 1600–1662).[27] Aside from the references by Beale and Moriaen outlined in the introduction, there are also an entry on the warming stone in Hartlib's *Ephemerides* from 1640, a longer note about the warming stones written in 1660, and copied extracts of letters. When added together, the various entries demonstrate that Hartlib's interest in the stone spanned over two decades and offer a semipublic behind-the-scenes exploration of how Carew and Bartlet brought the stone to London and the initial reception of the technology. The entry in the *Ephemerides* is dated to 1640 and is mainly a copy of the printed tract title. Notably, it is filed under "Invention," "Libri Anglici," and "Medica" and notes that the stone was sold for four shillings by Bartlet.[28] The longer note from 1660 records detailed

[26] On ephemera and survival rates, see Michael Twyman, "Printed Ephemera," in *The Cambridge History of the Book in Britain: Volume 5: 1695–1830*, ed. Michael F. Suarez and Michael L. Turner (Cambridge: Cambridge University Press, 2009), 66–82, 66–68.
[27] For a recent history of the Hartlib Papers, Penman, "Omnium Exposita Rapinæ" (n. 2)
[28] Hartlib Papers (n. 2), 30/4/61A-68B (65A).

instructions on how to use the stones and praises them as "so eminently usefull and comfortable for the colds of aged and sick people, and for women with childe and in childebed, and for such as have their hearing and seeing decayed; for toothage and cold fitts of agues; also for fluxes, Collicks and Ruptures." Twenty years after its debut, the stone was still being sold by John Bartlet the elder, who by that point had established a second shop at the Gilt Cup in Westminster Hall. Alongside the stone, Bartlet also sold the "best ink for deeds and records, that will never change colour."[29]

In addition to his own notes about the stone, Hartlib also had full and partial copies of letters concerning the stone. These letters offer a rare insight into the creation and growth of a medical business and consist of two complete letters from Carew to Bartlet, dating to mid-October and early November 1640, and two letter extracts where the original addressee is unknown. One, from December 1640, includes the phrase "Tell Mr Bartlet," suggesting that Carew directed it to another, unknown recipient. The other, dated to December 11, 1640, was likely written in response to questions about the use and maintenance of the warming stone.[30] The two letters addressed to Bartlet suggest that Carew and Bartlet shared a close partnership in the production, sale, and marketing of the stones. Carew openly expressed his appreciation for Bartlet's opinion, writing in his first letter to the bookseller dated October 16, 1640, " [I]f yow find anything therein to bee amended upon better reason, yow shall not find me

[29] "Note on Warming Stones," Hartlib Papers (n. 2), 26/88A-B.

[30] These are Copy of Letter from Sir Richard Carew to John Bartlet, dated October 16, 1640, and November 2, 1640: Hartlib Papers (n. 2), 71/17/1A-B, 2A and 3A-B, 4A-B. The two copied letter extracts are Hartlib Papers (n. 2), 71/17/5A (Ex literis Domini Carew, "dec. 1640") and 71/17/6A-B and 7A ("Out of Mr Carew's Letter dated the 11. Of Decemb. 1640"). The archive also contains a copy of underlined sections from the letters dated October 16 and November 2: 71/17/8A ("Extracts of Mr Carewes Letters"). It is not clear why or how these letters came into Hartlib's orbit or were copied and preserved within his papers.

unwilling to have it reformed."[31] Their correspondence suggests that the two men eagerly worked together to improve the design and use of the stone as well as to integrate the new instances of successful cures.

The third and final archival source available to understand Carew's technology is copies of his spiritual and medical reflections, surviving in a set of notebooks still housed at his family seat of Antony House in Cornwall.[32] Of the two texts, the spiritual reflections present a more complex document, as three versions have survived, each slightly revised and written in a different hand.[33] These cover a wide range of topics, among which are observations and reflections on the natural habits and life cycle of bees, silkworms, and fig trees, illustrating Carew's interests in the natural world and his meticulous documentation of quotidian observations. Aside from recording his observations in his own notebooks, Carew also shared his thoughts and ideas about the natural world with a wider community of knowers, particularly within the Hartlib circle. For example, among the many manuscripts he offered to Bartlet for printing is one offering instructions "to make fruite trees grow in abundance" without grafting and to "multiply" all sorts of timber trees and make them "grow more speedily then the ordinary way," thereby making an "abundant increase of fueel."[34] And in *The Reformed Commonwealth of Bees*, Hartlib described him as "that great husbandman of

[31] Hartlib Papers (n. 2), 71/17/1B.
[32] These are Antony House and Estate, Antony, Cornwall: CZ/EE/32A (medical reflections) and CZ/EE/32, CZ/EE/32 A-E and CZ/H.3/32./VI (various copies/versions of the spiritual reflections). I extend my gratitude to Tremayne Carew Pole for access to these documents. These documents form the basis of Frank Ernest Halliday's *A Cornish Chronicle. The Carews of Antony from the Armada to Civil War* (Newton Abbot: David and Charles, 1967) and are described in the preface, 11–12.
[33] For other examples of early modern diarists revising and rewriting their life reflections, see Raymond Anselment, ed., *The Remembrances of Elizabeth Freke, 1671–1714* (Cambridge: Cambridge University Press, 2001); Margaret J. M. Ezell, "Elizabeth Isham's Books of Remembrance and Forgetting," *Mod. Philology* 109 (2011): 71–84.
[34] Hartlib Papers (n. 2), 71/17/5A.

Cornwal M Carew of Antony" and recounted his experiment on the generation of bees.[35] The discovery of a local stone with exceptional heat-retention properties and its subsequent trials were likely conducted within Carew's home-based explorations of natural knowledge.

Carew's medical reflections survive in a single scribal copy and were written for a "Mrs Buller," likely a member of the prominent Cornish family based at Morval, another gentry estate around ten miles from Antony. The notebook contains half a dozen recipes and a lengthy account of Carew's own health experiences and medical ideas. It is here that he articulates his theories about natural heat and cold bodies and his aversion to drugs prescribed by physicians. Due to Carew's candid reflections on his own bodily ills and his own readings about how to adjust and alleviate these ailments, the medical reflections offer clear insight into the theoretical framework within which Carew explored warming cures.

Locality and social networks played an influential role in the survival of these documents. Carew's social status as a landed gentlemen responsible for a substantial estate led to well-managed financial and family records, which in turn increased the survival rates of his own personal writings. Carew's hesitance to travel to London necessitated employing an agent to run the business, creating written records about stone. Carew was introduced to Bartlet (and likely Hartlib) by Francis Rous, whose family estate at Halton was less than fifteen miles away from Antony.[36] Rous and Bartlet both surface multiple times within the Hartlib archive and likely moved in the same circles in London. Rous corresponded with Hartlib on various matters, including sharing Carew's manuscripts in 1648.[37] Bartlet and Hartlib appear to have had a friendly relationship on publishing matters, and the references

[35] Samuel Hartlib, *The Reformed Common-wealth of Bees* (London, 1655), sig. A2r.
[36] Carew writes, "I assure my selfe yow haue bin informed of my condition, by my Brother Rous." Hartlib Papers (n. 2), 71/17/1A.
[37] Hartlib Papers (n. 2), 7/6/1A-3A.

suggest that they discussed potential book projects.[38] Archival survival is always precarious, and indeed the survival of the Hartlib Papers itself has a long and complex history.[39] However, in this case, local circumstances and social contacts worked to shape the *fortuna* of these ephemeral papers.

Aside from shaping the historical archive, Carew's familial background and local and social networks also shaped the conception of the stone as a health technology. Carew came from a family of curious minds and keen naturalists who eagerly observed and wrote about their surroundings. Carew's father, also named Richard, was the author of *The Survey of Cornwall* (1602), a work that records in detail the environment, minerals and stones, flora and fauna, and birds, animals, and insects local to Cornwall as well as information about Cornish language, customs, and history.[40] As expected, reflecting the importance and size of the Cornish tin industry, a lengthy section is devoted to quarries, mining, and ore extraction, especially tin mining.[41] Decades before his son's interests in local quarries and stones, Richard the elder carefully noted all the different stones from slate to lime, their colors, and their properties.[42] However, amid all these details, there is no mention of a heat-retaining stone, suggesting that it was found by Richard the younger sometime after the publication of the *Survey.* The Carew family interest in Cornwall, mining, and their natural surroundings undoubtedly influenced Richard the younger's investigations and experimentations with the stone and its materiality. Additionally, as discussed in the final section, Carew tested the

[38] Hartlib Papers (n. 2), 71/17/5A and 7/6/3A.
[39] Penman, "Omnium Exposita Rapinæ" (n. 2).
[40] S. Mendyk, "Carew, Richard (1555–1620), Antiquary and Poet," *Oxford Dictionary of National Biography*, September 23, 2004, https://www.oxforddnb.com/view/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-4635.
[41] Richard Carew, *The Survey of Cornwall* (London, 1602), fols. 6r–18v.
[42] Ibid., fol. 6r–v.

stone within the local community of neighbors and tenants on and around the estate of Antony; as such, the initial cures performed by the stone were shaped by the ailments and everyday health experiences of this small coastal community.

Natural Heat, Coldness, and Medicines for Warming the Body

Across the archival sources, the warming stone emerges as an everyday health technology with multiple uses, all related to notions of natural or artificial warmth. For example, Carew argued that the stone was very beneficial for "aged persons and many others" who by "the decay of natural heat . . . sicknesse, ill accidents and their continuall sitting, makes them to need the helps of Artificall warmth."[43] Carew himself had found much success with it whenever he suffered from cold-related or cold-induced ailments, such as the time when his foot and leg had grown full of black and white spots due to "hurt" and possibly gangrene, and was "so mortified with cold that [he] could not give it no heate from [his] body." In this instance, the warming stone, with God's blessing, provided the heat required and aided him to recovery. Based on the experiences of his wife and dependents, Carew also reported that the stone was effective in easing the experience of childbirth, in alleviating cases of back pain, and in relieving symptoms of rupture, fluxes, agues, and more.[44] In all these cases, the stone functioned much like "artificial liquours that have extraordinary heat" and corrected the "cold weakness by the nature of their strength." In addition to these medicinal uses, Carew also projected that the stone could function as a portable and cheap heating device. He contended that it would be particularly convenient for those sitting for long periods, such as

[43] Carew, *Warming Stone* (n. 3), 1.
[44] Ibid., 2–3 (childbirth), 3 (back pain), 4 (ruptures, etc.).

scholars in their studies or worshippers in church, or for the poorer sorts without recourse to other sources of heat.[45]

The ideal of innate or natural heat and its importance in health and body maintenance is a long-standing one, originating in the writings of Aristotle, Hippocrates, and Galen. Within this framework, innate heat played a key role in generation, digestion, and growth. Each being begins with a store of innate heat that decreases as they age and is extinguished upon death. Galen considered innate heat to be airy, watery, and moist and to originate and reside in the heart. Galenic and later writings posit that this natural heat could be affected by management of the nonnaturals such as emotions, exercise, and food and drink.[46] While these ideas are not overtly articulated in the public-facing printed tracts, Carew discusses them in more depth in his handwritten medical reflections, where concepts of natural and unnatural heat and the perilous effects of coldness in the body form a central thread.

Penned in 1637, this lengthy account describes past bouts of ill health experienced or observed by Carew and the various remedies used to alleviate the symptoms. The reflections open with a detailed recollection of Carew's fall on April 3, 1637, and how what he initially thought was "only a small strain" developed into painful and swollen toe and foot, which, though not broken, kept him to his bed. Confined in the sickroom, Carew decided to dedicate his "precious time in idleness" to reflection, aiming to "imploy my mind in thanksgiving to God, for the manifold blessings he hath given me in the course of my life, for the recovery of such hurts, and sicknesses as it hath pleased him to visit me withall, and to acknowledge the errors I have comitted in the beginning of my life, which I have found in continuance of tyme

[45] Ibid., 6.
[46] Richard J. Durling, "The Innate Heat in Galen," *Medizinhistorisches J.* 23 (1988): 210–12. See also Elisabeth Moreau, "Innate Heat," in *Encyclopedia of Renaissance Philosophy*, ed. Marco Sgarbi (Cham: Springer, 2015), 1–3.

with much abatement of my naturall strength".[47] As others have noted, it was common for early modern men and women across the confessional divide to see strong connections between their bodily and spiritual health, and, like many of his contemporaries, Carew used his life writing to account for and contemplate various aspects of life, from his sickness experiences to his spiritual engagement.[48]

Spanning over twenty-seven folios, Carew's reflections are loosely organized by remedy, beginning with dietary advice followed by uses of herbal remedies, the warming stone, and "pretious waters." While the text is framed by two recipes—one to make the oil of elder blossom and another to make a "marveiloues pretious water"—the main body of the text is filled with Carew's observations and records of his own, his family's, and his dependents' sickness experiences.[49] The text offers detailed accounts, for instance, of his fall on that fateful spring day in 1637 and of the accident suffered by one of his quarrymen when a piece of stone flew into his eye. Other examples include the time when a "somewhat corpulent" gentlewoman bruised her kneecap on the rocks and was treated with a handful of

[47] Antony House and Estate, CZ/EE/32A, 3v.

[48] On life writing, see Owen C. Watkins, *The Puritan Experience: Studies in Spiritual Autobiography* (London, 1972); Adam Smyth, *Autobiography in Early Modern England* (Cambridge: Cambridge University Press, 2010).On the connections between faith and medical and spiritual life writing in early modern England, see Linda A. Pollock and Lady Grace Mildmay, *With Faith and Physic: The Life of a Tudor Gentlewoman, Lady Grace Mildmay, 1552–1620* (New York: St. Martin's, 1995); Olivia Weisser, *Ill Composed: Sickness, Gender and Belief in Early Modern England* (New Haven, Conn.: Yale University Press, 2015). Recent works on medicine and religion across the confessional divide include Sophie Mann, "'A Double Care': Prayer as Therapy in Early Modern England," *Soc. Hist. Med.* 33 (2020): 1055–76; Maria Pia Donato, "Medicine and Religion at the Early Modern Deathbed: How Can We Reframe the Narrative?," *Eur. J. Hist. Med. Health* 79 (2022): 121–51.

[49] Antony House and Estate, CZ/EE/32A, the two recipes are written on the inside front cover and fol. 27v. On contemporary household recipe collections, see Elaine Leong, *Recipes and Everyday Knowledge: Medicine, Science and the Household in Early Modern England* (Chicago: University of Chicago Press, 2018); Michelle DiMeo and Sara Pennell, eds., *Reading and Writing Recipe Books, 1550–1800* (Manchester: University of Manchester Press, 2013).

elder leaves.[50] While different kinds of remedies, be they diet, herbs, or devices such as warming stones, are featured in all these stories, the focus here is on the medical case itself rather than instructions to produce or take particular medicaments. In that sense, Carew's medical notebook appears to be more aligned with reflective and observational literature such as spiritual autobiographies and case writings than household recipe books.[51] Concurrently, the detailed nature of these cases also gives hint to the theoretical ideas underpinning Carew's use of the stone as a cure. As discussed below, they became central to Carew and Bartlet's medical business and feature in the instructional and marketing literature accompanying the sale of the warming stone.

Within Carew's medical writings, the main explanatory framework used to understand bodily changes and response to remedies rested on traditional ideas of the humoral body and notions of natural and unnatural heat and the tempering of cold humors. As with many spiritual reflections, Carew searched far back into his life to locate illustrative examples and began recounting his conversations with Sir Henry Neville while he was under Neville's employ as a young man. Once, while in Orleans, Neville observed red pimples on Carew's neck and suggested that Carew's drink of choice might be the cause of his affliction. Carew's drink consisted of "very much water and little wine," and Neville thought that the coldness of the water had led to Carew's inflammation.[52] These conversations and subsequent

[50] Antony House and Estate, CZ/EE/32A, 3v (Carew's fall in April 1637), 13r (quarryman's eye accident), and 13v (corpulent gentlewoman and her bruised knee).
[51] Watkins, *Puritan Experience* (n. 48); Gianna Pomata, "Observation Rising: Birth of an Epistemic Genre, 1500–1650," in *Histories of Scientific Observation*, ed. Lorraine Daston and Elizabeth Lunbeck (Chicago: University of Chicago Press, 2011), 55–88; Lauren Kassell, "Casebooks in Early Modern England: Medicine, Astrology, and Written Records," *Bull. Hist. Med.* 88, no. 4 (2014): 595–625.
[52] Antony House and Estate, CZ/EE/32A. On Carew's diplomatic career, see "Carew, Richard (c.1580–1643), of Antony, Cornwall," in *The History of Parliament: The House of Commons 1604–*

experiments with food and drink (such as cold milk) on his own body led Carew to revise past assumptions about his own health. Whereas he had attributed his "outward inflammations" to too much heat in the stomach, he now considered that these ailments were triggered by a coldness in his stomach that caused his liver to break out with a "violent and unnaturall heate."[53] These reflections inspired him to adopt a "temperate" diet carefully calibrated to maintain and balance the natural heat of his stomach and liver.[54]

Elsewhere in the reflections, Carew attributed various ailments to the imbalance of the body's natural heat. For example, he recalled the case of a neighbor, who, having spent too much time out in the cold, suffered a rupture so serious that his guts were outside his belly and the fat around them had turned "hard and stiffe with the cold." In this case, the patient was cured by the heat from a warming stone and was fit and alive years after the incident.[55] Another observation saw one of his neighbors and kinsmen suffer from a consumption and sent down from Oxford by physicians to breathe the country air. Carew admonished the young man for imbibing cold drinks and cooling foods and advised him to eat "hot and nourishing things, such as warmed beere and wine," after which the man became "perfectly well" in the space of a week.[56]

Given Carew's focus on natural heat and tempering cold humors in the body, it is not surprising that he reached for an external heating device. He considered the stone as a form of therapy, alongside the use of herbs and distilled waters, to redress the balance of hot and cold humors within the body, or as a way of bolstering the body's store of natural heat when it was

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1629, ed. Andrew Thrush and John P. Ferris (Cambridge: Cambridge University Press, 2010), https://www.historyofparliamentonline.org/volume/1604-1629/member/carew-richard-1580-1643.

[53] Antony House and Estate, CZ/EE/32A, 3v.

[54] Antony House and Estate, CZ/EE/32A, 4r–v.

[55] Antony House and Estate, CZ/EE/32A, 16v.

[56] Antony House and Estate, CZ/EE/32A, 22r.

under attack from cold humors. The advantage of the stone, in Carew's mind, was that it offered users control in increasing, decreasing, or removing the amount of heat applied to the body. This flexibility of application was one of the many reasons that Carew was so eager to bring the stone to the wider public.

"The Ordering of the Business"

By mid-1640, when Carew and Bartlet unveiled the warming stone as a health technology to Londoners, a wide range of medical services and products were already on offer, including proprietary medicines such as Daffy's Elixir, antimonial cups, and specialist medical care for venereal diseases.[57] Scholars have noted that the early modern period saw a general increase in consumption in Britain, in particular, of health services and goods.[58] As the historian of medicine Roy Porter termed it, this was the age of "health for sale."[59] Therefore, when Carew decided to send his medical device for sale in the capital, he became participant in a complex set of health economies. The rich archive surrounding the warming stone enables us to tease out the nitty-gritty practices of setting up a business in seventeenth-century London at this particular moment in the development of capitalism.

The letters between Carew and Bartlet shine light on medical collaboration and business partnership, and the crucial role played by print in the conception and promotion of

[57] David Boyd Haycock and Patrick Wallis, "Quackery and Commerce in Seventeenth-Century London: The Proprietary Medicine Business of Anthony Daffy," *Med. Hist. Suppl.* no. 25 (2005): 1–216; Siena, "'Foul Disease'" (n. 17). On the antimonial cup, see Evans, *Universall Medicine* (n. 18).
[58] Patrick Wallis, "Consumption, Retailing, and Medicine in Early-Modern London," *Econ. Hist. Rev.* 16 (2008): 26–53; Patrick Wallis, "Introduction: The Growth of the Early Modern Medical Economy," *J. Soc. Hist.* 49, no. 3 (2016): 477–83; Ian Mortimer, *The Dying and the Doctors: The Medical Revolution in Seventeenth-Century England* (Woodbridge: Royal Historical Society / Boydell Press, 2009).
[59] Porter, *Health for Sale* (n. 17).

this technology. Their correspondence began in mid-October 1640 a mere few weeks after Bartlet had registered the first tract about the stone at the stationers' company. The first letter was likely hand delivered by Carew's servant, who was also instructed to share the "ordering of the business" with Bartlet and provide him with newly identified virtues and uses of the stone. From the letters, it is clear that Carew had ambitious plans for his invention from the start. By the time he contacted Bartlet, he had already prepared more than a thousand stones and cases ready to be sent up from Plymouth to London by the next ship.[60] Moreover, mindful that others could take a share in this business, he also started the process of acquiring a patent of privilege for his invention.[61] Finally, and perhaps the most telling of Carew's ambition, is his suggestion that Bartlet print up ten thousand "Titles" of the warming stone (at Carew's expense) to be posted up on every church door to "advance the busines." These "titles" would list the benefits and uses of the stones along with direction on where the stone would be sold and "space" for Carew to "insert the like direction in other places by writing & how to use them according to the papers already printed."[62]

Carew's instructions for the "titles" followed advertising practices common to the period. As scholars have noted, it was a long-standing practice to paste single-sided advertisements, bills, and other printed matter on church doors, poles, and other prominent places within the city.[63] Additionally, the placement of extra title pages around London to

[60] Hartlib Papers (n. 2), 71/17/1A.
[61] References to his application for the patent can be found in Hartlib Papers, 71/17/1A. The reference to the competitor can be found in Hartlib Papers, 71/17/6B.
[62] Hartlib Papers (n. 2), 71/17/2A-B.
[63] Wendy Scase, "'Strange and Wonderful Bills': Bill-Casting and Political Discourse in Late Medieval England," in *New Medieval Literatures*, ed. Wendy Scase, Rita Copeland, and David Lawton, vol. 2 (Oxford: Clarendon, 1998), 225–47. Tiffany Stern, "'On Each Wall and Corner Poast': Playbills, Title-Pages, and Advertising in Early Modern London," *Engl. Lit. Renaiss.* 36 (2016): 57–89.

advertise printed works was a popular practice among book producers.[64] Yet Carew's instructions reveal the scale of such campaigns and some of the practical details involved. Carew's request to have space on the "title" for additional shop addresses and instructions for use suggests that he envisioned the business to grow significantly. The request also reminds us of the interplay between manuscript and print cultures in the period and that, as Peter Stallybrass has noted, the production of various kinds of "blanks" and forms constituted the bread-and-butter work of many printers.[65]

The letters demonstrate that two aspects of the technology were of particular concern to the two men: materiality and multifunctionality. Both were central concerns in the design and production of the device, particularly when it came to decisions about the size. Carew's warming stone was sourced from a Cornish mine at Polyphant Manor near Launceston. Stone quarries at Polyphant date from around the eleventh century, and the stone, called a Polyphant stone, is a dark gray-green-colored, coarse-grained serpentinite that was often used for decoration in local churches.[66] Crucially, Carew does not disclose the location of the stone quarry or the name of the stone in the printed materials or in his letters with Bartlet. As noted above, Carew was eager to get a patent of privilege for the device, and the whereabouts to obtain the stone was recorded only in his medical reflections circulating among close friends and family.[67]

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[64] Paul J. Voss, "Books for Sale: Advertising and Patronage in Late Elizabethan England," *Sixteenth Cent. J.* 29 (1998): 733–56.

[65] Peter Stallybrass, "'Little Jobs': Broadsides and the Printing Revolution," in *Agent of Change: Print Culture Studies after Elizabeth Eisenstein*, ed. Sabrina Alcorn Baron (Amherst: University of Massachusetts Press, 2007), 315–41.

[66] "Stone in Archaeology—A Digital Resource," accessed July 27, 2023, https://archaeologydataservice.ac.uk/archives/view/stones_ahrb_2005/cfm/Public/details/RockDetails.cfm?RockCode=POLYPH.

[67] Antony House and Estate, CZ/EE/32A, fol. 16v.

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Carew recommended two different sizes for the stones. The advertisements speak of stones sized around nine or ten inches long and six or seven inches wide broad, and his letters speak of smaller stones of around seven or eight inches long and around four inches wide broad. The important consideration here was to balance the weight and maneuverability of the stone while ensuring a large enough size and surface area for heat retention and production. To ensure that all the stones sold were around the same size, Carew gave his workers "Wooden moulds to proportion them" and, in general, selected the thickest stones for the main stock. However, he acknowledged that the "thinner are more useful . . . then they because they are fitter to be moved from place to place."[68]

Once proportioned, the stones were "lined two fingers thick everywhere, with wool between, frise on the outside and canvas on the inside." Carew also offered detailed explanations for his choice of textiles. Canvas was used on the inside as it was "not so apt to burne as woollen cloath; and have the wooll between, because it sorts better with any part of the body than cloath doth, and by reason of the thicknesse thereof brings not an over-violent heate at the beginning, yet continues it much longer than cloath or linnen could doe: and the frise on the outside is softer and warmer than other stuffe."[69] When seasoned and heated very hot —that is, to the point where the stone hisses if one spits or sprinkles water on it— the stones were said to retain heat for ten to fourteen hours, unlike similar devices made of other materials.[70] While the printed tract and the medical reflections do not contain precise heating instructions, Carew's letter dating to December 11, 1640, likely written to Hartlib, advises users to heat the stone in a cooling bread oven. In these more detailed instructions, Carew

[68] Hartlib Papers (n. 2), 71/17/6B.
[69] Carew, *Warming Stone* (n. 3), 5 and Hartlib Papers (n. 2), 71/17/4B.
[70] Carew, *Warming Stone* (n. 3), 1 and 5.

suggested that the more often the stones were heated, the better they would "recover their heate and retaine it for longer." The letter also describes concerns about foul smells associated with the device that, in this letter at least, Carew put down to user error, postulating that it was due to users placing the stone into a case while it was "fire-hot" and thus burning the case, or perhaps they were "negligent" and placed the case where it might be "tainted with some kitchen stuffe."[71]

From the start, the warming stone was promoted as a multipurpose device. The long title of the first 1640 pamphlet emphasizes the cost effectiveness of the stone, lists the various proven cures, and suggests that the stone could serve as an effective source of heat for those who "cannot conveniently make use of Fire" in spaces such as the "Beds, Studies, Shops, ships, Churches."[72] Moreover, it openly states that the stone could serve to help the poor who might be able to heat it at a neighbor's hearth. The same phrases are used across the surviving printed advertisements produced by Bartlet even after Carew's death, suggesting that this mixed marketing strategy was readily adopted by both men.

This desire to create a multipurpose device was at the heart of Carew's invention and framed its design. For example, in deciding the size and cut of the stone, Carew was mindful of its portability, noting that while a thicker or larger stone might hold more heat, it was not practical for personal warming in churches and other settings.[73] This attentiveness to portability is most clearly seen in the discussion about the warming writing tablet. In October 1640, Bartlet proposed that they offer a larger stone that could double as a writing surface while warming the user. Carew's response suggests that he carefully considered Bartlet's

[71] Hartlib Papers (n. 2), 71/17/6A.
[72] Carew, *Warming Stone* (n. 3), title page.
[73] Ibid., 5.

proposal and was taken by Bartlet's suggestion to create a multifunctional device. However, unconvinced by the idea of using a larger stone due to its weight and associated lack of maneuverability, Carew proposed to use smaller, lighter stones, as he thought these could be "carried invisibly into the church or other sedentary place, and inable the hand for writing for the space of an houre or two." To increase heat retention, he experimented with wrapping cloth-encased stones with a hand muff. His trials suggested that the case covering must be made of "some sliding stuffe" so that it "may easily goe into the muffe." Perhaps based on his own experience as a one-term member of Parliament, Carew thought that parliamentary men might have particular use for these stones, as the case might double as a "little boord for them . . . to take notes upon; & to warme either the seate by sitting on it, or their feet by resting thereon."[74] In fact, Carew was so taken by this new design that he proposed to produce and send them to London as soon as he could.

Carew and Bartlet's discussions over the warming stone / writing tablet suggest that both saw continual possibilities to "maintain" its usefulness by modifying or adapting the technology to different situations or to suit the needs of different communities of users.[75] Within these schemes of modifications, close attention was paid to the material properties of the different components, from the weight, portability, and heat-retention properties of the stone to the flammability of different kinds of cloths and the friction between different textiles. Carew's letter suggests that he conducted repeated trials of different-sized stones and

[74] Copy of Letter from Sir Richard Carew to John Bartlet, dated November 2, 1640, Hartlib Papers (n. 2), 71/17/4B.

[75] Here I take inspiration from the research group the "Maintainers": "Maintainers | Maintaining Self and Society through Reflection, Research, and Advocacy," accessed July 20, 2022, https://themaintainers.org; Andrew L. Russell and Lee Vinsel, "After Innovation, Turn to Maintenance," *Technol. Cult.* 59 (2018): 1–25; Stephen Graham and Nigel Thrift, "Out of Order: Understanding Repair and Maintenance," *Theory Cult. Soc.* 24 (2007): 1–25.

various textiles to create a product that he considered suited to both the purpose and use environment and convenience for the user. In sum, functionality, perceived user needs, and materiality all played a crucial part in the creation of this seemingly simple health technology.

The reconstruction of Carew and Bartlet's conversations shines light on historical actors offering health services who have yet to receive full attention from historians. Notably, neither Carew nor Bartlet had formal medical training, nor did they describe themselves as medical practitioners, reminding us of the openness of early modern economies and myriad historical actors who might have contributed to health services in their own way.[76] While recent studies have highlighted the contributions of early modern gentlewomen to health provision, the role played by gentlemen still warrants further exploration.[77] In Carew's case, his medical activities extended beyond caring for his family and tenants to venturing into commercial markets. The booksellers Bartlet and Rooks present another group of historical actors working in urban health services but underexplored by historians. The history of the warming stone was intricately bound with the history of cheap medical print and the emerging genre of medical advertisements. Carew, Bartlet, and Rooks harnessed contemporary print technologies to market their wares. In all these printed forms, Bartlet was listed as the seller for both the printed matters *and* the stone, making him the London-based

[76] On the important role of occupation diversity in early modern medicine, see Margaret Pelling, "Trade of Profession? Medical Practice in Early Modern England," in *The Common Lot: Sickness, Medical Occupations and the Urban Poor in Early Modern England*, ed. Margaret Pelling (London: Longman, 1998), 230–58. On medical economies, see, for example, Mark Jenner and Patrick Wallis, eds., *Medicine and the Market in England and Its Colonies, c.1450–c.1850* (Basingstoke: Palgrave Macmillan, 2007).

[77] See, for example, Anne Stobart, *Household Medicine in Seventeenth-Century England* (London: Bloomsbury, 2016). On gentlemen taking a key role in health matters, see Lisa Smith, "The Relative Duties of a Man: Domestic Medicine in England and France, ca. 1685–1740," *J. Family Hist.* 31 (2006): 237–56.

representative of the technology. Past studies have illustrated how book producers were often involved in the distribution of medical print and drugs.[78] The story of the warming stone demonstrates that booksellers such as Bartlet also made key contributions to the design, sale, and marketing of medical technologies.

"Excellent Helps": Use Instructions and Cure Testimonials

As recent studies have demonstrated, experiential knowledge occupied a central place in early modern medicine.[79] The inclusion of successful cures in the form of practitioner-observed cases or patient testimonials was common across a number of medical genres and was especially prominent in literature touting cure-alls and other medical services.[80] As Alisha Rankin and others have shown, in the case of practitioners selling panaceas and other wonder drugs, the gathering and sharing of patient testimonials were key to promotional vernacular print and licensing applications.[81] Experiential knowledge played a central role in processes of "testing drugs and trying cures" throughout the late medieval and early modern periods.[82] So far, these conversations have largely focused upon medicines and drugs, and the

[78] On the role of book producers in medicine sales, see P. S. Brown, "The Venders of Medicines Advertised in Eighteenth-Century Bath Newspapers," *Med. Hist.* 19 (1975): 352–69; Isaac, "Pills and Print" (n. 19).
[79] For a recent overview in the history of medicine, see Alisha Rankin, "Experience" in Leong and Stein, *Cultural History of Medicine* (n. 8), 141–62.
[80] A rich literature exists for all these fields. See, for example, Pomata, "Observation Rising" (n. 51); Kassell, "Casebooks in Early Modern England" (n. 51); J. Andrew Mendelsohn and Annemarie Kinzelbach, "Common Knowledge: Bodies, Evidence, and Expertise in Early Modern Germany," *Isis* 108 (2017): 259–79; Leong, *Recipes and Everyday Knowledge* (n. 49); Rankin, *Panaceia's Daughters* (n. 16).
[81] Alisha Rankin, *The Poison Trials: Wonder Drugs, Experiment, and the Battle for Authority in Renaissance Science* (Chicago: University of Chicago Press, 2021), particularly chap. 6.
[82] For example, see essays in Elaine Leong and Alisha Rankin, "Testing Drugs and Trying Cures," special issue of *Bull. Hist. Med.* 91 (2017).

case of the warming stone extends this view by offering insight to the changing place of testimonials in the business of early modern health technologies and in the worldview of our historical actors more generally.[83]

As noted above, a range of promotional print has emerged as central to the marketing and sale of the stone. Use instructions and cure testimonials shined brightly in these printed tracts and broadsheets. Described as "Excellent Helps" on the title page of the tract, Carew's and later Bartlet's guidance and advice on the virtues of the stone constitute the bulk of the text. The tract opens with Carew's description of his own experiences using the stone to cure bouts of vomiting, foot injuries, and gangrene and offers case upon case of successful cures collected by Carew and Bartlet. In other words, they offered both personal accounts of how the stone worked on their own bodies and firsthand observations of how it cured ailments and sicknesses in other bodies. Carew viewed these testimonials to hold as much value as the stones themselves, if not more, writing, " [T]he very instruction of the yse of stone is much more worth then the cost of the same, with the stone and Case added vnto it" and indeed told Bartlet that he "wish[ed] that none of the directions at large should passe without a stone together with it."[84] Here Carew and Bartlet followed a popular strategy for the sale and marketing of health-related goods in the period as, across Europe, drug peddlers, particularly itinerant healers, took to wrapping medicines inside printed sheets outlining the instructions for use and cure testimonials.[85]

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[83] Pamela Smith has written cogently about the place of experience, artisanal epistemologies, and material imaginaries in the worldviews of artisans: Smith, *The Body of the Artisan: Art and Experience in the Scientific Revolution* (Chicago: University of Chicago Press, 2004); Smith, *From Lived Experience to the Written Word: Reconstructing Practical Knowledge in the Early Modern World* (Chicago: University of Chicago Press, 2022).
[84] Hartlib Papers (n. 2), 71/17/1B and 71/17/2B.
[85] David Gentilcore, *Medical Charlatanism in Early Modern Italy* (Oxford: Oxford University Press, 2006).

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Crucially, the information contained in these pamphlets was continually updated to reflect the latest set of cures. For example, when Carew mentioned that he had discovered "two especiall uses" of the stones—for the preservation of young children in the cradle and a cure for deafness—these were quickly included in the publication.[86] Once the stones reached Bartlet, it is clear that he was also tempted by its promised cures, as he recorded his own trials with the stone. One of the entries reads, "John Bartlet that sells these stones and prints this paper, affirmes that himself being very lame with the Scatica to extremity, by applying this stone but two houres was cured of his lamenesse, and by following of it two nights afterwards when he went to bed, laying of it to that part of his hippe where his pain had been, hopeth he is perfectly cured."[87] Carew's claim that the "very instruction of the use of stone is much more worth" and his use of the phrase "excellent helps" to describe these testimonials, suggest that they were seen as instructional, serving to demonstrate different kinds of uses to which the stone could be put. They also suggest that both men were continually testing and trying the stone on different kinds of ailments, painting a picture of lively and informal experimentation.[88] After all, Carew wrote, "though there bee many great cures expressed in the Paper, yet there are other more incredible not mentioned."[89]

Carew's focus on cure testimonials might have stemmed from their use in other knowledge spaces. From the start Carew had ambitions to apply for a patent of privilege and was consulting a lawyer about the process in the fall of 1640.[90] Introduced in the mid-

[86] Hartlib Papers (n. 2), 71/17/1A and Carew, *Warming Stone* (n. 3), 6.
[87] Carew, *Excellent Helps* (n. 22), 8.
[88] On testing drugs, see essays in Leong and Rankin, "Testing Drugs and Trying Cures" (n. 82) and Rankin, *Poison Trials* (n. 81).
[89] Hartlib Papers (n. 2), 71/17/3B.
[90] On patents and early modern science and technology, see Mario Biagioli, "From Print to Patents: Living on Instruments in Early Modern Europe," *Hist. Sci.* 44, no. 2 (June 1, 2006): 139–86. On patents, projects and projectors, see Joan Thirsk, *Economic Policy and Projects: The Development of*

sixteenth century, the system of patents and letters of privilege gave the grantee the "sole rights of manufacture of an article, according to the particular methods of which they were the true pioneers and inventor."[91] As such, letters of application needed to demonstrate the novelty of the product, the potential applications and use, and the potential contribution to the common good.[92] Carew's collection of cure and use testimonials from his friends, tenants, and family members might have been partly driven by his desire to obtain a patent. Tellingly, the two letters written in October and November 1640 suggest that as Carew gained familiarity with the patenting process, he also sought to gain further knowledge about the stone to share in subsequent editions of the warming stone pamphlet. The turbulent political events of the fall of 1640 and particularly the political discourse on the issue of monopolies meant that Carew's goals for a patent were never realized.[93] But perhaps due to this legal context, the second batch of cases offered by Carew were more detailed and specifically located. Whereas he spoke merely of unnamed children and deaf sufferers in his first letter to Bartlet, in this second letter he offered detailed case histories with names and locations. For example, he recounted how the stone cured a maid of toothache and deafness in the house of Mr. Kneebone (an "ancient servant" to Sir Antony Rous) in Linkinhorne, Cornwall, and how it helped cure Carew's own daughter of an "extreame swelling," offering her ease when she was "greevously tormented in her head."[94]

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a Consumer Society in Early Modern England (Oxford: Clarendon, 1978); Christine MacLeod, *Inventing the Industrial Revolution: The English Patent System, 1660–1800* (Cambridge: Cambridge University Press, 1988), esp. chap. 1 for the time period addressed; Koji Yamamoto, *Taming Capitalism Before Its Triumph* (Oxford: Oxford University Press, 2018); Vera Keller, *The Interlopers: Early Stuart Projects and the Undisciplining of Knowledge* (Baltimore: Johns Hopkins University Press, 2023).

[91] Thirsk, *Economic Policy and Projects* (n. 90), p. 53.

[92] Keller, *Interlopers* (n. 90), p. 48.

[93] Yamamoto, *Taming Capitalism* (n. 90), chap. 1.

[94] Hartlib Papers (n. 2), 71/17/4A.

While neither of these instances is listed in the first 1640 pamphlet, both can be seen in subsequent surviving publications such as the 1648 bill and the later pamphlets, suggesting that Bartlet shared Carew's desire to include more specificity in the cure testimonials. In fact, while the first 1640 edition of *Excellent Helps* offers only vague descriptions of cures, later editions all list the identities of the sick and the specific locations where the cure was performed, including several instances in London. For example, the 1652 pamphlet, published after the death of Carew, details how a "Mistress Susanna Durdan in London" was cured of a toothache by applying the stone to her cheek and how Lawrence Jemmet, son of the Reading-based preacher William Jemmet and a servant to a London leather seller named master Blackberry, regained his voice and was cured of a cough by use of the warming stone on his throat and stomach over six weeks.[95]

[95] Carew, *Excellent Helps* (n. 22), 8.

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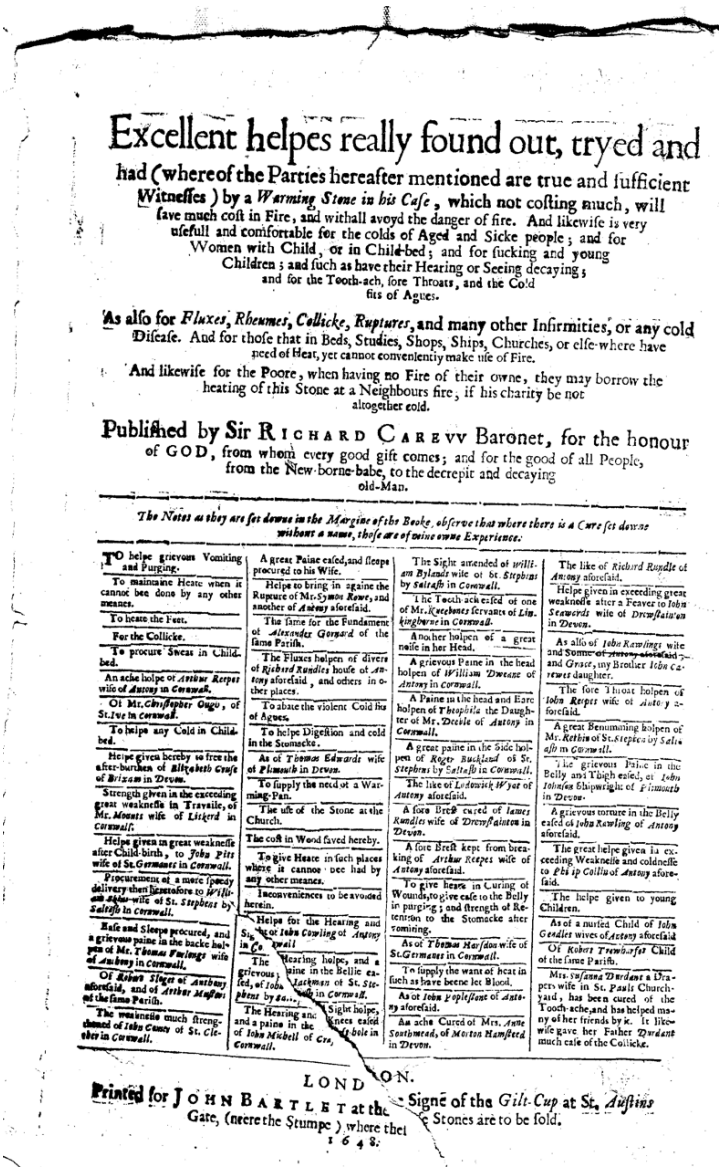

Excellent helpes really found out, tryed and had (whereof the Parties hereafter mentioned are true and sufficient Witnesses) by a *Warming Stone in his Case*, which not costing much, will save much cost in Fire, and withall avoyd the danger of fire. And likewise is very usefull and comfortable for the colds of Aged and Sicke people; and for Women with Child, or in Child-bed; and for sucking and young Children; and such as have their Hearing or Seeing decaying; and for the Tooth-ach, sore Throats, and the Cold fits of Agues.

As also for *Fluxes, Rheumes, Collicke, Ruptures*, and many other Infirmities, or any cold Disease. And for those that in Beds, Studies, Shops, Ships, Churches, or else-where have need of Heat, yet cannot conveniently make use of Fire.

And likewise for the Poore, when having no Fire of their owne, they may borrow the heating of this Stone at a Neighbours fire, if his charity be not altogether cold.

Published by Sir RICHARD CAREVV Baronet, for the honour of GOD, from whom every good gift comes; and for the good of all People, from the New-borne-babe, to the decrepit and decaying old-Man.

The Notes as they are set downe in the Margine of the Booke, observe that where there is a Cure set downe without a name, those are of mine owne Experience.

TO helpe grievous Vomiting and Purging.

To maintaine Heate when it cannot bee done by any other meanes.

To heate the Feet.

For the Collicke.

To procure Sweat in Child-bed.

An ache helpe of *Arthur Reepes* wife of *Antony* in *Cornwall*.

Of Mr. *Christopher Cuggo*, of St. *Ive* in *Cornwall*.

To helpe any Cold in Child-bed.

Helpe given hereby to free the after-burthen of *Elizabeth Croft* of *Brixam* in *Devon*.

Strength given in the exceeding great weaknesse in Travaile, of Mr. *Mounts* wife of *Liskerd* in *Cornwall*.

Helpe given in great weaknesse after Child-birth, to *John Pitts* wife of St. *Germans* in *Cornwall*.

Procurement of a more speedy delivery then heretofore to *William Adow* wife of St. *Stephens* by *Saltash* in *Cornwall*.

Ease and Sleepe procured, and a grievous paine in the backe helpen of Mr. *Thomas Pawlings* wife of *Anthony* in *Cornwall*.

Of *Robert Sleger* of *Anthony* aforesaid, and of *Arthur Maffew* of the same Parish.

The weaknesse much strengthened of *John Coney* of St. *Cleether* in *Cornwall*.

A great Paine eased, and sleepe procured to his Wife.

Helpe to bring in againe the Rupture of Mr. *Symon Rowe*, and another of *Antony* aforesaid.

The fame for the Fundament of *Alexander Gerard* of the same Parish.

The Fluxes helpen of divers of *Richard Rundles* house of *Antony* aforesaid, and others in other places.

To abate the violent Cold in of Agues.

To helpe Digestion and cold in the Stomacke.

As of *Thomas Edwards* wife of *Plimouth* in *Devon*.

To supply the need of a Warming-Pan.

The ease of the Stone at the Church.

The cost in Wood saved hereby.

To give Heate in such places where it cannot bee had by any other meanes.

Inconveniences to be avoided herein.

Helps for the Hearing and Sight of *John Cowling* of *Antony* in *Cornwall*

The Hearing helpe, and a grievous paine in the Bellie eased, of *John* Tuckman of St. *Stephens* by *Saltash* in *Cornwall*.

The Hearing and Sight helpe, and a paine in the Eares eased of *John Mabell* of *Cornwall*.

The Sight amended of *William Bylands* wife of St. *Stephens* by *Saltash* in *Cornwall*.

The Tooth-ache eased of one of Mr. *Roebones* servants of *Linkinghorne* in *Cornwall*.

Another helpen of a great paine in her Head.

A grievous Paine in the head helpen of *William Downes* of *Antony* in *Cornwall*.

A Paine in the head and Eare helpen of *Theophila* the Daughter of Mr. *Deeble* of *Antony* in *Cornwall*.

A great paine in the Side helpen of *Roger Rackland* of St. *Stephens* by *Saltash* in *Cornwall*.

The like of *Ledowick Wyat* of *Antony* aforesaid.

A sore Breast cured of *James Rundles* wife of *Drewsteinton* in *Devon*.

A sore Breast kept from breaking of *Arthur Reepes* wife of *Antony* aforesaid.

To give heate in Curing of Wounds, to give ease to the Belly in purging; and strength of Retention to the Stomacke after vomiting.

As of *Thomas Harsdon* wife of St. *Germans* in *Cornwall*.

To supply the want of heat in such as have beene let Blood.

As of *John Popleston* of *Antony* aforesaid.

An ache Cured of Mrs. *Anne Southmead*, of *Maxton Hamstead* in *Devon*.

The like of *Richard Rundle* of *Antony* aforesaid.

Helpe given in exceeding great weaknesse after a Feaver to *John Seawards* wife of *Drewsteinton* in *Devon*.

As also of *John Rawlings* wife and Sonne of *Antony* aforesaid; and *Grace*, my Brother *John Carewes* daughter.

The sore Throat helpen of *John Reepes* wife of *Antony* aforesaid.

A great Benumming helpen of Mr. *Rethin* of St. *Stephens by Saltash* in *Cornwall*.

The grievous Paine in the Belly and Thigh eased, of *John Tolmies* Shipwright of *Plimouth* in *Devon*.

A grievous torture in the Belly eased of *John Rawling* of *Antony* aforesaid.

The great helpe given in exceeding Weaknesse and coldnesse to *Philip Collins* of *Antony* aforesaid.

The helpe given to young Children.

As of a maimed Child of *John Gendles* wives of *Antony* aforesaid

Of *Robert Trewhafer* Child of the same Parish.

Mrs. *Susanna Durdant* a Drapers wife in St. *Pauls* Churchyard, has been cured of the Tooth-ache, and has helped many of her friends by it. Her likewise gave her Father *Durdant* much ease of the Collicke.

LOND[illegible]ON.

Printed for JOHN BARTLET at the [illegible] Signe of the *Gilt-Cup* at St. *Austins* Gate, (neere the Stumpe) where the[illegible] Stones are to be sold.

1648.

Figure 1. 1648 handbill advertising the warming stone, Hartlib Papers, 8/21A-B. Courtesy of the University of Sheffield Library, Special Collections and Archives.

The new emphasis and importance placed on specificity in these testimonials is reflected in the design of the advertisements. The 1648 bill is a single-sheet affair and offers only the wording on the title page and a four-columned table presenting the "Notes as they are set down in the Margine of the Book" (see Figure 1). These notes offer summaries of the

cures performed by the stone as well as the names of the sick and their location, for instance: "to help grievous Vomiting and Purging" and "An ache holpe of Arthur Reepes wife of Antony in Cornwall." There is surprising consistency across the different printed advertisements. The information listed in this 1648 bill can be found as bracketed italic notes at the end of paragraphs in the 1652 tract and as marginal notes in the 1660 publication. To reflect this new layer of information and emphasis on named personal testimonials, later advertisements for the stone drew attention to this material on title pages, pointing that the "*Parties Hereafter Mentioned are True and Sufficient Witnesses*." If the earlier printed materials presented the medical cases as instructional, by the 1650s they had shifted to take on issues of credibility, pointing not only to the multivalent meanings placed upon cure testimonials in this period but also to Carew and Bartlet's struggles to authenticate their product against similar devices made by "greedy Artificers."[96]

Moreover, paratextual materials suggest that issues of credibility and authority were also pertinent to the 1670s seller of the stones, Thomas Rooks. Rooks aimed his pamphlet at those who "desired a brief relation of those excellent vertues and rare qualities of the warming stone." The introductory paragraph states that the tract not only offered "short and clear directions for the using of it; But also several *undoubted* testimonials of its certain cures from very *credible* Persons" (emphasis added). In this final iteration of the text, the cure testimonials were designed to "satisfie the reason of any" —that is, as a way of validating the efficacy of the device.[97] It might seem striking that testimonials of cures performed decades ago in a remote Cornish village were still considered valuable and authoritative, particularly since Carew died in 1643. However, as we trace the story of the warming stone across these

[96] Hartlib Papers (n. 2), 71/17/3A.
[97] Carew, *Warming Stone* (n. 3), 3 and 10.

different publications, it becomes clear that while the content of the testimonials largely remained the same, their afforded epistemic status shifted over the decades of use. As the landscape for patenting inventions and for the sale of medical goods changed, the epistemic value of the testimonials changed too. Across three decades of promotional print, the cure testimonials transitioned from a way to illustrate possible uses to vehicles of proof and authority construction, reminding us of how the value and function of knowledge was assigned by users and producers and shifted to suit different social, political, and economic contexts. This dynamic nature of potential assigned value may explain why experiential knowledge held such valence among knowledge actors from so many walks of life.

Conclusion

In the winter of 1660, the clergyman and naturalist John Beale shared a "wild miscellany" about pearl-bearing shellfish with Samuel Hartlib, at the end of which he jokingly wrote, "This is all that I promised, & as much as I can performe in this excessive cold weather, In which I have more neede of Mr Carews best warming stone, than a pearle as big as my head."[98] Beale's reference suggests that by the 1660s the warming stone had become part of the everyday discourse among early modern Londoners and beyond. Based on unusually rich archival sources, its story has enabled us to delve deeply into the "ordering" of a business selling health technologies in mid-seventeenth-century London. The picture emerging is a dynamic one. From the start, our historical actors clearly viewed the stone as a modifiable technology, ready to be tweaked to respond to newly imagined uses or user feedback. The

[98] John Beale, "Discourse on Pearl-Bearing Shellfish," January [10?], 1659, Hartlib Papers, (n. 2), 25/17/1A-16B (16A).

many advertisements for the warming stone suggest that Carew continued to play around and experiment with the device post-launch and was eager to update the accompanying printed materials with additional uses and, crucially, patient testimonials. Just like many other proprietary medicines of the period, the medical authority of the stone was constructed upon the lived experiences of the sick. The discussion surrounding the warming stone / writing tablet is particularly revealing of how Carew balanced product design, practicality for use, and markets to create a health technology that had the widest possible use. After all, Carew believed that "there hath not beene an invention found out these many hundreds, scarce thousands of years so generally beneficiall to all mankind as this will prove, when it shalbe rightly understood, & duly practiced."[99]

While Carew's confidence in his own invention might be slightly exaggerated, the story of the stone reminds us of the rich array of therapies available to early modern men and women. In bringing the story of the warming stone to light, this article broadens the current historiography in several connected ways. First, the article extends histories of early modern therapeutics beyond pharmacy and materia medica to include medical devices. As this article has shown, everyday technologies of health occupied an important place in the lives of our historical actors, yet their histories remain largely unwritten. Cases like the warming stone also enrich our understanding of medicine and commerce in the period. To date, our knowledge of early modern medical businesses tends to focus on the drug trade, and with its detailed view into the production and sale of health technologies, this article offers a useful counterpoint to those histories.[100] Second, the article argues for the value of bringing history

[99] Hartlib Papers (n. 2), 71/17/4A.
[100] Haycock and Wallis, "Quackery and Commerce" (n. 57); Jane Stevens Crawshaw, "Families, Medical Secrets and Public Health in Early Modern Venice," *Renaiss. Stud.* 28 (2014): 597–618.

of technology frameworks to histories of early modern medicine, pushing us to attend to technologies in use, connections between materiality and function, and networks of knowledge exchange between users and producers. In so doing, it shines light on new historical actors, knowledge practices, and commercial ventures in early modern health care. Finally, the article recovers a rich world of everyday health objects that were key to our historical actors' health practices and extends the scope of objects and technologies worthy of investigation and study. For the early modern period, a focus on everyday health technologies might turn us toward investigations of bandages, antimonial cups, and hammams. Studies of these objects alert us to the blurry boundaries between self-directed bodily care, health maintenance, and interventional remedies beyond the use of medicaments and drugs.[101] If we follow the theme of warming health objects, for example, we might explore other heat-generating everyday technologies such as tabletop furnaces and little stoves.[102] Recovering these stories will prompt us to reflect upon how technologies deeply framed past medical encounters and quotidian health experiences in early modern London and beyond.

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[101] On health maintenance, see, for example, Sandra Cavallo and Tessa Storey, *Healthy Living in Late Renaissance Italy* (Oxford: Oxford University Press, 2013).

[102] See, for example, the "Ingenious Engine" described and sold by George Hartman in *The True Preserver and Restorer of Health* (London, 1682). On little stoves, see Marieke M. A. Hendriksen and Ruben E. Verwaal, "Boerhaave's Furnace. Exploring Early Modern Chemistry through Working Models," *Berichte zur Wissenschaftsgeschichte* 43 (2020): 385–411.

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