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“A most excellent medicine”: Malaria, Mithridate, and the death of Andrew Marvell

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ABSTRACT

The poet Andrew Marvell (1621–78) died suffering from vivax malaria, a common disease in the seventeenth century, endemic in estuary regions of eastern England. This article explores Marvell’s death alongside the literature and history of malaria and malaria treatments in this period. Marvell was long assumed to have been poisoned by political enemies until the rediscovery in 1874 of Richard Morton’s late seventeenth-century medical account, which blamed Marvell’s death on medical incompetence, noting that the anti-malarial quinine would have saved him. The article uncovers important new findings in the Marvell archives, re-examining Morton’s account in light of the manuscript, Hull History Centre, C DIAM/1 to argue that Marvell was in fact killed by the opiate, mithridate. The article offers new understanding of Marvell’s death and of the popularity of opiates as malaria treatments in Marvell’s day, of relevance to students of English literature, historical epidemiology, historical geography, and medical history.

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Introduction

In Andrew Marvell’s poem “A Dialogue between the Soul and Body”, the Body compares its possession by “this tyrannic soul” to the manacles of a common malady in late seventeenth-century England:

O who shall me deliver whole,
From bonds of this tyrannic soul?
Which, stretched upright, impales me so,
That mine own precipice I go;
And warms and moves this needless frame:
(A fever could but do the same).
And, wanting where its spite to try,
Has made me live to let me die.¹

Marvell is by no means the only English seventeenth-century poet to compare the spiritual maladies of the soul to the fits and convulsions of a fever, or “ague”. George Herbert (1593–1633) likens the burden of sin to a sickness, or what Sarah Skwire calls a “soul ague” – “One ague dwelleth in my bones”, Herbert writes, “Another in my soul”.² Herbert’s godfather, John Donne (1572–1631), similarly focuses on in-

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dwelling sin in “Holy Sonnet 19”, comparing the periodicity of his “devout fits”, that “come and go away”, to “a fantastic ague”.³ Recurring fevers that “come and go” every other day are a tell-tale symptom of vivax malaria – a common disease, and an intractable one in Marvell’s day. Malaria’s in-dwelling intractability finds fitting representation in Marvell’s simile of the soul-as-fever, with its clear implication that, like a soul, a recurring fever remains bound up with the body until death. When Marvell died on 16 August 1678, it was from an apoplexy, or stroke, caused by complications with the treatment he was receiving for symptoms consistent with vivax malaria.

There can be little doubt that malaria was endemic in estuary areas of eastern England throughout the seventeenth century, transmitted from human to human by the *Anopheles atroparvus* mosquito that still breeds in the salt marshes and fenlands of these regions.⁴ Malaria is a parasitic disease, and there are four species of the *Plasmodium* parasite that infect humans, the most common being *P. falciparum* and *P. vivax*.⁵ The different lifecycles of each parasite in the human blood stream give rise to malaria’s most characteristic symptom: a periodic fever recurring every forty-eight hours in vivax malaria (a “regular tertian ague”), more irregularly in falciparum malaria.⁶ Unlike falciparum malaria, vivax malaria is rarely fatal in human populations today, and as *P. vivax* can also survive in more temperate climates than *P. falciparum*, it is most likely to have been the parasite responsible for the spread of malaria in Marvell’s day.⁷ But if vivax malaria is today relatively benign, then could it really have been a killer disease in seventeenth-century England? Mary Dobson’s research suggests it might have been, for she notes higher than average mortality rates between 1550 and 1850 in precisely those marsh areas of Kent and Essex that we assume were highly malarious in this period.⁸ Yet there remains considerable disagreement about whether malaria was responsible for this high mortality, as Dobson and Paul Reiter argue, or whether, as Robert Hutchinson and Steven Lindsay suggest, “the killer in the marshes” was more likely to have been other infectious diseases with similar clinical presentations to malaria, such as dysentery or typhoid.⁹

This article responds to this debate by re-examining the circumstances surrounding the death of Marvell in August 1678 against the backdrop of discussion of the history of vivax malaria and its various treatments in later seventeenth-century England. Working across and between humanities and health sciences disciplines, it combines new bibliographical analysis of a Marvell manuscript – Hull History Centre, C DIAM/1 – with textual analyses of seventeenth-century medical works, and it applies the results of this research to the subject of historical epidemiology, offering new explanations for Marvell’s death, and for why vivax malaria might indeed have been a killer disease in Marvell’s day. The article uses Marvell’s death as a window onto the wider world of malaria treatments in late seventeenth-century England, yet the new understanding of Marvell’s death that the article develops will also add to our knowledge of the life of this significant seventeenth-century poet, inviting further reflection on Marvell’s interests in, and relationship with, medicine, doctors, and disease. These are interests manifest in Marvell’s Latin epitaphs for the victims of dropsy and smallpox, for example, and in his friendship with the physician Robert Witty, translator of one medical text – Primerose’s *Popular Errours* (1651) – examined below.¹⁰

What follows will argue that Marvell, long assumed to have been the victim of either a political poisoning or an incompetent physician, was in fact most likely killed by a medicine – the opiate, mithridate – which was ironically promoted as a poison antidote and a popular fever remedy in the seventeenth century.¹¹ The article uncovers important new findings – a manuscript recipe for a medicine containing mithridate in the Marvell archives – and uses these findings to highlight the popularity of opiates as a malaria treatment in Marvell’s day. The article also uses little-known seventeenth-century medical accounts which observe that opiates can cause apoplexies when used to treat periodic fevers specifically, to help advance a new understanding of why vivax malaria, although rarely fatal today, might nevertheless have contributed to the high mortality rates associated with estuary regions of eastern England in the seventeenth century. The discussion, therefore, shines a light, not only on the death of Marvell, but on the risks to which communities in eastern England were exposed in Marvell’s day – the risk not only of contracting malaria but also of succumbing to one of malaria’s several supposed cures.

The death of Marvell

The suddenness of Marvell’s death on 16 August 1678, aged 57, took commentators by surprise, and later led to rumours that he had been poisoned by political opponents. Four days after the event, Marvell’s nemesis, the press censor, Sir Roger L’Estrange, wrote to Henry Compton, bishop of London, that “Mr Marvell is Dead, (sodainly) and was bury’d on Sunday night”.¹² Marvell’s death must have been welcome news for L’Estrange, who had spent much of 1678 hounding Marvell, in and out of print, for his authorship of *An Account of the Growth of Popery and Arbitrary Government*, printed anonymously in January 1678.¹³ Marvell’s authorship of the *Account* was an open, albeit unproveable, secret, and there was a price on his head. “Great Rewards”, Marvell writes to his nephew, Will Popple, have been “offered in private, and considerable in the Gazette, to any who could inform of the Author or Printer”.¹⁴ Just how close L’Estrange was to catching his quarry at the time of Marvell’s death is unclear. In *An Account of the Growth of Knavery*, printed in April 1678, L’Estrange himself had hinted heavily – “as near as it was proper to go”, Marvell writes to Popple – of “a Member of Parliament, *Mr Marvell* [having] been the Author”, intelligence L’Estrange may have acquired from the bookbinder Thomas Bedwell, who in February 1678 had been committed to Newgate prison for his part in distributing Marvell’s *Growth of Popery*.¹⁵ Further arrests and interrogations of stationers connected with Marvell’s pamphlet followed in July 1678, but in the same month the author whom L’Estrange had dubbed “Merry-Andrew” had himself left the capital for one of his rare visits to Hull, there meeting with the mayor and aldermen on 29 July, and staying long enough for the corporation to draft letters directed to Marvell’s “Howse in Hull” on 10 August.¹⁶ Marvell must have left Hull for London around this date, for he arrived back at his London lodgings in Great Russell Street, Bloomsbury, in time for the former parliamentarian army officer, Edward Grosvenor, to report, on 17 August, “that Mr Marvell died yesterday of an Appoplex”.¹⁷ The suddenness of Marvell’s demise led one eighteenth-century biographer, Edward Thompson, to suspect foul play. “And yet, alas!”, Thompson writes,

All these patriotic virtues were insufficient to guard him
 Against the Jesuistical machinations of the State;
 For what vice and bribery could not effect, was perpetrated by POISON.¹⁸

In 1692, however, an alternative explanation for Marvell's sudden death appeared in a detailed clinical account of his final days by the physician, Richard Morton.¹⁹ Morton's Latin account makes clear that Marvell died, not at the hands of political assassins, but "through the ignorance of an old conceited doctor, who was in the habit on all occasions of raving excessively against Peruvian bark, as if it were a common plague [(ex ignorantia Medici senis atque superciliosi, cui in more erat contra, *Cortiem Peruvianum*, quasi communem pestem, immaniter ubique debacchari)]."²⁰ Peruvian or cinchona bark contains quinine, and the powdered bark, infused in wine, or prepared as a tincture, was recognised as an effective treatment for intermittent fevers in Marvell's day. This was primarily thanks to the pioneering work of Robert Talbor, or Tabor, who patented the first therapeutic dose of quinine through field trials with ague patients in Essex in the late 1660s, later selling his secret "arcanum" or cure – an infusion of powdered cinchona bark within "good Claret Wine" – to Louis XIV of France for a princely sum.²¹ Following Talbor's death in 1681, the French king had his physicians, Nicolas Bléigny and Antoine d'Aquin, publish the cure, which was then translated as *The English Remedy: Or, Talbor's Wonderful Secret, for Cureing of Agues and Feavers* (1682).²²

Morton writes that Marvell might have lived, "had a single ounce of Peruvian bark been properly given [Qui tamen ex unciâ una *Corticis Peruviani* ritè ministratâ]". The comment shines an important light on our understanding of Marvell's illness, revealing that Marvell, who according to Morton was suffering from intermittent fever, or "regular tertian ague [*Febris Tertianae legitimae*]" – a fever, in other words, occurring every other day – was highly likely to have been suffering from malaria at the time of his death. Reading evidence of malaria transmission in seventeenth-century England is not without its pitfalls, because physicians in Marvell's day, lacking modern-day understanding of the aetiology of disease, classed what we now know of as malaria as an ague, or fever – "a rather general disease condition", thought to have been caused by an imbalance of humours in the blood prompted by exposure to malodorous vapours, the "bad air" (Italian *mala-aria*) from whence the modern-day disease derives its name.²³ It was not until 1898 that epidemiologists identified malaria as a disease caused by *Plasmodium* parasites – most commonly *P. vivax* and *P. falciparum* – transmitted by anopheline mosquitoes, and not until 1917 that the more benign pathogen, *P. vivax*, was first found in blood samples from patients in south-east England.²⁴ References to "fever" or "ague" in Marvell's day may, therefore, refer to what we now know of as malaria, but may also refer to any number of diseases with similar clinical presentations. Yet it is possible, through careful reading of the conditions described, to identify with sufficient certainty instances of plasmodium malaria in seventeenth-century medical records, and the availability of the anti-malarial quinine in England from the 1660s increases confidence in malaria diagnoses for this period, helping differentiate malarial fevers responsive to quinine from those fevers unlikely to be malaria that were not.²⁵ Mary Dobson notes five signs of malaria found in seventeenth-century medical accounts: the forty-eight-hour periodicity of the fever, the characteristic alternating hot and cold fits, splenomegaly (enlarged spleen), anaemia, and responsiveness of the fever to cinchona bark.²⁶ Morton's

description of Marvell's fever contains three of these five characteristic signs: periodicity (a "tertian ague [*Febris Tertiana*]"), "cold shivers [sultem *Algorem*]", and the suggestion that "a single ounce of Peruvian bark [unciâ unâ *Corticis Peruvianii*]" might have saved him.²⁷ It therefore gives a strong indication that the symptoms Morton observed in Marvell were the same as for malarial agues treatable with quinine and that Marvell was therefore likely to have been suffering from malaria at his death.

Malaria, the London marshes, and the 1678 fever epidemic

Marvell's movements, from London to Hull and back, in the weeks before his death also make the malaria diagnosis more likely. Dobson notes that malaria was "unique in its geography – it was a disease endemic in marshlands, but rarely prevalent in other parts of England".²⁸ London and Hull were both located in malarious regions because built on tidal estuaries surrounded by salt marshes in the seventeenth century. The geography of malaria was intrinsically linked to the breeding grounds of the *Anopheles atroparvus* mosquito, which, as Dobson notes, "breeds most readily in slightly saline water", and is therefore found in greatest concentrations in the salt marshes and fenlands of England's east coast.²⁹ The lowlands were an "aqueous, low-lying environment" liable to seasonal sea flooding in the era before nineteenth-century land drainage, and salt-water collecting in standing pools, or drained into ditches and dykes, proved "an ideal habitat for mosquitoes".³⁰ To transmit malaria from human to human, anopheles also need to live in close proximity to people infected with the parasite, for the mosquito ingests and incubates the malaria gametocytes by feeding off the blood of an infected person, and it then hosts the developing gametes, which require at least sixteen days, at a minimum average temperature of 16°C per day, to reproduce sporozoites in the mosquito's saliva, ready to be transmitted to a new human host.³¹ Vivax malaria is the more likely strain to have been endemic in England in Marvell's day because more adaptable to temperate climates, but vivax malaria was nevertheless still a seasonal disease in seventeenth-century England, its transmission dependent on hot summer days: the hotter the English summer, the higher the rate of malaria transmission. Dobson observes a seasonal pattern for annual mortality rates across seven Essex marsh parishes between 1561 and 1820, with the highest peaks in August–October.³² Outbreaks of vivax malaria were therefore commonest within estuary regions of eastern England, in the months of August–October following a hot, dry summer.

These, as Nicholas von Maltzahn notes, were precisely the climactic conditions that prevailed around the time of Marvell's death in August 1678.³³ The summer of 1678 was indeed hot, with an estimated mean air temperature for July of 16.5°C, the hottest month of that year. This compares with a July average for the capital across the 1670s of 15.8°C. The two summers following were also warmer than the decade average, with a mean air temperature of 16°C estimated for July 1679 and 1680, while the three-month average for June–August 1679 rose to 16.2°C, as compared with 15.3°C for the same months in 1678.³⁴ The warmer summers coincided with a spike in fevers at the end of the 1670s in the two locations Marvell moved between in July–August 1678: London and Hull both reported fever epidemics in the years 1678–80. In Hull, at least 520 deaths from "agues", more than twice the usual number, are reported in the civic records for 1680.³⁵ In London, the Yorkshire physician William Simpson records his observations on "this

new autumnal-fever” in two medical texts printed in 1678.³⁶ Simpson not only notes the spread in London of “the now grassant Epidemick Fever” but also its potency, writing that “it becomes mortal to many”, and has increased “our Bills of Mortality of the City and Suburbs, besides the swellings thereof in the Country”.³⁷ Simpson’s account is corroborated by the London weekly bills of mortality themselves, which show a steady rise in deaths from “fever” in each of the four weeks beginning 20 August 1678, from 77 (out of 459, or 17%) in week beginning 20 August, to 103 (out of 621, or 17%) by the end of the week beginning 10 September 1678.³⁸ Marvell probably contracted the disease in London before setting out for Hull for his meeting with the Hull corporation on 29 July. Morton records that Marvell’s death on 16 August 1678 occurred twenty-four hours after the beginning of his fourth fit, or on day ten after the onset of symptoms, so his first fit probably appeared on or around 6 August. Given that vivax malaria has a typical incubation period in humans of twelve to seventeen days, this means Marvell is likely to have been first infected with the pathogen between 20 and 25 July 1678, although it is possible the point of primary infection occurred earlier, given observed variations in the length of the prepatent period in some strains of *P. vivax* in South America today.³⁹

London’s proximity to the salt marsh habitats of *atroparvus* mosquitoes was a likely factor in the observed rise of fever deaths during August 1678. The shallow, slightly saline pools of water that form the perfect breeding grounds for these mosquitoes were noted in the seventeenth century for their “strong and distinctive sulfurous odor”, a by-product of “the anaerobic bacterial flora of saline mud”.⁴⁰ Writers commonly linked the *mala-aria* of the marsh regions with the onset of intermittent fevers. As the poet and diarist John Evelyn notes, in his petition for the removal of coal-powered industries from the capital, *Fumifugium* (1661), clean air is as important to well-being as clean water, and “the Emphysoning of *Aer*, was ever esteem’d no less fatal then the poysoning of Water”.⁴¹ “The drier *Aer* is generally the more salutary and healthy”, Evelyn writes; the moister the air, the more likely to cause that imbalance of humours in the blood deemed responsible for the onset of intermittent fevers.⁴² The febrile paroxysm, as Talbor writes, is formed through “tough viscous humours” that first obstruct the passage of blood into the heart, causing tremors, or “a trepidation of the whole microcosme”.⁴³ When the blood is finally forced through the heart, Talbor continues, “an ebullition of the blood doth ensue”, “as when a Sluyce is opened in a Mill, or other current of water”, and this “causeth the hot fit”. After this the patient recovers, Talbor writes, until the same “viscous humours” return again to the heart some forty-eight to seventy-two hours later, these different periodicities arising “from the levity or ponderosity of the *materia morbifica*, whether Phlegme, Cholera, or Melancholly”.⁴⁴ Talbor’s analogy between the flow of febrile blood through the heart and the flow of water through a sluice gate – a characteristic feature of managed marsh lands in the seventeenth century – implicitly links the marsh fevers Talbor describes with the marshland environments of sluice, dyke, and ditch so familiar to Talbor from his stay in “Essex near to the Sea side, in a place where Agues are the epidemical diseases”.⁴⁵

In *Fumifugium*, Evelyn also makes these Hippocratic associations between air, water, and wellbeing, citing Hippocrates’ *On Airs, Waters and Places* to support his claim that the “infernal vapour” of London’s coal smoke is as detrimental to health as the marshlands’ malarious vapours.⁴⁶ No wonder Evelyn sought to banish both from London’s city and suburbs, proposing a scheme for removing polluting industries from the capital that

is also offered as a solution to the salt marsh vapours that surround London. Evelyn suggests relocating coal-powered industries “to stand behind that *Promontory* [...] securing *Greenwich* from the pestilent *Aer* of *Plumstead-Marshes*”.⁴⁷ For “I am persuaded”, Evelyn writes, “that the heat of these Works, mixing with the too cold and uliginous vapours which perpetually ascend from these Fenny Grounds, might be a means of rendering that *Aer* far more healthy then now it is; because it seems to stand in need of some powerful drier”.⁴⁸ Dobson’s research on the links between malaria and marsh regions in eastern England was focused some thirty to forty miles east of London, in the marsh parishes of the Thames estuary, but these salt marshes also extended westwards to England’s capital – not just to Plumstead Marshes, four miles east of Greenwich, but even as far as Lambeth, which was “notoriously malarious” in Marvell’s day, and located directly opposite Westminster and Whitehall on the south bank of the Thames.⁴⁹ North Lambeth, now Waterloo, remained a salt marsh until drained and levelled by William James in the early nineteenth century, and the proximity of this marsh to the Whitehall seat of government may explain why malaria was such a political disease in the seventeenth century.⁵⁰ Both James VI and I (d. March 1625) and Oliver Cromwell (d. September 1658) were suffering from intermittent fevers at their deaths, Cromwell having reportedly refused quinine in his final hours, while Charles II only recovered from a serious attack of tertian ague in August 1679 through the application of cinchona bark – a strong indication that his fever was also malarial.⁵¹

Malaria and mortality rates: identifying “the killer in the marshes”

Malaria was almost certainly endemic in seventeenth-century London, and the hot summer of 1678 must have swelled the number of malaria cases in the capital, as Simpson’s medical texts, and Morton’s notes on Marvell’s fever and death, in part confirm. But the bills of mortality for autumn 1678 also make clear that “fevers” were not the greatest cause of sickness and death in London that year. Although weekly fever deaths rose from 77 to 103 in the four weeks from 20 August 1678, the proportion of deaths attributed to fever over the same period remained static, at 17% of the total weekly deaths from all causes. This was because deaths from “griping in guts” were rising even more starkly over the same period, from 87 (out of 459, or 19%) in week beginning 20 August, to 164 (out of 621, or 26%) in week beginning 10 September 1678.⁵² “Gripings” or abdominal cramps reflect a range of diarrhoeal diseases, many of which also present with a high temperature, and so the bills of mortality suggest that there was more than one killer fever in the capital in autumn 1678. The picture is further complicated by the terminology used by William Simpson, who was clearly observing a range of fever conditions in autumn 1678, but who nevertheless assumed that these were all simply variations on the same “new Fever”.⁵³ “In its native dress”, Simpson writes, the fever “emulates a Quotidian, other-while a Tertian; especially for the 3 or 4 first fits”, but the fever also “appears with vomitings”, or “come[s] disguis’d under the livery of the Gripes and Looseness [...] which Disease, in many persons, is nothing else but this Fever [...] transmitted from the Arteries into the Intestines”.⁵⁴ From the wide variations in these symptoms, Simpson appears to have been treating cases of malaria alongside those of enteric fever and dysentery. Dobson concludes that the 1678 epidemic was caused by a non-malarial ague, probably enteric fever, and possibly fly-borne.⁵⁵

However, distinctions in the bills of mortality between deaths from “fever” and those from “griping in the guts” point to the probability that enteric fevers causing “griping” may have been spreading at the same time as the more “native” tertian, or malarial, fevers that Simpson describes.

As well as mosquitoes, marsh regions of stagnant and insanitary water were also breeding grounds in the seventeenth century for a variety of water-borne pathogens, and this muddies our ability to confidently associate deaths from fevers in marsh parishes with deaths from malaria. Hutchinson and Lindsay acknowledge the “ample evidence that malaria was present in the marshes” but question whether the relatively benign *P. vivax* parasite was ever virulent enough to be responsible for the high mortality rates noted by Dobson in the Thames estuary. They write that “although vivax malaria is a serious illness, nowhere in the world has it been a substantial direct cause of death”, and they point to evidence of the contrasting pathogenicity of vivax and “potentially lethal falciparum malaria” found in early twentieth-century field studies in India and Brazil.⁵⁶ Dobson writes of vivax malaria as “a great debilitator” and argues that it may have been a secondary cause of death in England in the period 1551–1850, with repeated attacks and relapses “likely to result in a chronic state of ill health and lead to early death”, either through malnutrition or by lowering immunity to “other infectious diseases such as smallpox, typhoid, tuberculosis and influenza”.⁵⁷ Hutchinson and Lindsay agree that “vivax malaria could contribute substantially to malnutrition”, but conclude “that the poor hygiene and sanitation in the marshes caused the high mortality rates”, citing dysentery among the likely culprits.⁵⁸ For Reiter, evidence from William Harvey’s observations of blood clotting in ague patients in London, in *de Motu Cordis* (1628), “may indicate that [the more virulent] *P. falciparum* was also present”.⁵⁹ However, the combined evidence of studies indicating the inability of atroparvus mosquitoes to transmit the falciparum parasite, and England’s temperate late seventeenth-century climate – no monthly mean temperature for central England between 1659 and 1699 exceeds 18°C, the minimum temperature for effective *P. falciparum* maturation – makes the presence of falciparum malaria in seventeenth-century England extremely unlikely.⁶⁰

Simpson’s accounts of the 1678 fever epidemic suggest that poor water sanitation and supply may indeed have contributed to high mortality rates in London in this period, in part corroborating Hutchinson and Lindsay’s findings. In his *Short essay*, Simpson casually refers to the fact that he prepared medicine for one fever-sufferer “in *Thames-water* (he having no distilled Water by him)”, a practice that points to wider uses of the Thames as a perceived source of potable water.⁶¹ Hutchinson and Lindsay are surely correct to link water-borne pathogens with increased mortality. But their suggestion that vivax malaria was an unlikely direct or even indirect cause of death in the pre-modern period overlooks two key differences between seventeenth-century treatment regimens for malaria and those established in the early twentieth century, at the time of the studies conducted with malaria patients in India and Brazil that Hutchinson and Lindsay cite as evidence that vivax malaria is rarely fatal. Both differences relate to the availability of the effective antimalarial, quinine, which was used to treat malaria patients in the two early twentieth-century studies cited by Hutchinson and Lindsay, and which, used on its own, or alongside its synthetic equivalent chloroquine in recent studies in Southeast Asia and South America, has been shown to produce cure rates for all forms of uncomplicated malaria of between 76% and 98%.⁶² But although in use in England by the 1660s, quinine

remained an unpopular, expensive, and therefore largely inaccessible treatment for intermittent fevers long after Marvell's death. We need therefore to take quinine's patchy use as an anti-malarial into account when determining how far vivax malaria was a fatal disease in Marvell's day.

The absence of quinine is the first key difference between treatments for vivax malaria in the seventeenth century, and treatments for the same disease today, and it suggests we should be cautious about using modern-day survival rates for vivax malaria as a guide to seventeenth-century outcomes for this disease. The second difference relates to the treatments that were used in place of quinine in the later seventeenth century, and to a consideration of how detrimental to health these alternative treatments may have been: whether they simply had no therapeutic benefit as anti-malarials or whether they actively worsened the condition of malaria sufferers and in some cases led to the malaria patient's death: in other words, to death by iatrogenesis or "death by doctors". Dobson considers malnutrition one of the several debilitating factors contributing to indirect causes of death from vivax malaria in the seventeenth century. But no study to date has seriously considered the role that iatrogenesis may have played in malaria deaths in seventeenth-century England, and this despite the fact that Morton's case notes on Marvell's treatment and death amount to an explicit accusation of iatrogenesis, with Morton alleging that Marvell's death was entirely preventable, the fault "of an old conceited doctor [ex ignorantia Medici senis atque superciliosi]", and that "a single ounce of Peruvian bark" would have saved him.

A closer examination of Morton's account indicates that he not only points his finger at what Marvell's doctor omits to do – his decision not to prescribe powdered Peruvian bark to the patient. More problematic, for Morton, is the ill-effects of the actions Marvell's incompetent physician does take: in particular, his decision to prescribe, "at the beginning of the next fit, a great febrifuge [...] a draught, that is to say, of Venice treacle [sub initium paroxysmi subsequenti exhibebatur magnum Febrifugum, hautus scil. ex Aquâ Theriacali]".⁶³ Venice treacle is an ancient opiate prized as a diaphoretic and still popular as a fever treatment in late seventeenth-century England. In what follows, I want to focus in detail on Morton's account of Marvell's death, and to explore its implications for our understanding of the continued popularity of opiates as fever treatments in the later seventeenth century. In so doing, I will argue that Marvell died, not from malaria *per se*, but from an avoidable apoplexy caused by his doctor's decision to prescribe an opiate as an anti-pyretic. The discussion not only uncovers new evidence for the circumstances surrounding Marvell's death but uses evidence of the popularity of opiates as anti-pyretics to help explain why vivax malaria may indeed have been indirectly responsible for deaths in seventeenth-century England, even though it is considered a relative benign disease with good survival rates today.

Malaria treatments in seventeenth-century England: Quinine and Mithridate

Richard Morton's Latin account of Marvell's sickness and death forms part of his general discourse on fevers, *Pyretologia* (1692), a pioneering work in the newly-emerging discipline of nosology – the science of disease classification – that proposes classifying fevers according to the efficacy, or otherwise, of their treatment by Peruvian bark.⁶⁴ It is unclear exactly when Morton came to hear of the circumstances surrounding Marvell's illness, but whoever disclosed these details to Morton most likely did so in

the weeks and months immediately following Marvell's death. Morton claims that he heard the account directly from the "old conceited doctor [Medici senis atque superciliosi]" who treated Marvell, and he goes on to relate how, "burning with anger [excandescens]", he had rebuked the doctor "when he told me this story without any sense of shame [hanc historiam fronte satis perfrictâ narranti]".⁶⁵ Did the story emerge accidentally from Morton's chance encounter with a medical colleague, or did Morton arrange an interview with the doctor in question having first learned of the circumstances surrounding Marvell's death from another source? The latter seems more likely, given that we know that Morton was actively gathering evidence for a study on intermittent fevers – likely forming an early draft of *Pyretologia* – around the time of Marvell's death in the late 1670s. Morton would go on to advertise the fruits of this research in a prospectus, printed in February 1680, for three of his forthcoming medical works, of which one was on the topic of intermittent fevers, a second on their treatment by Peruvian bark. The advertisement concludes by welcoming "communication with learned men (via the Secretary of the Royal Society, London) [gratè commemorandis, quæ Viris eruditis (per Regiæ Societatis Lond. Secretarium)]" about matters relating to Peruvian bark, so if Morton had not already by 1680 heard of Marvell's death from other sources, then it may have been this advertisement that occasioned a correspondent to write to Morton about Marvell's "old conceited doctor" and his failure to prescribe Peruvian bark.⁶⁶ In any event, Marvell's name and reputation would not have been unknown to Morton; Morton's account of Marvell's death suggests he already knew of and admired the writings of "that most famous man Andrew Marvell [celeberrimus ille vir *Andreas Mervill*]", and, given what we know of Morton's background as a nonconformist minister with family links to Richard Baxter, Morton's cousin, Philip Foley of Prestwood, Staffordshire, and Foley's close associate in parliament, Sir Edward Harley, it is certain that he and Marvell not only shared common interests in religious toleration but common friends and acquaintance among London nonconformists in the 1670s.⁶⁷ Several of the "learned men" of the Royal Society whom Morton applied to in his advertisement of February 1680 also had links with Marvell, among them Morton and Marvell's mutual acquaintance, Sir Edward Harley.⁶⁸ However Morton first heard of Marvell's death, therefore, he clearly had access, as a physician and nonconformist, to sources close to Marvell. This, together with Morton's claim to have based his account on the first-hand evidence of his interview with Marvell's doctor, strongly hints at the essential reliability of Morton's case notes on Marvell's treatment and death.

Morton's account of Marvell's death was first brought to the attention of modern readers by Samuel Gee, in March 1874. Gee notes the tradition among Marvell's biographers of ascribing Marvell's sudden death to the effects of poison, and sees in Morton's account an opportunity to correct the biographical record, turning a tale of assassination to one of iatrogenesis: "Marvell was not poisoned", he writes, "but was only killed by a man who obstinately adhered to the worst traditions of the Middle Ages".⁶⁹ This doctor's "medieval" practices Gee then goes on to illustrate by printing Morton's Latin account alongside Gee's own English translation, which reads as follows:

In this manner was that most famous man Andrew Marvell carried off from among the living before his time [...] through the ignorance of an old conceited doctor, who was in the habit on all occasions of raving excessively against Peruvian bark, as if it were a common plague. Howbeit, without any clear indication, in the interval after a third fit of regular tertian ague, and by way of preparation (so that all things might seem to be done most methodically), blood was copiously drawn from the patient, who was advanced in years [...]. The way having been made ready after this fashion, at the beginning of the next fit, a great febrifuge was given, a draught that is to say, of Venice treacle, etc. By the doctor's orders, the patient was covered up close with blankets, say rather, was buried under them; and composed himself to sleep and sweat, so that he might escape the cold shivers which are wont to accompany the onset of the ague-fit. He was seized with the deepest sleep and colliquative sweats, and in the short space of twenty-four hours from the time of the ague-fit, he died comatose. He died, who, had a single ounce of Peruvian bark been properly given, might easily have escaped, in twenty-four hours, from the jaws of the grave and the disease [...].⁷⁰

Generations of Marvell scholars have logically assumed from Gee's translation that the principal accusation Morton levels at Marvell's doctor was that his failure to prescribe powdered Peruvian bark had brought about an otherwise avoidable death. Thus W.H. Kelliher notes of Marvell's death that "A professional report alleged medical incompetence, and concluded that an ounce of quinine might have saved him"; von Maltzahn writes of Marvell's "inept treatment" by a physician who, "rather than giving him quinine [...] administers 'a draught of Venice treacle'"; and a similar focus on the quinine cure also characterises Nigel Smith's account, with Smith writing that Morton "noted angrily that an ounce of quinine [...] instead of the treacle would have produced a cure for Marvell in a day or so".⁷¹ But how readily available was quinine in London in 1678, and how far can Marvell's doctor therefore be held culpable for his failure to prescribe it? Talbor's pioneering work in Essex patenting a safe prescription for powdered Peruvian bark had succeeded, by the time Talbor publishes his own *Pyretologia* in 1672, in curing "the most inveterate and pertinacious Agues" with the bark, but Talbor never reveals that his cure contains powdered bark, and he even goes so far as to caution readers against the use of Peruvian bark for agues.⁷² Cinchona bark, Talbor writes, "is a noble and safe medicine, if rightly prepared and corrected [...] otherwise as pernicious a medicine as can be taken".⁷³ It was only upon publication of *The English Remedy* in 1682 that English readers would learn that "Talbor's Wonderful Secret" was indeed the "pernicious" powdered bark he had so openly cautioned readers against using ten years earlier. Marvell, however, was by this point already dead, and even Morton, so quick to judge Marvell's doctor for refusing to use Peruvian bark, did not, as we have seen, circulate his own opinions on the efficacy of the bark as a treatment for intermittent fevers until after Marvell's death, in the writings published as *Pyretologia* (1692) and first advertised in February 1680, in *Medicae Dissertationes Tres*.⁷⁴ As Talbor's cautious remarks about the use of quinine in 1672 suggest, no safe and effective preparation of the bark had gained general consent in London before 1678, despite qualified recommendations for its use by the respected pyretologist, Thomas Sydenham as early as 1666, in the *Methodus curandi febres*, and, later, his revised recommendations in *Observationes medicae* (1676).⁷⁵ Yet although endorsing the bark in print by 1676, the following year Sydenham nevertheless opts not to recommend its use as a treatment for agues in a letter of 4 January 1677 to the physician and philosopher John Locke. Sydenham's later letter to Locke, of

3 August 1678, is more forthright in its opinions on the efficacy of the bark and even refers Locke to Sydenham's account of its preparation in *Observationes medicæ* (1676). But Sydenham's emboldening standpoint on the bark can be traced to the event to which his later letter to Locke responds – the news that Talbor had been knighted, in July 1678, for his pioneering work on the bark.⁷⁶ Certainly, Talbor's growing reputation increased the popularity of Peruvian bark as a fever cure in the month of Marvell's death, yet the price of the bark also increased with its popularity. As the author of *English Remedy* writes, "about 3–4 years ago [i.e. around 1678] men began every where to make Experiments with the Bark of *Peru*, which much enhanced the value of it".⁷⁷ Had Marvell's doctor wanted to prescribe Peruvian bark in August 1678, therefore, he would have been faced with the considerable obstacles of paying vastly inflated prices for an in-demand product in short supply.⁷⁸ Morton's own involvement, some years later in 1690, in a "scandal" surrounding the London physician, Charles Goodall, and allegations that he had been over-charging for his stock of powdered bark, suggests that the "price wars" of 1678 were a feature of the London market for Peruvian bark right up to the end of the seventeenth century.⁷⁹

This is not to suggest that quinine was not in use in London in the later 1670s; rather, that its use was contentious and contested, and that as a patient Marvell might have found the costs of quinine prohibitively expensive, and may have been uncertain about which of the many "Experiments with the Bark of *Peru*" could be relied upon as an effective fever cure. When in August 1679 Charles II fell dangerously ill with an intermittent fever, his physicians were at first as reluctant as Marvell's to administer the bark, and only did so after the intervention of the respected physician, Thomas Short.⁸⁰ Two decades after Marvell's death, Everard Maynwaringe was still voicing doubts about the reliability of Peruvian bark in *Ignota Febris* (1698), which makes the accurate observation that quinine neither "cures" malarial fevers nor prevents relapses, but only suppresses their clinical symptoms, the paroxysm.⁸¹

William Simpson's two essays on "this new autumnal-fever" of 1678 provide a window on an alternative, perhaps more typical treatment regimen for intermittent fevers in the month of Marvell's death, and suggest that Marvell's doctor was less "medieval" for opting against quinine than Morton wants his readers to believe. Simpson's primary aim in these essays is to make elaborate claims for the efficacy of his own patented cure for fevers – "one of the best Medicines in the world for the cure of most, if not all sorts of acute diseases" – while characteristically concealing from readers information about this medicine's active ingredients.⁸² Simpson does reveal, however, that his "*Arcanum* [...] hath not one grain of *opium* in it", and writes that his treatment methods typically involve neither sweating nor bleeding fever patients, for "Sweating did not (as often as trial was made) succeed at all; the patients under such sweating Medicines, generally growing worse and worse".⁸³ Simpson does however recommend bleeding for physicians unable to obtain some other "more noble and commanding *Arcana*", directing that physicians "open a Vein, taking six, eight, or ten ounces".⁸⁴ Simpson's directions for blood-letting share several similarities with Marvell's treatment regimen, although there are also differences here, primarily Simpson's doubts about the therapeutic value of sweating. Simpson's pragmatism – that if the best cure is unavailable, proceed with an alternative – also bears witness to the countless fever cures available in Marvell's day. Peruvian bark, Dobson writes, "was only one of many remedies in use in the seventeenth and eighteenth

centuries”, and only advocates of the bark, like Morton, would have dubbed Marvell’s doctor “medieval” for refusing its use.⁸⁵

Morton’s account not only berates Marvell’s doctor’s “medieval” refusal to use Peruvian bark but his preference also for bloodletting and sweating. Both were products of the Hippocratic and Galenic humoural theory of disease, adopted as the standard medical model throughout the Middle Ages, and still common in Marvell’s day. The aim of sweating, Simpson writes, was to break a fever by “purifying the blood” of its humoural imbalance – an imbalance, in the case of intermittent (tertian or quartan) fevers, Talbor notes, caused either by excess “Choler, or Melancholly”, respectively, in the blood.⁸⁶ Doctors induced sweating before the onset of the chills or tremors, the first stage of the febrile paroxysm, applying “heaps of clothes” and “sweating Medicines” in order, as Morton writes of Marvell’s sweating treatment, “so that he might escape the cold shivers which are wont to accompany the onset of the ague-fit [ut sultem *Algorem & Horrorem* primum insultem paroxysmi comitari solitos evitaret]”.⁸⁷ Opium was the most popular sweating medicine in the late seventeenth century, heating the body and preventing “Shiverings in Ague fits”, because, as John Jones explained, “it takes away the sense of the *Irritating Humours* that causes them”.⁸⁸ Opium’s use as a febrifuge was even recommended by the author of *English Remedy*, Nicolas Blégny, who likens opium to the virtues of Peruvian bark, arguing that both taste bitter and therefore are both “by consequence Febrifugous”.⁸⁹ *The English Remedy* acknowledges that opium should be used with caution and that many “seem to look upon it as a most dangerous Poyson”, but Blégny argues that opium “kills not but when a bad use is made of it; and that so there is no more Poyson in it, than in the best Medicines”.⁹⁰ The Hull-Huguenot physician James Primerose agrees, noting of opium in his *Popular Errours* (1651) – a work translated by Primerose’s fellow Hull physician, Robert Witty and prefaced by two commendatory poems by Marvell – that “the people doe abhorre from the use thereof, and avoid it as present poyson, when notwithstanding being rightly prepared, and administered in a convenient dose, it is a very harmlesse and wholesome medicament”.⁹¹ Like quinine, which, as Talbor writes, was potentially “pernicious” if prepared incorrectly, opium was noted as a potentially dangerous, but also powerfully febrifugous medicine if taken in moderation.

The febrifuge given to Marvell – “a draught [. . .] of Venice treacle [*Aquâ Theriacali*]” – was widely recognised as an opiate. Many medicines “that are to bee sold in shops have Opium in them”, Primerose writes, “as Triacle, Mithridate, *Dioscordium*, *Philonium*”.⁹² According to the author of *English Remedy*, “*Venice Treacle* is only more excellent than others, because it contains Opium in a greater quantity”.⁹³ These opiates were originally prepared as antidotes for poison – Primerose notes that “the ancient Physicians were wont to put [opium] into almost all their Antidotes”, while “mithridate”, as Nicholas Culpeper writes, in *The English Physitian Enlarged* (1653), derives its name from Mithridates VI (reigned 120–63 BC), “that renowned King of *Pontus*”, who “fortified his Body by Poyson against Poyson”.⁹⁴ By the seventeenth century, these antidotes were also being sold as diaphoretics, or sweating medicines, to help treat a range of diseases, including intermittent fevers, small pox, and plague. “Mithridate” and “Venice Treacle” are both very similar in composition and belong to the family of poison antidotes and panaceas called “theriacs”, the English “treacle” being a corruption of “theriac”, as J.P. Griffin notes. Mithridate originated in the second century BC, while Venice Treacle is

sometimes called *theriaca Andromachi* because based on an “improved” mithridate formulation developed by Andromachus, physician to the Roman emperor, Nero (37–68 AD). It was manufactured in the Veneto region of northern Italy from Greek and Roman medical textbooks from the twelfth century onwards.⁹⁵ According to Galen, mithridate contained fewer ingredients than Andromachus’ theriac (forty-one compared to fifty-five), and “the opium content of Andromachus’ theriac was higher than that of Mithridatum”.⁹⁶

Mithridate and Marvell’s “Most Excellent Medicine”: Re-examining C DIAM/1

There survives in the Marvell archives at the Hull History Centre a recipe for the kind of *Aquâ Theriacali* that Morton writes was given to Marvell some twenty-four hours before his death (Figure 1). Entitled “A Most Excellent Medicine against the Plague”, it directs users to dissolve “two Ounces of Treacle, [and] one Ounce of Mithridate” within “a q[uar]ter of a Pint of Angelica water”, and then to add this to a reduction of “Muscadine wine” with sage, rue, long pepper, ginger, and nutmeg. Promoted as both a fever remedy and a prophylactic, the resultant treacle was to be taken warm mornings and evenings, “a spoonful or two, if infected, & sweat after it; but if not infected a spoonfull a day is sufficient, halfe in the morning, & halfe in the Evening to prevent Infection”. The recipe ends with the statement: “This is Good also in the small pox, Measles surfeits, or fevers – made use of with good successe when the Plague was

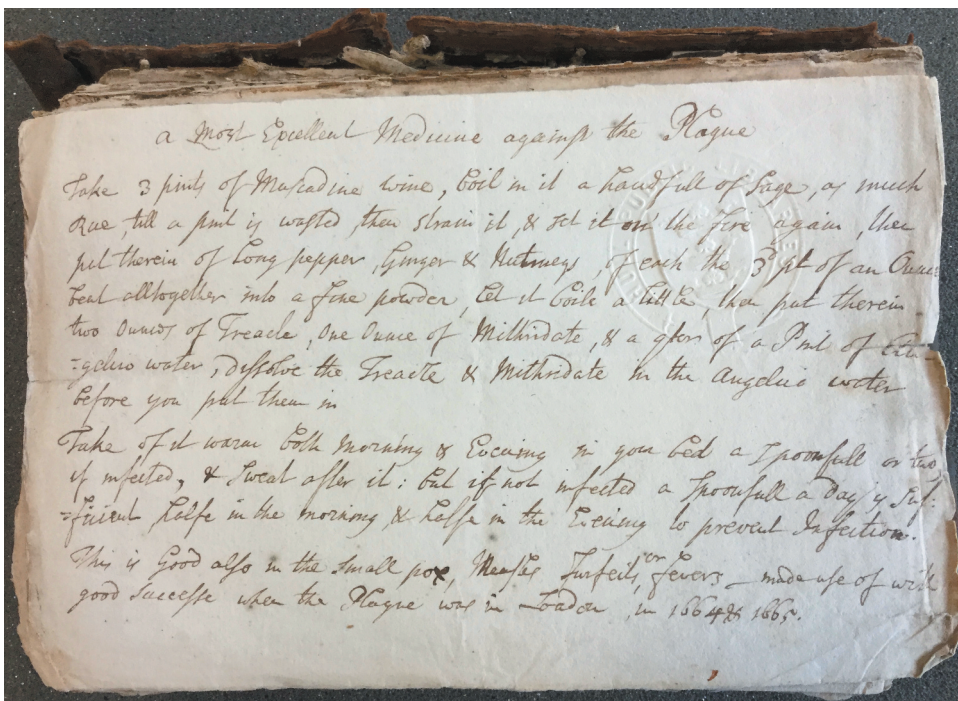


Figure 1. “A Most Excellent Medicine against the Plague” (ca. 1666). C DIAM/1, fol. 129 r. Reproduced by permission of Hull City Archives, Hull History Centre, Hull.

in London, in 1664 & 1665". This end statement is significant, because as well as highlighting the role of mithridate as a popular remedy for fevers, it also provides a *terminus a quo* – early 1666 – for the composition of the manuscript recipe itself.⁹⁷ In his *Popular Errours*, Primerose had cautioned fever sufferers against "frequent use of cordiall remedies", as "Triacle, Mithridate, and the like", arguing that "the drinking of cold water doth more help one that is in a Fever than Aqua caelestis, Imperialis Triacle water, or any other strong water whatsoever".⁹⁸ "Moreover", he continues, "it is possible that Triacle, Mithridate, and other such like, which are in most frequent use, may doe much hurt".⁹⁹ On the one hand, therefore, Primerose argues against the frequent use of "strong waters" as "strengthening medicines" for fevers. On the other, "A Most Excellent Medicine" prescribes twice-daily doses of one such "strong water" containing all the ingredients – "Triacle, Mithridate", and "Aqua caelestis", or "Angelica water" – that Primerose specifically cautions his readers against.¹⁰⁰ The existence of this manuscript recipe therefore opens a fascinating window on popular medicinal practices in late seventeenth-century England, throwing light on some of the "popular errors" surrounding opium use, and also showing how far opium use divided opinion in Marvell's day: some people "avoid it as present poyson", Primerose writes; others take it twice daily, in doses that "may doe much hurt".¹⁰¹

The recipe for this "Most Excellent Medicine" survives on the recto of a single manuscript leaf (fol. 129) bound in with the manuscript miscellany "SERMONS & C OF THE REV. ANDREW MARVELL".¹⁰² The recipe has to date attracted little scholarly attention. Its title is noted in the catalogue entry for C DIAM/1 compiled by Hull History Centre archivists in 2013, but the compilers have tentatively attributed the recipe to the hand of Marvell's father, the Reverend Andrew Marvell (1584–1641).¹⁰³ This, however, is clearly inconsistent with what the recipe itself reveals about its *terminus a quo* of early 1666. This later date of composition goes un-noted in the catalogue entry, and the significance of the date for our understanding of when the volume was bound in its current physical form has accordingly been overlooked. The catalogue entry assumes that the volume was compiled, and largely composed, by Marvell's father during the period in which he was resident in Hull (1624–41) as Master of the Hull Charterhouse, Marvell's boyhood home, and the description also assumes that the volume achieved its present physical state during the period of Marvell senior's career at Hull.¹⁰⁴

My detailed re-examination of the manuscript has confirmed that Marvell senior's hand can indeed be found on the recto or verso (or both) of 196 out of the total 323 manuscript leaves in the volume (60%), yet this leaves a little under half of the volume comprising writing in other, most likely later, hands.¹⁰⁵ I have identified at least five hands in C DIAM/1, including Marvell senior's (Hand C). The medicinal recipe (Hand E) shows a cursive italic hand characterised by loops, serifs, and other flourishes, consistent with a late seventeenth-century date and very different from Marvell senior's crabbed secretary hand (Figure 2). Of the other three hands, Hand A belongs to a later owner, John Warburton (c. 1745) (Figure 3); Hand B (responsible for copying the English translation of the Racovian Catechism on fols. 2 r-7 v and 221 r-322 v) is a readable, semi-cursive italic script, retaining some features of secretary hand and likely later than Marvell senior's; and Hand D, responsible for the Latin sermon "*Oro fratres et charitas vestra*" (fols. 119 r-28 r) is a formal, non-cursive, italic hand, probably contemporaneous with Marvell senior's secretary hand.

Things, to be considered about the Hospitall
 called Gods-House, & the disposing of its
 revenues.

All the rents belonging to said Hospitall, as by
 lawd is now demised, for an 118-19-8 $\frac{1}{2}$

The yearly charge, for stent & Certificates, as
 Kinge are now disposed, for an. 63-12-2

The surpluse, for de clare 5-7-6 $\frac{1}{2}$

For the employment of the to the benefit of poore
 people, & according to the intention of the
 founder we have erected & finished six
 beds or lodging rooms, for as many
 poore women; beside these the hospitall
 sustained formerly,

Whereas the twelve poore people we are
 already incorporated, have weekly fourteen
 pence apiece for each person, paid them; we
 is almost 63 a week more then the founda-
 tion allowes them; & as yet to be admitted
 whether of six women that are now to be
 admitted, should not be limited unto 32
 weekly, to make over plus ad mill make
 his weekly allowance amount to 40^s per an.
 as it is by the Charter of our foundation li-
 mitted; at the least for two or three yeares
 untill we have summe to buye some other
 needfull charges, hereafter mentioned. In
 mean while as the better places shall want
 they to be admitted into them, according to their
 seniority in the house, or precedence of election.

Figure 2. Marvell senior's secretary hand: "Things to be considered about [the] Hospitall called Gods House, & the disposing of its revenues" (c. 1626). C DIAM/1, fol. 114 r. Reproduced by permission of Hull City Archives, Hull History Centre, Hull.

The *terminus a quo* of 1666 for the writing of the manuscript recipe is also very probably a *terminus a quo* for the compilation and binding of the entire volume, which could not have been bound in its current form before this date. This is because the leaf on which the recipe is written (fol. 129) is a single, bound between two separate gatherings containing the Latin sermon on Philippians 1.9 (119 r-128 r) and the first English sermon on Ecclesiastes 8.2 (130 r-34 r) respectively, and written on paper of a different size, and from a different (newer) stock, to the two gatherings it is sandwiched between. Folio 129 is therefore highly likely to have been bound in with the rest of the volume only after the recipe was written on its recto (after 1665), for it makes little sense for this single to have been otherwise bound in, blank, during Marvell senior's lifetime, only for the recipe to have been written down later. The assumption that this volume could not have been compiled and bound in its current form before 1666 is also consistent with the evidence of discoloration on the end pages of several of Marvell senior's English sermons in the manuscript – for example, the Sermon on 2 Thessalonians 3.14, which is in a separate

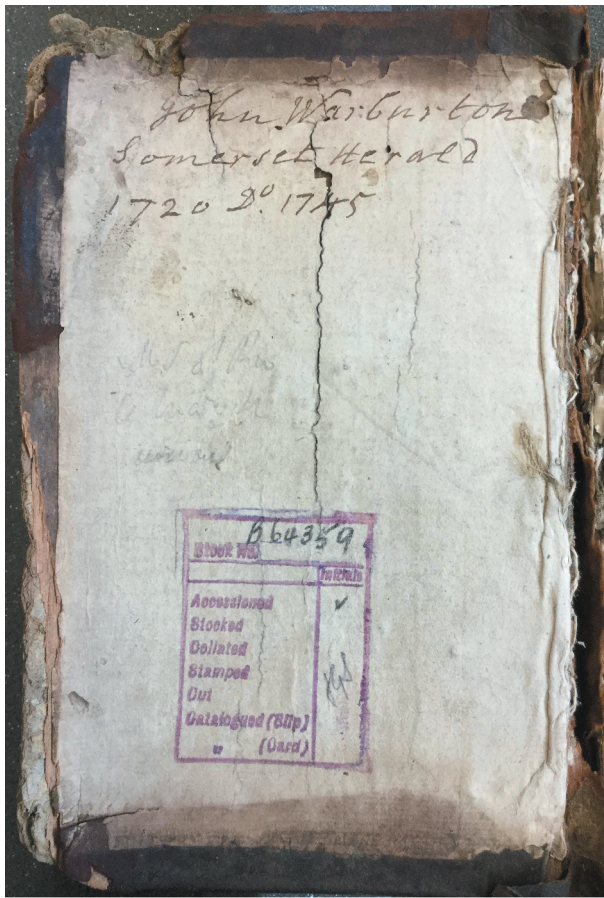


Figure 3. John Warburton’s autograph signature (1745). C DIAM/1, front pastedown. Reproduced by permission of Hull City Archives, Hull History Centre, Hull.

gathering of eight leaves (sixteen pages), concluding with two blank, ruled pages and a final, discoloured, and at one time folded, end page, blank but for a Greek quotation and the year “1624” in English and Latin, written in Marvell senior’s hand in the outer margin (Figure 4). The discoloured, folded end page strongly points to the fact that this and other of Marvell senior’s sermons were originally produced as separate, pocket-sized presentation copies, intended perhaps for circulation among Marvell senior’s parishioners and patrons, as is the case with another of Marvell senior’s surviving sermons, London, Inner Temple Library, MS 531.C, which begins with a letter in Marvell senior’s hand to its dedicatee, Anne Sadleir, dated 28 April 1627.¹⁰⁶ Other of Marvell’s sermons in C DIAM/1 are missing the final leaf or leaves of their gatherings, suggesting that many of the blank end pages were removed before binding.

If the physical evidence points to the fact that Marvell senior’s sermons and the other material in C DIAM/1, including the medicinal recipe, did once exist separately, then how did they come to be bound together to form the present volume, and who was responsible for compiling and binding this miscellany? Little is known about the provenance of the material in C DIAM/1 in the century between Marvell senior’s death in 1641 and the manuscript’s

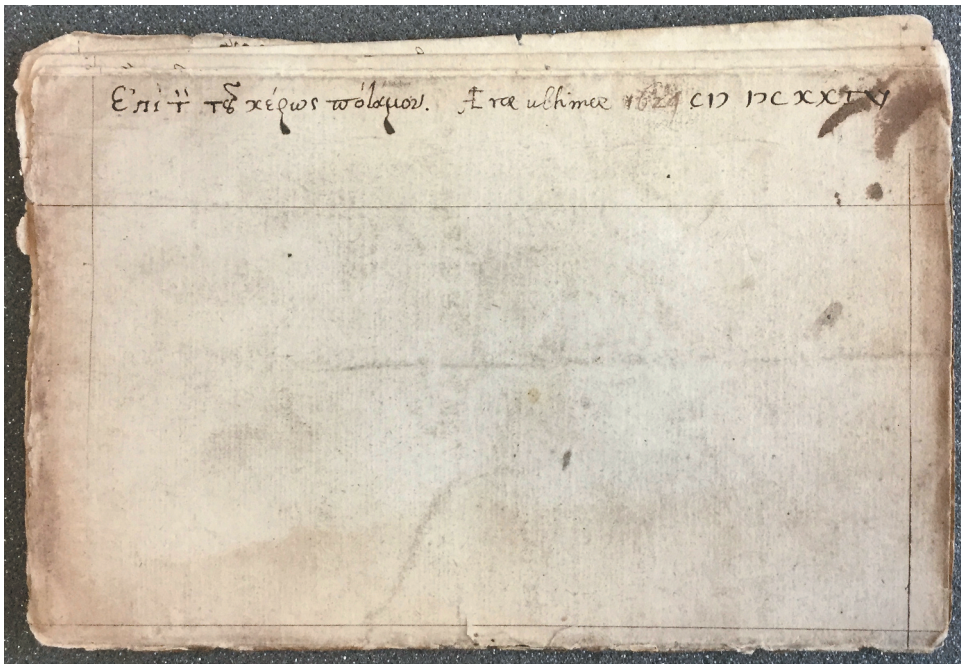


Figure 4. End page of Marvell senior's sermon on 2 Thessalonians 3.14, showing evidence of discolouration and folding (1624). C DIAM/1, fol. 180 v. Reproduced by permission of Hull City Archives, Hull History Centre, Hull.

ownership by John Warburton, Somerset herald (1682–1759), who signs and dates his acquisition of the manuscript – “do[no] 1745” – on the front pastedown (Figure 3). Warburton not only signs his name but adds biographical information on Marvell senior (fol. 1 r), an explanatory note (fol. 113 v), and a contents list at the end of the volume. He also adds inked foliations at the start of sermons, corresponding largely with the foliations he supplies for these items in the contents list, and so it is clear that the volume must have been bound in its current form either before or at the time of its ownership by Warburton in 1745. Upon Marvell senior's death in January 1641, his sermons are likely to have passed, either to his wife, Lucy Marvell, or directly to his son, the poet, who had certainly settled in Cowcross, London by February 1642, where his name appears among the Protestation Returns for the parish of St. Sepulchre's, but who according to local Hull tradition left Cambridge for Hull in the year of his father's death to take up a clerkship in the town.¹⁰⁷ After her husband's death, Lucy Marvell, née Alured, is assumed to have left the Hull Charterhouse to move in with her nephew, Colonel John Alured (d. 1653), who lived in the former Carthusian priory next door, and so Marvell senior's sermons might equally have passed from her to the Alureds, and thence to one of Colonel Alured's two sons, John (d. 1668) and Thomas Alured (d. 1708).¹⁰⁸

Although possible that Marvell took ownership of the sermons and the other material in C DIAM/1 written in his father's hand directly following on from his father's death in 1641, it is, on balance, more probable that Marvell senior's sermons ended the seventeenth century in Thomas Alured's possession. This is because it is Alured who provides the missing link to Warburton, which in turn helps explain how Warburton came to acquire the manuscript – bound or otherwise – in 1745. Several of the Alureds settled in

Beverley, near Hull, including Marvell's nephew, Thomas Alured, who was a bibliophile and book collector, and who bequeathed "my Divinity, Physick and other books [...] to the library of St Mary's Church, Beverley" upon his death in 1708.¹⁰⁹ Warburton owned property in Beverley and visited the town in 1745, adding his signature to a deed leasing one of his houses to one William Garforth on 29 October 1745.¹¹⁰ 1745 was also the year Warburton took ownership of C DIAM/1, and it is therefore possible he acquired the manuscript from the Alured collection of divinity books in the library of the then vicar of St Mary's, Beverley, Samuel Johnston, at this time. We know Marvell was friendly with his nephew, Thomas Alured, who was in London, at the inns of court, throughout the 1660s, and who went along with Marvell, and with Marvell's other nephew, Will Popple, on Saturday 10 April 1666 to witness the miracle cures of Valentine Greatrakes, "the Stroker", in company with the London physician, James Fairclough (d. 1685).¹¹¹ Thomas Alured's connections with Marvell in the 1660s certainly help explain why Alured might have taken a particular interest in Marvell's father's manuscript sermons later in life, and it may therefore have been Alured who added the recipe for "A Most Excellent Medicine", alongside the other manuscript material in later hands, to Marvell's father's papers at some point between 1665 and Alured's death in 1708.

Whoever once owned the recipe for "A Most Excellent Medicine", its survival in C DIAM/1 suggests that what Primerose claims in *Popular Errors* – that "cordiall remedies" containing mithridate were frequently used in Marvell's lifetime as a remedy for, and preservative against, fevers – was indeed correct. Primerose was among physicians, including John Jones, and the writer of *English Remedy*, to claim that the use of opium as a febrifuge was perfectly safe if taken in moderation, but not in excess. By contrast, in his *Pyretologia* Richard Morton cautions strongly against using opium in any dose to treat intermittent fevers, and he cites Marvell's death as a case study for the potentially fatal consequences of prescribing either mithridate or Venice Treacle for the treatment of tertian agues. Gee's translation of Morton's medical notes on Marvell's death has become the standard text for biographers of Marvell, but Gee's published translation is incomplete, because it omits the passage from Morton's *Pyretologia* immediately preceding the one Gee does include in print. This is a significant but overlooked omission, because in fact it is Morton's admonition against the use of opiates that frames his account of Marvell's death, and explains why he has chosen to include details of Marvell's death in *Pyretologia* at all. Reading the omitted passage, we learn that Marvell's death is here being cited as a cautionary tale, yet one that is not only, nor even primarily, a tale about the importance of treating tertian agues with quinine or Peruvian bark. Rather, Morton uses Marvell's death to point out that opiates like Venice Treacle were not just dangerous because inefficacious treatments for intermittent fevers in comparison to quinine, but dangerous because in themselves potentially deadly for patients suffering tertian, or malarial fevers. The relevant passage, with my own English translation from Morton's *Pyretologia*, is as follows:

Itidem *Diaphoretica*, praesertim *Opiata* (qualia sunt *Theriaca Mithridatium*, *Diascordium*, &c.) sicuti sub finem paroxysmi exhibita, absque manifestâ Indicatione, nihil ad curationem promovendam conducere observantur [...] Verùm *Opiata*, justam spirituum expansionem praepediendo, indèque gradum veneni deleterium multùm promovendo, paroxysmum *Febris Intermittentis* legitimum haud rarò in sunestam *Apoplexiam*, vel *Coma*, vel alium

aliquem peracutum & lethalem morbum convertunt. Hoc pacto celeberrimus ille vir *Andreas Mervill* . . . è vivis ante diem sublatus fuit. . . ¹¹²

[Likewise, there is no clear indication that Diaphoretics, particularly *Opiates* (as are *Theriaca Mithridatum*, *Diascordium*, etc.), do anything to promote a cure, as observations at the end of the paroxysm help show [. . .] Truly *Opiates*, rightly prepared, expand the spirits and promote a decline in the degree of poison, but used to cure the paroxysms of *intermittent fevers* they oftentimes induce *Apoplexy*, or *Coma*, or some other acute and deadly disease. In this manner was that most famous man *Andrew Marvell* carried off from among the living before his time . . .]

Morton acknowledges that opiates, although effective as poison antidotes, can also be potentially fatal when used to treat tertian agues, inducing apoplexies or comas. He then introduces Marvell's case study as an example of an opium-induced apoplexy ("In this manner"), strongly implying that, in his opinion, it was the opium in Marvell's Venice Treacle that was the cause of his apoplexy and death. Marvell might have escaped death "had a single ounce of Peruvian bark been properly given", but in the above passage Morton makes clear that it was an opiate, and not a lack of quinine, that actually killed him.

Conclusion

The Latin poem, "Dignissimo suo Amico Doctori Wittie", is one of two commendatory poems that Marvell wrote for the publication of Robert Wittie's translation of Primerose's *Popular Errours* (1651). In this poem, Marvell reveals his close familiarity with at least one of the "popular errors" Primerose tackles in his work: the popularity of tobacco, which "is growne so familiar in use, that there are few or none but take it", and which many take specifically as "a preservative against the Plague".¹¹³ Marvell writes that tobacco is indeed a preservative against one particular "base plague, the greedy passion for writing [Improba scribendi pestis, avarus amor]!", and this because smokers were burning the pages of books to create spills for their pipes.¹¹⁴ The poem playfully side-steps the question of tobacco's actual efficacy as a plague remedy, instead focusing on its medicinal value against the "disease [morbi]" of writing, but the poem's content reflects a careful reading of Primerose's text nonetheless.¹¹⁵ From his familiarity with Chapter 34 of *Popular Errours* – "Whether Tobacco be a preservative against the Plague or no" – Marvell would therefore have known that Primerose discommends tobacco but does encourage the use of "cordiall remedies" as a plague remedy – cordials like the Marvell manuscript's "Most Excellent Medicine against the Plague", containing opiates that expel the poison of the plague "by sweat".¹¹⁶ When Marvell turned to the very next chapter in *Popular Errours*, however, he would also have read Primerose's cautionary words about the "frequent use of cordiall remedies", as "Triacle, Mithridate, and the like", which when taken excessively, "doth most commonly more hurt than good".¹¹⁷ Had Marvell remembered Primerose's advice, in the book he had himself read and commended in print some three decades earlier, he might perhaps have decided against taking the cordial remedy that killed him in August 1678.

Long suspected of having been poisoned for his controversial writings against Charles II and the restoration church, Marvell was most likely killed, not by poison,

but by the poison antidote, mithridate. 1678 was an epidemic year for fevers in London, and all evidence suggests that there was as wide a variety of fevers symptoms in the capital – some malarial, others linked to dysentery or typhoid – as there were physicians promoting fever remedies and treatment regimens. In the case of treatments for what we now call malaria – almost certainly the disease Marvell was fighting at the time of his death – some late seventeenth-century physicians advocated the use of Peruvian bark, others opiates like mithridate and Venice Treacle. But these same physicians also acknowledged that quinine and opium were both highly contentious and potentially dangerous febrifuges: that opium was either considered a poison or a panacea, and was often used indiscriminately and excessively, and that Peruvian bark was expensive, “pernicious” if prepared incorrectly, and that it offered no long-term cure for intermittent fevers.

Against this background, Marvell’s doctor can hardly be blamed for choosing to administer an opiate rather than powdered Peruvian bark to his patient, nor for following the still-popular Galenic practices of bloodletting and sweating. The context of late seventeenth-century fever treatments in part exonerates Marvell’s “old conceited doctor” from the charge of medical incompetence, yet the causal links observed in this period between the use of opiates as a treatment for intermittent fevers and their role in the onset of apoplexies does suggest that Marvell’s death was iatrogenic and might easily have been avoided. The survival of a recipe for a mithridate-based cordial in the Marvell archives also points to the wider popularity of opium as a cure for, and prophylactic against, agues in Marvell’s day, and this raises questions about how far opium use may have contributed to wider increases in mortality rates from fevers in London and the other marsh regions in eastern England in which vivax malaria was endemic in the seventeenth century. Historical epidemiologists are right to question whether vivax malaria was really “the killer in the marshes” in Marvell’s day, but they have also overlooked the role of opiates as a factor in indirect causes of death from malaria in this period. The circumstances surrounding Marvell’s death strongly suggest that opiates like mithridate were the silent killers of malaria patients in late seventeenth-century England.

Notes

1. “A Dialogue between the Soul and Body”, ll. 11–18, in Smith, ed. *Poems*, 63.
2. “The Crosse”, ll. 13–14, in Wilcox, ed. *English Poems*, 562–6. Skwire, “George Herbert”, 21.
3. “Holy Sonnet 19”, ll. 12–13, in Carey, ed. *Major Works*, 288–9.
4. Bankoff, “Water Management”, 476; Dobson, *Contours*, 320–27; Reiter, “Shakespeare to Defoe”, 3.
5. Webb, Jr. *Humanity’s Burden*, 1–17.
6. Dobson, *Contours*, 319n125.
7. Dobson, *Contours*, 323–4; Hutchinson and Lindsay, “Malaria and deaths”, 1948; Reiter, “Shakespeare to Defoe”, 5–6; Teklehaimanot, “Weather-based predictions”, 9–10.
8. Dobson, “Marsh Fever”, 379–81.
9. See Dobson, “Marsh Fever”; Reiter “Shakespeare to Defoe”; Hutchinson and Lindsay, “Malaria and deaths”, 1947.
10. There is little research to date on the topic of Marvell and medicine or on medical humanities approaches to the poetry and prose writings. For analysis of smallpox and dropsy in the Latin epitaphs, see Mottram, “Brief Reflections”.

11. Griffin, "Venetian Treacle", 317–8.
12. von Maltzahn, *Chronology*, 214–5 (214).
13. *Ibid.*, 195.
14. Margoliouth, ed., *Letters*, 357.
15. von Maltzahn, *Chronology*, 203–4; Smith, *Chameleon*, 326.
16. Smith, *Chameleon* 332; von Maltzahn, *Chronology*, 210–13. Prior to July 1678, Marvell's last recorded visit to Hull had been over four years earlier, when in May-June 1674 he had travelled north to take part in a survey of the river Humber for Deptford Trinity House. See von Maltzahn, "Marvell, Writer", 23; *Chronology*, 153–4.
17. von Maltzahn, *Chronology*, 214. For the location of Marvell's house in Great Russell Street, since demolished, but originally standing to the south-west of what is now the main entrance to the British Museum, see Kelliher, "Some Notes", 139–43.
18. Thompson, ed. *Works*, III.483–4.
19. For Morton, see Trail, "Richard Morton".
20. Morton, *Pyretologia*, 96–7, trans. Gee, "Death of Marvell", 325–26.
21. Blégnny, *English Remedy*, C8r.
22. For discussion of Blégnny's authorship of *The English Remedy* see Cook, "Markets and Cultures", 135–36. The *Remedy* comes highly interpolated with Blégnny's comments and caveats and Cook shows how Blégnny in fact uses the publication of Talbor's cure as a marketing opportunity to promote the superiority of his and his patron D'Aquin's own particular remedy, "mixing the bark with opium" (p. 136).
23. Hutchinson and Lindsay, "Malaria and deaths", 1947. Dobson, "Marsh Fever", 371, who notes that Horace Walpole first introduced the term "mal'aria" into English in 1740.
24. Dobson, "Marsh Fever", 371; Hutchinson and Lindsay, "Malaria and Deaths", 1947.
25. For the introduction of quinine into England, see Webb, Jr. *Humanity's Burden*, 96–7, cp. Blégnny, *English Remedy*, B1v, B4r-v.
26. Dobson, "Marsh Fever", 373–4.
27. Morton, *Pyretologia*, 96–7, trans. Gee, "Death of Marvell", 326.
28. Dobson, "Marsh Fever", 377.
29. Dobson, "Marsh Fever", 376, cp. Reiter, "Shakespeare to Defoe", 3.
30. Bankoff, "Water Management", 476.
31. Dobson, "Marsh Fever", 379.
32. *Ibid.*, 379–81.
33. von Maltzahn, "Marvell, Writer", 25.
34. Manley, "Central England temperatures", 393. The monthly means for the 1670s are based on non-instrumental observations of wind and weather by John Gadbury (Westminster) and Elias Ashmole (Lambeth).
35. Allison, ed. *Victoria County History*, I: 90–171.
36. Simpson, *Short essay*, title page.
37. Simpson, *Short essay*, A7v; Simpson, *Two Small Treatises*, B2v.
38. Creighton, *History of Epidemics*, 334.
39. Brasil *et al.* "Unexpectedly long incubation".
40. Reiter, "Shakespeare to Defoe", 3.
41. Evelyn, *Fumifugium*, B2r.
42. *Ibid.*, B1v.
43. Talbor, "Rational account", B8v.
44. *Ibid.*, B8v, C1r.
45. *Ibid.*, A4v.
46. Evelyn, *Fumifugium*, C1v.
47. *Ibid.*, C4v.
48. *Ibid.*, D1r.
49. Reiter, "Shakespeare to Defoe", 5. For Lambeth and malaria, see also Dobson, *Contours*, 321.
50. Gibberd, *Lambeth Marsh*.

51. For discussion of whether or not Cromwell suffered from malaria, see Bruce-Chwatt, "Myth", 133–4. For the death of James VI and I, see Croft, *King James*, 127–8, and Lockyer, *Buckingham*, 233–4. For Charles II's 1679 fever, see Siegel and Poynter, "Robert Talbor", 84–5.
52. Creighton, *History of Epidemics*, 334.
53. Simpson, *Two Small Treatises*, B1v.
54. *Ibid.*, B1v, B2r, B6r, B6v.
55. Dobson, *Contours*, 470 passim.
56. Hutchinson and Lindsay, "Malaria and deaths", 1948.
57. Dobson, "Marsh Fever", 376, 375, 375.
58. Hutchinson and Lindsay, "Malaria and deaths", 1949, 1950.
59. Reiter, "Shakespeare to Defoe", 6.
60. Shute, P. "Failure to infect", cited in Hutchinson and Lindsay, "Malaria and deaths", 1947; Manley, "Central England", 393; Teklehaimanot *et al.*, "Weather-based predictions".
61. Simpson, *Short essay*, A6v.
62. Achan *et al.*, "Quinine".
63. Morton, *Pyretologia*, 96–7, trans. Gee, "Death of Marvell", 326.
64. Dobson, *Contours of Death*, 316. For nosology in eighteenth-century Europe, see Cook, "Markets and Cultures", 129.
65. Morton, *Pyretologia*, 96–7, trans. Gee, "Death of Marvell", 325–26.
66. *Medicæ Dissertationes Tres*, 1 page. Although Morton's name is not identified on the printed sheet with the three medical works advertised, R.R. Trail notes papers "among the Rawlinson MSS in the Bodleian Library" that identifies Morton as author of the advertisement and works promoted therein (Trail, "Richard Morton", 169).
67. Morton, *Pyretologia*, 96. For Morton's links with the Foley and Harley families, see Trail, "Richard Morton", 166; for his links with Baxter, a friend both of Morton's father, Robert Morton, and uncle, Thomas Foley, see Wright, "Morton, Richard".
68. For Marvell's correspondence with Harley, see Margoliouth, ed. *Letters*, 328–29, 344–46, 351–57; Smith, *Chameleon*, 265, 305.
69. Gee, "Death of Marvell", 326.
70. *Ibid.*, 326.
71. Kelliher, "Marvell, Andrew", para. 24; von Maltzahn, "Marvell, Writer", 25; von Maltzahn, *Chronology*, 213; Smith, *Chameleon*, 333.
72. Talbor, "Rational account", A4v, C8r.
73. *Ibid.*, D4v.
74. See Trail, "Richard Morton", 166–74 (169); also Smith, *Chameleon*, 333.
75. Cook, "Markets and Cultures", 132–34; Reiter, "Shakespeare to Defoe", 6.
76. Cook, "Markets and Cultures", 133–4.
77. Blégny, *English Remedy*, B4r–v.
78. Dobson (*Contours*, 316) also notes that quinine "was expensive; it was in limited supply; it was frequently adulterated or used indiscriminately" in this period.
79. See Anon., *Meeting accidentally*, and Blackstone, *Modest Reply*. For Goodall, see Dewhurst, "Some Letters".
80. For Short, see Dobson, "Talbor", para. 3.
81. Maynwaringe, *Ignota febris*, 69, cited in Skwire, "George Herbert", 4. This observation is also noted by Blégny, *English Remedy*, C3r.
82. Simpson, *Short essay*, A7r.
83. *Ibid.*, A7r; A3v.
84. *Ibid.*, B4v.
85. Dobson, *Contours*, 316.
86. Simpson, *Short essay*, A3r. Talbor, *Rational account*, C1r. See also Primerose, *Popular Errours*, 112, who writes that intermittent fevers "proceed from divers humours, cholericke, plegmaticke, melancholick".
87. Simpson, *Short essay*, A4r.

88. Jones, *Mysteries*, 218.
89. Blégnny, *English Remedy*, H2v.
90. *Ibid.*, G8r, H8v.
91. Primerose, *Popular Errours*, 388–89. For Marvell’s connections with Witty, and possibly also Primerose, see Smith, *Chameleon*, 89–90; Raylor, “Dr Witty”; Mottram, “Tide of Humber”, 83.
92. Primerose, *Popular Errours*, 391.
93. Blégnny, *English remedy*, H8r.
94. Primerose, *Popular errours*, 391. Culpeper, *English Physitian*, V4v.
95. Griffin, “Venetian treacle”, 318.
96. *Ibid.*, 317.
97. In *Journal*, Daniel Defoe notes that the first cases of plague appeared in London, in the Middlesex parish of St Giles-in-the-Fields, in December 1664 (p. 5), and he goes on to note that the plague outbreak had all but abated in London by December 1665 (p. 178). The recipe in C DIAM/1 could not, therefore, have been written before January 1666 at the earliest, although the fact that the writer speaks in the past tense about the plague (“when the Plague was in London”) suggests a date later in 1666 as a more likely *terminus a quo*, given that there must have remained uncertainty for several months after December 1665 about whether the plague really had abated in the capital.
98. Primerose, *Popular Errours*, 341.
99. *Ibid.*, 342.
100. *Ibid.*, 342.
101. *Ibid.*, 388–9, 342.
102. Hull History Centre, C DIAM/1.
103. Hull History Centre, “Catalogue entry”.
104. *Ibid.*
105. Marvell senior is responsible for writing: the ten English sermons (fols. 130 r-34 r, 135 r-42 r and 143 r-46 r, 147 r-52 r, 152 v-57 v, 158 r-63 v, 165 r-72 v, 173 r-79 r, 181 r-200 v, 201 r-05 v, 207 r-11 r), the financial accounts of the Hull Charterhouse, “Things to be considered” (114 r-18 r), the “Complaint against the perverse behaviour of some of the Inhabitants of Kingston upon Hull” (218 r-220 r), and the Latin commentary (8 r-9 v) and account of Christ’s life, “Historia de vita” (10 r-113 r), together with Latin and Greek tags on 142 v and 180 v – a total of 196 out of 323 manuscript leaves (60%)
106. For discussion of Marvell senior’s sermon for Anne Sadleir, “Israel and England parallel’d”, see Smith, *Chameleon*, 19–20.
107. Burdon, “Marvell after Cambridge”, 45–6; von Maltzahn, *Marvell Chronology*, 28.
108. Burdon, “Second Mrs. Marvell”, 43.
109. Burdon, “Marvell and his Kindred”, 383, citing Borthwick Institute, York, Will of Thomas Allured (Harthill Deanery, 1708).
110. Hull History Centre, U DDCV 2/3/54.
111. Greatrakes, *Brief Account*, 83–85; von Maltzahn, *Marvell Chronology*, 92. For Fairclough, see Elmer, *Miraculous Conformist*, 89 and appendix 2.
112. Morton, *Pyretologia*, 96–7.
113. Primerose, *Popular Errours*, 325, 336.
114. Marvell, “Dignissimo”, l.6, in Smith, ed. *Poems*, 175–7 (Smith’s translation). For the use of book paper to make spills for lighting pipes, see note to l.11.
115. Marvell, “Dignissimo”, l.7, in *Ibid.*, 175–7 (Smith’s translation).
116. Primerose, *Popular Errours*, 339.
117. *Ibid.*, 341.

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