

**PART 3**

*Galen's Περὶ Ἀλυπίας and the History of the  
Roman Empire*





## Galen and the Plague

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Galen's *περι ἀλυσίας* contains two references to the great plague which characterised his times, now usually known as the 'Antonine Plague'. Neither is sustained or substantial, the new information offered is slight and somewhat slippery; but these passages make an important point none the less. Both serve to emphasise what might be called the qualitative impact of the pestilence, as distinct from its quantitative effects on the economy and population, the political integrity and resilience, of the Roman Empire. These have been the focus of much recent debate, and there is a lot at stake in the discussions, inconclusive as they have been so far; but other key issues – the personal toll of the plague, the miasmatic way in which it touched everything, became embedded in everyday life and record, even structured time – have been rather overlooked in the search for data, and the contest between models.<sup>1</sup> Galen's struggle against distress, in this and other areas, offers an opportunity to redress the balance somewhat, put the spotlight back on questions of what it was like to live through repeated waves of pestilence, not just as a physician, but also a man with friends and household dependents, a man located at the centre of Empire, in close proximity to imperial power.

The first move Galen makes in setting up the main premise of the *περι ἀλυσίας* – that he is a man in such admirably firm control of his response to potentially upsetting events, to a variety of losses, that he can usefully instruct others in emotional management – is in reference to the plague.<sup>2</sup> Its presence provides a natural frame for any such exposition, and one particular occurrence offers a good case of his exemplary conduct in this respect. For it was witnessing Galen's imperturbability despite the death of almost all the slaves he had in Rome, 'during a major outbreak of the long-lasting plague', which

1 Launched by R. Duncan-Jones' key article, 'The impact of the Antonine Plague', *JRA* 9 (1996), 108–136, the quantitative bibliography is now extensive. See e.g. E. Lo Cascio (ed.), *L'impato dell' 'Peste Antonina'* (Bari: Edipuglia, 2012); and most recently, Colin P. Elliott, 'The Antonine plague, climate change, and local violence in Roman Egypt', *Past and Present* 231 (2016), 3–31.

2 The introductory sequence is Gal. *Ind.* 1–7.

had initially impressed the unknown addressee of this epistolary text.<sup>3</sup> He had heard other stories of non-disturbance in the face of misfortune too, and, now, reports of Galen's unchanged demeanour and behaviour after an even worse disaster had reached him, generating a keen desire to discover how Galen does it. What training and teaching kept him steady following the devastation of the great fire which had consumed all the possessions he kept in the alleged safety of the substantial storehouses on the Sacred Way? Possessions which included many, many valuable, valued, and even irreplaceable books and things which had all burned, without apparently troubling Galen.

It is, indeed, in enumerating these destroyed possessions, in providing exquisite detail about the worth, the meaning, of all he has lost, that Galen makes his second reference to the plague.<sup>4</sup> Amongst his massive losses was perhaps the best collection of pharmacological recipes in the whole Roman world, accumulated through both active endeavour and the workings of fate. These workings had seen his fellow-citizen and student, Teuthras, obtain from another Pergemene physician – Eumenes – an outstanding compilation of remedies and then leave them to Galen, 'having died in the first outbreak of the plague' at Rome.<sup>5</sup> The timing of this inheritance, 'a little after' (μετ' ὀλίγον χρόνον) Galen first came to the imperial capital himself, may be significant in terms of broader pestilential chronology, but there are also more particular points to make, about both the casualness and the poignancy of this plague reference. There is a sense in which the course of this epidemic disease and Galen's career share a temporal structure, and combine to produce patterns of meaning for him.

These references are best understood, however, as part of a larger Galenic package, alongside Galen's other engagements with the 'great plague', and, indeed, against the background of more general historical descriptions of the disease, its profile and patterning. So, this is what follows, though necessarily in a targeted rather than total way. First a rough outline of the origins and spread of the 'Antonine Plague', as reported in a range of sources, including Galen, will be sketched out, then there will be further discussion of the disease itself, a topic on which Galen also has a lot to offer. Too much, indeed to cover

3 Gal. *Ind.* 1: κατὰ τινα τοῦ πολυχρονίου λοιμοῦ μεγάλην ἐμβολήν (2, 6–7 BJP). Translations are my own unless noted. I have made much use of V. Nutton's translation, notes and introduction to the text, however (in P. Singer (ed.), *Galen: Psychological Writings* (Cambridge: Cambridge University Press, 2013), 43–106); as well as those in the main edition I have used: V. Boudon-Millot, J. Jouanna and A. Pietrobelli (ed., trans. and comm.), *Galen: Ne pas se chagriner* (Paris: Les Belles Lettres, 2010).

4 This sequence is Gal. *Ind.* 31–35.

5 Gal. 34–5: ἀποθανόντων ἐν τῇ πρώτῃ τοῦ λοιμοῦ καταβολῇ (12.15–16 BJP).

in this essay, the main aim here is to illustrate where Galen puts the emphasis in this respect, what is important to him about the plague as a medical event, before considering the identity of the disease in modern terms. Finally, the focus will return to the specific contributions of *περὶ ἀλυπίας* to this pestilential story, to the question of the emotional impact of the plague, to matters of sensibility and distress.

## 1 Profile of a Plague: Origins and Outbreaks

The accounts of the ‘Antonine Plague’ provided in surviving historical texts are both patchy and programmatic, and though there is some roughly contemporary reporting, most are much later than the events they describe. Still, they are reasonably consistent in outline.<sup>6</sup> The pestilence originated in the East, where Lucius Verus (co-emperor with Marcus Aurelius) was campaigning against the Parthians in the mid-160s AD. A moment of military indiscipline, probably of impiety, in a temple in Babylonia as the conflict was coming to a successful conclusion is evoked as the immediate cause in some sources; though others omit any mention of a specific trigger for disaster.<sup>7</sup> All agree, however, that Verus’ troops brought disease back west with them on their victorious return. Rome, Italy, and the provinces were all affected, and the army was particularly badly hit; a concern with Roman manpower is thematised by many of the authors.<sup>8</sup> In his fourth-century summary of Roman history, for example, Eutropius asserts that the outbreak of plague following the Persian victory under Marcus Aurelius was so severe that, ‘in Rome and throughout Italy and the provinces most people, and almost all soldiers in the army, were afflicted by weakness’.<sup>9</sup> This was especially dangerous since the empire was now facing a threat along its north-eastern frontiers, and, allegedly, had to scramble to

6 An outline already much discussed, see e.g. Duncan-Jones (1996); A. Marcore, ‘La peste antonina. Testimonianze e interpretazione’, *Rivista storica italiana* 15 (2002), 801–819; A. Marino Storchi, ‘Una rilettura della fonti storico-letterarie sulla peste di età antonina’, in Lo Cascio (ed: 2012), 29–61; and D. Gourevitch, *Limos kai Loimos: A Study of the Galenic Plague* (Paris: Éditions de Bocard, 2013), 77–127.

7 Ammianus Marcellinus 23.6.24 and SHA *Verus* 8.1.1–2 both mention a temple episode; the abbreviated reference at Cassius Dio, *epit.* 71.2.4 does not; see also Luc. *Hist. Conscr.* 15.

8 On the plague’s reach and military focus see e.g. Ammianus Marcellinus 23.6.24 and Orosius 7.15.5 and 27.7.

9 Eutropius, *Breviarium* 8.12: Romae ac per Italiam provinciasque maxima hominum pars, militum omnes fere copiae languore defecerint.

mobilise sufficient forces for the Marcommanic Wars which open at the end of the AD 160s.<sup>10</sup>

The fighting with Parthia was concluded by autumn AD 165, and Verus likely left in spring 166, arriving back in Rome by the end of the summer. Some of his army might have gone ahead of him, or, indeed, the movement of troops and disease might not have been quite so perfectly matched as the historical accounts assert, retrospectively more closely aligned than at the time; for Galen seems to claim that the plague reached Rome before the emperor. He states, in *On Prognosis*, that he brought his first (roughly four-year) stay in the imperial capital to a clandestine close before Verus' return from the East, since he feared that the emperors would then demand his attention.<sup>11</sup> While, in *On my own Books*, Galen asserts that his departure was, 'when the great plague began', in response to that beginning.<sup>12</sup> Hunain's Arabic translation fills the lacuna in the Greek after Galen left Rome for his homeland with the claim that no drug of sufficient strength could be found to combat this plague, as it spread so widely before diminishing.<sup>13</sup>

These statements, appearing in treatises composed perhaps two decades apart, are, like much of Galen's biographical self-reporting, inconsistent but not seriously contradictory. The events – the onset of the 'great plague', Verus' return, and Galen's departure – happened at around the same time, and one is prioritised in one account, one in the other, with some flexibility about the precise sequence. Still, rather frustratingly, this direct witness to the initial onset of pestilence in Rome is indecisive about its timing. A point further emphasised by the reference in *περι ἀλυπίας* already mentioned, to Teuthras' demise in the 'first outbreak of the great plague' and 'not long' after Galen's own entrance on the Roman scene. The two assertions are somewhat at odds, but, again, the best way to reconcile them is by recourse to the imprecision of Galenic memory, rather than anything more radical or determinate. Still, what is clear is that the 'great plague' did have a beginning, there was a definite first episode in the sequence; and that it was associated in Galen's mind with his own first stay in the imperial capital, and with medical challenge.

There is also the suggestion that the episode of pestilence (νόσος λοιμώδης) vividly described by the orator Aelius Aristides in his *Sacred Tales* should be

10 See also e.g. SHA *Marcus* 21.6 and Orosius 7.15.6.

11 Gal. *Praen.* 9.5 (118.16 CMG v 8,1). On Galen's biography generally, see S. Mattern, *The Prince of Medicine: Galen in the Roman Empire* (Oxford: OUP, 2015), with discussion of the plague at 193–205.

12 Gal. *Lib. Prop.* 1.16: ἀρξαμένου τοῦ μεγάλου λοιμοῦ (139.24–27 BM).

13 French translation at Gal. *Lib. Prop.* 1.16 (139.52–62 BM), and see notes 7 and 8 (189–190 BM).

located in the suburbs of Smyrna in the summer of AD 165.<sup>14</sup> If this is right, and regardless of whether Aristides' own claims to have almost followed many of his neighbours and slaves, not to mention his livestock, to the grave are to be believed, then this would indicate that the plague spread ahead of any post-war military movements.<sup>15</sup> So, perhaps the Parthian campaign contributed to, exacerbated, an outbreak of pestilence which was already developing in the East, and would have hit Smyrna anyway; rather than being the primary cause and driver of the epidemic. Soldiers passing through on their way to the fighting, dragging resources with them, added to some displaced civilians, would all have disruptive effects, increasing both the possibilities for transmission of and susceptibility to disease. The subsequent relocation of these troops then helped make this plague a more decisively and severely imperial affair than it would otherwise have been: both geographically and militarily.

The next outbreak of plague Galen encounters certainly fits this pattern. Imperial demand brought him back to Italy in late AD 168 (having spent only a couple of years away in Pergamum).<sup>16</sup> He was summoned to attend on the emperors in their winter quarters, in Aquileia, between northern campaigns against various Germanic peoples (including the Marcomanni) who had crossed the Danube and threatened Roman territory. Two new legions had been raised, from Italy, but it seems likely that troops who had fought in Parthia were also involved, they certainly would be.<sup>17</sup> It had been predominantly Danubian units which had been dispatched East, and were now back defending their previous patch. Galen's movements were, however, again tracked by those of epidemic disease:

On my arrival in Aquileia the plague attacked more destructively than ever before, so the emperors fled immediately to Rome with a small force of men. For the rest of us, survival became very difficult for a long time. Most, indeed, died, the effects of the plague being exacerbated by the fact that all this was occurring in the middle of winter.<sup>18</sup>

14 Aelius Aristides, *Or.* 48.38–45. The chronology is provided by C. Behr, *Aelius Aristides and the Sacred Tales* (Amsterdam: Hakkert, 1968), 96–97, as part of his complete account of Aelius life and career, and while plausible is far from certain.

15 Gourevitch is sceptical, arguing that Aristides' eagerness to remain the centre of pathological attention cannot conceal the fact that his symptoms are a poor match for those of the plague (2013: 62–5).

16 *Gal. Lib. Prop.* 3.1 (141.17–21 BM); and see Mattern (2015), 195–7.

17 To replace legions destroyed in Parthia prior to Verus' campaign, though plague was also having an effect.

18 *Gal. Lib. Prop.* 3.3: ἐπιβάντος οὖν μου τῆς Ἀκυλίας κατέσκηψεν ὁ λοιμὸς ὡς οὐπω πρότερον, ὥστε τοὺς μὲν αὐτοκράτορας αὐτίκα φεύγειν εἰς Ῥώμην ἅμα στρατιώταις ὀλίγοις, ἡμᾶς δὲ τοὺς

Flight did not save Lucius Verus who died on the road back to Rome, reportedly of apoplexy, and was given full funeral honours, with apotheosis, by Marcus Aurelius in the imperial capital.<sup>19</sup>

The earliest outbreak of this plague recorded in Jerome's *Chronicle*, the universal chronology he compiled in the late fourth-century, is listed for AD 168, when, 'A plague (*lues*) took hold of many provinces, and affected Rome'.<sup>20</sup> Four years later things were even worse, 'There was such a great plague throughout the whole world that the Roman army was reduced almost to extinction'.<sup>21</sup> It is tempting to move Jerome's dating scheme forward a little, to align it with Galen's first and second episodes, but outbreaks certainly continued, at local and more regional level, for decades thereafter. The somewhat wayward narratives of the Marcommanic Wars provided by the later imperial biographies of the *Historia Augusta* interweave pestilence and campaigning up until Marcus Aurelius' death on the frontier in AD 180.<sup>22</sup> Plague is also a regular presence in Galen's prolific literary output from this period, often mentioned though never the focus of attention; and it will remain a feature of his writing at least into the 190s. Whether this 'long-lasting' plague persisted into the mid-third century AD, when further episodes of pestilence are recorded in Egypt and North Africa, Rome and the cities of Greece, or whether this was a new disease event, is open to debate.<sup>23</sup> Many of these Galenic references are to pestilence in general, and, even if a particular case or situation is mentioned, it is often not located in time and space. The household depredations cited in *περὶ ἀλυπίας* occurred in Rome, for instance, but when is not specified, the addressee was there and need not be reminded. One other major outbreak of the plague in the imperial capital is specifically described, in the historical narratives of Cassius Dio and Herodian, just a few years before the great fire which destroyed so many of Galen's possessions in AD 192. Both authors were recording events in their own life-times, and provide numerous interesting details, if also emphasising the programmatic nature of their historical projects as they do so. Neither had warm feelings towards Commodus, which puts a particular spin on any disasters which may have occurred in his reign; Dio, indeed, explicitly condemned

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πολλοὺς μέλις ἐν χρόνῳ πολλῶ διασωθῆναι πλείστων ἀπολλυμένων οὐ μόνον διὰ τὸν λοιμὸν ἀλλὰ καὶ διὰ τὸ μέσου χειμῶνος εἶναι τὰ πραττόμενα (142.5–11 BM).

19 Apoplexy: SHA *Verus* 9.11; apotheosis: Gal. *Lib. Prop.* 3.4.

20 Jerome, *Chron.* Helm p.287: *lues multas provincias occupavit Roma ex parte vexata.*

21 Jerome, *Chron.* Helm p.288: *tanta per totum orbem pestilentia fuit ut paene usque ad interneccionem Romanus exercitus deletus sit.*

22 SHA, *Marcus* 13.3, 17.2 and 21.6.

23 See K. Harper, 'Pandemics and passages to late antiquity: rethinking the plague of c.249–270 described by Cyprian', *JRA* 28 (2015), 223–260.



him as 'more harmful' (χαλεπώτερος) to the Romans than any disease.<sup>24</sup> Dio's claim that this epidemic episode was the worst he had ever come across needs, therefore, to be read with this in mind, as also his supporting statement that 'two thousand often died in a single day' in the city.<sup>25</sup> The additional allegation that death by disease was supplemented by large scale poisoning, performed by paid criminals equipped with sharp needles and a deadly compound, is also there for a specific purpose. The same thing happened under Domitian, Dio notes, implying, of course, a broader repetition of tyrannical rule.<sup>26</sup>

That there was indeed a severe plague outbreak in Rome around AD 190 is, however, confirmed by Herodian.<sup>27</sup> All Italy was affected, but especially Rome, on account of its populousness and openness: 'great destruction of both men and livestock resulted'.<sup>28</sup> Physicians advised Commodus to flee to a safer location, and advised those who remained in the city to make copious use of incense and other aromatics. This would either keep the corrupt air out of their bodies, or overcome any that did manage to enter. The tactic failed for both humans and the animals they shared their space with. The situation was made even worse by famine and a corrupt imperial freedman, Cleander, who stands in for an absent emperor in the narrative. Plagues are, of course, prime sites for moralising, and both Dio and Herodian take full advantage; but severity and periodicity are also emphasised, as well as a focus on Rome. In addition, Herodian has physicians play a role in his version of events, albeit not a particularly positive one, and, it is a more medical perspective that will be engaged with now. What kind of a disease was it that had such a devastating effect on Rome, Italy and the provinces?

## 2 Symptoms of a Plague

As with all the major epidemic events of antiquity, there has been much debate about the identity of the disease implicated in the Antonine plague.<sup>29</sup> Though the literary record is rich and diverse, and includes contributions from a medical writer – Galen – the problems in such an enterprise are acute; at least in the absence of direct archaeological evidence for the relevant pathogens, such as

24 Dio, *epit.* 73.15.1.

25 Dio, *epit.* 73.14.3: δισχίλιοι γοῦν πολλάκις ἡμέρας μίας... ἐτελεύτησαν.

26 Dio, *epit.* 73.14.4.

27 Herodian 1.12.1–2.

28 Herodian 1.12.1: πολλή τέ τις φθορά ἐγένετο ὑποζυγίων ἄμα καὶ ἀνθρώπων.

29 Summarised at Gourevitch (2013), 67–71.

has been forthcoming for various later outbreaks of plague, for instance.<sup>30</sup> The historical accounts do not mention any symptoms, while Galen's references are scattered and unsystematic, either too specific or too general to bear much diagnostic weight. He does not provide a complete description, nor any sustained analysis, of the plague as disease anywhere in his surviving oeuvre. All ancient literary engagements with illness occur, moreover, on their own terms, shaped by both contemporary pathological interests and assumptions and the rhetorical project of the writing concerned.

Despite this, a scholarly consensus has, somewhat surprisingly, been established around the identification of the Antonine plague as smallpox, based largely on Galen's testimony, as most influentially interpreted by the Littmans in a key article of 1973.<sup>31</sup> There are, however, real difficulties with this proposed match, and further complications have been introduced by the most recent genomic work on the variola virus, the causative agent of smallpox, as well as new phylogenetic studies of one of the other pestilential contenders, measles. These points will be developed in the next section of this essay. The main aim here is to show the consistencies in Galen's own approach to the plague, to allow what mattered to him to come through first.

The starting point for Galen's approach is a definitional one. Plague, *loimos* in Greek, is not a disease in itself, like *phrenitis* or *podagra*, rather, as Galen himself explains, it is a term applied to an epidemic (*ἐπιδημιον*) disease event – that is when lots of people in a single place are stricken in the same way at the same time – which is particularly sustained and deadly.<sup>32</sup> Plague is an extreme epidemic, caused by the condition of the air, as any illness which simultaneously affects so many sharing the same location must be: or, as Galen insists, caused by the interaction between the surrounding air and individual constitutions.<sup>33</sup> Such an aetiology can support a range of ailments. The ambient at-

30 For the initial pathogenic identifications see: K. I. Bos et al., 'A draft genome of *Yersinia pestis* from victims of the Black Death', *Nature* 478 (2011), 506–510; and M. Harbeck et al., 'Yersinia pestis DNA from skeletal remains from the 6th Century AD reveals insights into Justinianic Plague', *PLoS Pathogens* 9, no. 5 (2013): e1003349; for some wider reflections on the intersections of genetics and history see M. H. Green (ed.), *Pandemic Disease in the Medieval World: Rethinking the Black Death. The Medieval Globe* 1 (2014).

31 R. J. and M. L. Littman, 'Galen and the Antonine plague', *AJP* 94 (1973), 243–255; followed by many since, including almost all contributors to Lo Cascio (ed: 2012), and Gourevitch (2013), 53–75; as well as more generally. 'It is widely agreed to have been smallpox', says R. Sallares: 'Ecology', in W. Scheidel, I. Morris and R. Saller (eds), *The Cambridge Economic History of the Greco-Roman World* (Cambridge: Cambridge University Press, 2007), 37.

32 Gal. *Hipp. Epid.* III 3.21–22 (CMG V 10.2.1 120.5–19); *HVA* 1.8 (CMG V 9.1 122.18–123.17).

33 Gal. *Diff. Feb.* 1.6 (7. 289–90 K); and see J. Jouanna, 'Air, miasma and contagion in the time of Hippocrates and the survival of miasmas in post-Hippocratic medicine (Rufus of

mosphere, what is breathed and inhabited, can disrupt somatic balance and functioning in a host of ways.

It is this basic understanding of *loimos*, very widely shared by physicians and patients alike, which shapes Galen's fragmented literary engagement with pestilence.<sup>34</sup> Or, to be precise, it is the combination of this abstract notion with the concrete advent of plague in his life and world, which spreads *loimos* further, and more thickly, across his oeuvre. The pestilential presence makes his dealings with the phenomenon within the overall categorical architecture of the medical art, in its pathological, therapeutic, and prognostic spaces, more direct and pressing, while also forming part of his biography and practice. When drawing on his own experience to support his arguments about health, disease, and cure, the plague is unavoidably there, as the passage at the centre of most modern diagnostic efforts shows very clearly.

This is the most medically detailed plague episode in Galen's extant works, which appears in the fifth book of the massive *On the Method of Healing*. This book provides systematic coverage of the treatment of wounds, sores, and ulcers; that is of a particular grouping of conditions arising from the breakdown of bodily continuity, one of Galen's fundamental disease types in this text, types around which the treatise is organised. Case histories are key to the exposition within these larger categories, however, as they allow Galen to demonstrate especially vividly the therapeutic pay-off from his superior understanding of human illness and injury in all its forms.<sup>35</sup> The particular point of intersection between the plague and somatic discontinuity is in respect to ulcers (*helkoi*) which occur inside the larynx, trachea, and passages into the lungs, an eventuality which is serious and challenging, but, crucially, treatable. Indeed, Galen claims to have enjoyed quite considerable success in this area, following a specific incident.

In particular, I discovered the cure of them, in that place, at the time of the great plague (would that it will at some point cease), when it first came upon us. At that time, a young man broke out in ulcers all over his whole body on the ninth day, just as did almost all the others who were saved. On that day there was also a slight cough. On the following day,

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Ephesus, Galen and Palladius'), in his collected essays, *Greek Medicine from Hippocrates to Galen*, trans. N. Allies (Leiden: Brill, 2012), 122–136.

34 See also [Gal.], *Def. Med.* 153 (19.391–2 K); and, with some shifts of emphasis, the summary chapter on plague in the Greek encyclopaedic tradition, from Rufus of Ephesus: *Orib. Syn.* 6.25; Aetius 5.95; Paul of Aegina 2.35.

35 On case histories in Galen see: S. Mattern, *Galen and the Rhetoric of Healing* (Baltimore: John Hopkins University Press, 2008).

immediately after he bathed, he coughed more violently and brought up with the cough what they call a scab ...<sup>36</sup>

This indicated to Galen that the young man was ulcerated inside and out, including somewhere in his airways, and, though reaching those passages is always tricky, he prescribed treatment accordingly, in dialogue with the patient, himself not 'inexperienced' (ἄπειρος) in medical matters.<sup>37</sup> After three more days in Rome, 'where the plague still raged' (ἐνθα περ ἐλοιμωξεν), the youth boarded a sea-ward ship, disembarking four days later at Stabiae, on the Bay of Naples. There he took advantage of the wondrous local milk supply, to good effect. For, following a lengthy explanation of why the milk produced at Stabiae is so outstanding, Galen concludes the case: 'That young man who had a ulcer in the trachea from the pestilential disease became healthy, and others after him likewise.'<sup>38</sup> It is only here, then, that the plague passes from narrative frame to pathological cause, from a means of situating the case in time, as well as space, to aetiology.

This general pestilential theme is then further developed as the sequence continues, for Galen understands the ulceration in these cases as part of a wider set of beneficial somatic responses to the plague.

Those easily restored to health from the plague seem to me to have been previously dried and purged in respect to the whole body, for vomiting occurred in some of them and the stomach was disturbed in all. And, in the same way, in those already purged who were going to be saved, dark pustules (*exanthemata*) appear clearly over the whole body, in most ulcerous, in all dry. And it was obvious to the observer that, what was left of the blood which had been putrefied during these fevers, had, like a kind of ash, been forced through the skin by nature, just like many other superfluities.<sup>39</sup>

36 Gal. *MM* 5.12 (II 84 Loeb): εὐρομεν δὲ μάλιστα τὴν θεραπείαν αὐτῶν ἐνθένδε κατὰ τὸν μέγαν τοῦτον λοιμὸν, ὃν εἶη ποτὲ παύσεσθαι, πρῶτον εἰσβάλλοντα. τότε νεανίσκος τις ἐνναταῖος ἐξήγησεν ἔλκεσιν ὄλον τὸ σῶμα, καθάπερ καὶ οἱ ἄλλοι σχεδὸν ἅπαντες οἱ σωθέντες. ἐν τούτῳ δὲ καὶ ὑπέβητε βραχεία. τῇ δ' ὑστεραία λουσάμενος αὐτίκα μὲν ἔβηξε σφοδρότερον, ἀνηνέχθη δ' αὐτῷ μετὰ τῆς βηχῆς ἦν ὀνομάζουσιν ἐφελκίδα....

37 Gal. *MM* 5.12 (II 86 Loeb).

38 Gal. *MM* 5.12 (II 92 Loeb): ἐκεῖνος μὲν γε οὖν ὁ νεανίας ἐκ τῆς λοιμώδους νόσου κατὰ τὴν ἀρτηρίαν ἔλκος ἔχων ὑγίης ἐγένετο καὶ ἄλλοι μετ' αὐτὸν ὁμοίως.

39 Gal. *MM* 5.12 (II 92–4 Loeb): οἱ δ' ἐκ τοῦ λοιμοῦ ῥαδίως ὑγιάζεσθαί μοι δοκοῦσι τῷ προεξηράνθαι τε καὶ προκεκαθάρθαι σύμπαν τὸ σῶμα· καὶ γὰρ ἔμετός τιςιν αὐτῶν ἐγένετο καὶ ἡ γαστήρ ἅπασιν ἐταράχθη. καὶ οὕτως ἤδη κεκενωμένοις τοῖς σώζεσθαι μέλλουσιν ἐξανθήματα μέλανα διὰ παντός τοῦ σώματος ἀθρόως ἐπεφάνετο· τοῖς πλείστοις μὲν ἐλκώδη, πᾶσι δὲ ξηρά. καὶ ἦν εὐδηλον ἰδόντι

These pustules, or eruptions, required no treatment, were indeed part of the healing process. If ulcerous they formed scabs, which dropped off leaving the patient close to health, if not they were dry and itchy, then fell off like scales, from which all became healthy. For, in plague, drying, roughening, and scabbing have already occurred, that is the aim of any medicament that might be applied has been achieved.<sup>40</sup>

These generalisations are about those who have, or will, recover from the plague, rather than all afflicted, but skin eruptions feature in another sustained pestilential discussion, with reference to the ‘most long-lasting plague’ (πολυχρονωτάτῳ λοιμῳ) now occurring.<sup>41</sup> Galen quotes from Thucydides’ description of the Athenian Plague which had such devastating effects during the Peloponnesian War in this respect:

On the outside the body was not hot to the touch, nor was there pallor; the skin was rather red, livid, and broke out into small blisters and ulcers (*helkoi*).<sup>42</sup>

Fever and various other gastrointestinal issues – including loss of appetite, loose bowels, and bloody or black stools – are also symptoms associated with the present *loimos* elsewhere in Galen’s oeuvre.<sup>43</sup> Most frequently emphasised, however, is that those suffering from this pestilence did not recognise ‘themselves or their friends’, another Thucydidean symptom, as is explicitly noted.<sup>44</sup> This is not a failure of the faculty of memory itself, but rather the disease produces interference in access to that faculty, like a cataract does in the case of sight.

Galen worried about the predictive powers of the pulse in the present ‘great plague’ (μεγάλας λοιμός), indeed, he worried about the wider diagnostic and prognostic challenges of pestilential disease, its confounding characteristics for physicians and laymen alike.<sup>45</sup> Its corrosive inner heat is deceptive, the

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τοῦ σεσηπότος ἐν τοῖς πυρετοῖς αἵματος εἶναι τοῦτο λείψανον, οἷον τέφραν τινὰ τῆς φύσεως ὠθοῦσης ἐπὶ τὸ δέρμα, καθάπερ ἄλλα πολλὰ τῶν περιττῶν.

40 Gal. *MM* 5.12 (I1 94 Loeb).

41 Gal. *Hipp. Epid.* VI 1.29 (CMG V 10.2.2 53.16–19).

42 Thuc. 2.49.5; καὶ τὸ μὲν ἔξωθεν ἀπτομένῳ σῶμα οὐτ’ ἄγαν θερμὸν ἦν οὔτε χλωρόν, ἀλλ’ ὑπέρυθρον, πελιτνόν, φλυκταίναις μικραῖς καὶ ἔλκεσιν ἐξηγητικός. At CMG V 10.2.2 52.3–7 and 53.19–54.1.

43 Gal. *MM* 10.11 (10.733 K), *Hipp. Aph.* 4.21 (17B.682–3 K), *Hipp. Epid.* III 3.59–60 (CMG V 10.2.1 144.21–145.11).

44 Gal. *QAM* 5: ἀγνοῆσαι διὰ νόσημα σφᾶς τ’ αὐτοὺς καὶ τοὺς ἐπιτηδείους (*SM* 2 49.3–11); *Diff. Symp.* 3.4 (7.62 K) and *Caus. Symp.* 3.2.7.1 (7.201K); Thucydides, 2.49.8.

45 Gal. *Praes. Puls.* 3.3 and 4 (9.341–2 and 357–9 K).

hectic fevers it engenders are slippery and dangerous, and, of course, there is the sheer volume of cases, the thousands (μύριοι) affected in this 'long-lasting plague' (πολυχρόνιος λοιμός). This volume is a conceptual as well as a practical problem, a technical as well as a social issue, for ancient medicine is essentially about individuals not populations. To be able to operate most effectively, a physician needed knowledge of the patient's specific constitution, their healthy base-line, in order to understand both what is wrong and how best to treat it, to return the sick person to their previous state of health. There are established short-cuts. Some generalisations can be made based on age and sex, for instance, in respect to geography and environment, the seasons and weather, but these are rough guides which require calibration in every case.<sup>46</sup> Plague makes that impossible.

The kind of sustained engagement Galen enjoyed with the young man with the pestilentially ulcerated trachea, the complex individualised therapy he is able to dispense, and the patient himself actively participates in, cannot be extended to so many sufferers. It is the process not the prescription which requires repetition, and there is just not the time available to do so. The point had been underlined by Galen's insistence that it is the interaction between individual constitutions, particular somatic states, and putrefying air which produces plague, which engenders disease in many people, but not all, and not all the same in terms of severity and symptoms. Those whose bodies are well-balanced, unobstructed, and unburdened by excess or superfluities, especially moistures, are less susceptible, more likely to recover quickly, through purging and drying.<sup>47</sup> Generalised remedies will always be touted in such circumstances, but there is no such thing. Those who drank a draught of Armenian earth in the recent plague, for instance, were either cured immediately or died; and Galen makes no mention of the stories about Hippocrates bringing health to pestilential cities by burning a range of sweet smelling substances across the area, designed to combat the putrid qualities of the atmosphere.<sup>48</sup> Stabian milk, for example, is highly beneficial for a range of diseases, and completes, rather than comprises, the therapeutic package for the young man.

46 See e.g. Gal. *GMM* 1.1 (11.1–6 K).

47 Gal. *Diff. Resp.* 1.6 (7.291–2 K).

48 Gal. *SMT* 9.1 (12.191 K). This is taking Robert Leigh and Véronique Boudon-Millot to be correct in their recent editions, with translations (into English and French respectively) and commentaries, of *On Theriac to Piso, Attributed to Galen* (Leiden: Brill, 2016), 61, and (Paris: Les Belles Lettres, 2016), lii–lxxiv, that the work (which does mention Hippocrates curing the plague: *Ther.* 16) is not by Galen. On these stories more generally see J. Rubin Pinault, *Hippocratic Lives and Legends* (Leiden: Brill, 1992), 35–60.

The situation is not as bleak as depicted by Thucydides. In the Athenian Plague, he claimed, physicians were useless, ignorant of how to treat the disease, and particularly vulnerable as a result, but no other human art (*ἀνθρωπιὰ τέχνη*) was any more help, nor were appeals to the divine; all were eventually abandoned by the afflicted populace, despair dominated.<sup>49</sup> Galen has knowledge and understanding, but not the necessary capacity. There is a sense in which pestilence, such as the one he lived through, inherently exceeded the medical art. But though there was some confusion amongst the profession, Galen does not emphasise either their errors or their susceptibility. His friend Teuthras is the only medical casualty he notes, and, while all his slaves in Rome succumbed, as also most of the men over-wintering in Aquileia, Galen himself seems not to have been affected. There may be reasons why he would not have mentioned it, however, even if he had fallen ill. Immunity from, rather than empathy with, others' ailments is the preferred position of the classical physician.<sup>50</sup> Their authority was vested more in their own health and integrity than in any shared experience of suffering.

Still, the appeal of Thucydides here, the way his plague narrative is the main frame of reference for Galen's own pestilential engagements, as also for others in antiquity and after, is not just about the stature of the author and his text.<sup>51</sup> It is not just about the vividness and detail of Thucydides' account, which Galen contrasts with a certain Hippocratic sparseness on at least one occasion.<sup>52</sup> It is also, and primarily, about the way pestilence extends beyond medicine: is essentially a collective, communal phenomenon, a historical as much as a medical event. The repetition of some symptoms helps strengthen the connection, but should not be mistaken for any kind of assertion that the disease involved was the same, that is a claim which would make little sense to Galen; rather, the Athenian plague is the only meaningful precedent for the scale and severity of what he experienced overall.

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49 Thuc. 2.47.4.

50 B. Holmes, 'In strange lands: Disembodied authority and the physician role in the Hippocratic Corpus and beyond', in M. Asper (ed.), *Writing Science: Medical and Mathematical Authorship in Ancient Greece* (Berlin: de Gruyter, 2013), 431–472.

51 See F. Kudlien, 'Galens Urteil über die Thukydideische Pestbeschreibung', *Episteme* 5 (1971), 132–3; other Thucydidean episodes include: Lucr. 6.1139–1286; Lucian, *Hist. Conscr.* 13; and Procopius, 2.22–33.

52 Gal. *Diff. Resp.* 2.7 (7.850–851 K).

### 3 Identifying the Plague

The Littmans do not mention the loss of memory, the loss of self and family, but are otherwise content that all the symptoms and signs Galen described in the Antonine epidemic, 'are consistent with smallpox'.<sup>53</sup> Putting it more strongly, though his account is incomplete, and serves his own purposes, it is sufficient 'to enable firm identification of the disease as smallpox because of the excellent description of the most important diagnostic sign, the exanthema.' It is the passage in *On the Method of Healing* which is most decisive here, rendering both bubonic plague and typhus, the two other possibilities they considered, 'unlikely', and conforming especially closely to haemorrhagic smallpox. The ulceration and scabbing of the pustules in this sequence is key, characteristic of smallpox rather than any other acute feverish diseases involving skin eruptions. Bubonic plague is something of an outlier, but modern typhus, measles, and smallpox all begin with fevers and an assortment of aches, pains, and general un-wellness, followed by rashes that often start on the face (may be in the mouth and throat, which are also otherwise affected) and spread over the whole body (more or less).<sup>54</sup> Except in smallpox, these rashes tend to stay flat, or, at least, remain flatter; the eponymous buboes of bubonic plague are rather different.<sup>55</sup>

There are, of course, questions about how conclusive any historical diagnosis of this kind can ever be, and opinions vary on exactly how close the match of symptoms asserted by the Littmans really is. Much seems to rest on quite precise interpretations of terms often used vaguely and interchangeably, such as *exanthema* and *helkoi*. Two larger difficulties with the identification of the Antonine Plague as smallpox have also been noted, including by its supporters. In her recent survey of the topic, Danielle Gourevitch considers it, 'safe to suggest that this Galenic and fearful epidemic was due to a virus of the *Poxviridae* family (genus *Orthopoxvirus*) which are responsible for smallpox and other related diseases', that is, it was very similar to, but not necessarily identical with, modern smallpox (eradicated in 1979).<sup>56</sup> But she admits that the omission of any reference to the indelible scarring, the disfiguring facial pockmarks, which

53 R. J. and M. L. Littman (1973), 252.

54 See, for example, the relevant chapters in K. F. Kiple (ed.), *The Cambridge World History of Human Disease* (Cambridge: Cambridge University Press, 1993): 871–5 (measles); 1008–13 (smallpox); and 1080–4 (typhus).

55 And buboes – glandular swellings – do feature in general discussions of somatic swellings and surface eruptions in classical medicine, including by Galen (e.g. *MM* 13.5: III 328 Loeb), but not in his descriptions of the 'great plague'.

56 Gourevitch (2013), 72–5.



became the disease's signature is problematic in this respect. She adds a further challenge too, drawing attention to the concurrence of human and animal sickness and death in the plague accounts of Aelius Aristides and Herodian, two of the more contemporary witnesses to events, already cited. Smallpox is exclusively human. There are more or less closely related poxviruses which affect many other species, including livestock, some of which are zoonotic – that is transferable to people – but these infections are generally mild, localised and poorly transmissible among humans; indeed, most animal poxes are not very virulent.<sup>57</sup> In modern terms, therefore, there is no single poxvirus which could produce the Antonine plague as described in the ancient sources.

The absence of references to the scarring characteristic of modern smallpox has been explained in various vague and unsatisfactory ways in the scholarship. Such an omission does not, of course, prove that this important feature was not part of the pestilential scene in the Roman Empire of the second century AD, but there are a number of reasons to think that if it had been, the sources would have recorded the fact. Visibly disfiguring diseases were a popular theme among Roman writers, for instance, redolent with moral meaning, and remedies for removing scars and facial blemishes were standard in the pharmacological repertoire, a reliable earner for any physician it can be assumed. Pliny the Elder makes the most of nasty (*foedus*) facial, or facially focused, afflictions as markers of imperial excess with his stories of the arrival of *lichena* and *elephantiasis* on Italian shores in the *Natural History*.<sup>58</sup> While the obviously punitive deaths recounted for figures such as Sulla, Herod the Great, and Galerius involve, amongst other unpleasant details, an inner putrefaction which is manifest on the surface, as the whole skin itches unbearably and flesh turns into lice or worms, which cannot be washed away.<sup>59</sup> Galen himself covered recipes for a range of growths, tumours, pustules, and scars on the face in his voluminous collection of compound medicaments organised according to the somatic location affected.<sup>60</sup> This included many compounds to treat *lichena*, some of which specify that they overcome the eruptions without ulceration or scarring, though others excoriate the skin, and should be followed by a restorative plaster.

It has been suggested that the variability of the virus, differences of population and environment, might have led to less scarring in the Roman context.

57 S. L. Haller et al., 'Poxvirus and the evolution of host range and virulence,' *Infection, Genetics and Evolution* 21 (2013), 15–40.

58 Plin. *NH* 26.1–11; and see R. Flemming, 'Pliny and the pathologies of Empire,' *Papers of the Langford Latin Seminar* 14 (2010), 1–24.

59 Plut. *Sulla* 36.2–3; Josephus, *BJ* 1.656; Lactantius *DMP* 33.

60 Gal. *Comp. Med. Loc.* 5.3 (12 822–48 K).

This is certainly possible. Recent genomic work on poxviruses has emphasised their variation and adaptability: milder, so called ‘minor’ strains of the variola virus, the causative agent of smallpox, have repeatedly emerged, may indeed be the original form in humans, though it is calculated that the more virulent ‘major’ strain developed at least three thousand years ago, so before the period under scrutiny here.<sup>61</sup> However, while severe facial pockmarks follow recovery from variola minor much less frequently than recovery from variola major, in about 7% rather than 75% of cases in the most systematic modern study, this accompanies a fatality rate of less than 1% (in contrast to 10%–30% for the major strains).<sup>62</sup> So, to depress the scarring rates to a level where it is plausible that this would not be reported as part of the course of the disease would, according to the available information, not be compatible with the heavy mortality experienced during pestilential outbreaks at Rome and Aquileia. There is a larger methodological question at stake here too. What does it mean to identify the Antonine Plague as smallpox if that move is based on the historical variability of the disease, is reliant on the fact that pathogens and their interactions with their hosts change significantly over time?

Gourevitch’s explanation for the human and animal nature of the pestilence is a rhetorical one. It is, she readily confesses, an argument of last resort, but the dying livestock have been recruited for dramatic emphasis, to increase the emotional impact of these accounts.<sup>63</sup> There are precedents. The mules and hounds of the Achaeans are the first targets of Apollo’s pestilential arrows in the opening sequence of the *Iliad*, while the order of mortality is reversed, and animals play a more complex role, in Thucydides’ plague narrative.<sup>64</sup> Though bodies were lying around unburied, signalling the high toll exacted by the disease on both human life and social organisation, carrion eating birds and beasts avoided them, or died after tasting their flesh. The absence of carrion birds was notable, while the presence of domestic dogs allowed these lethal results to be witnessed directly. This latter point was further embellished by the Epicurean poet Lucretius, who, towards the end of the Roman Republic reworked the

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61 Haller et al. (2014), 18–19 and 34; see also C. Smithson, J. Imbery and C. Upton. ‘Re-assembly and analysis of an ancient variola virus genome’, *Viruses* 2017, 9, 253 (doi:10.3390/v9090253).

62 Z. Jezek, W. Hardjotanojo and A. G. Rangaraj, ‘Facial scarring after varicella: A comparison with variola major and variola minor’, *American Journal of Epidemiology* 114 (1981), 798–803.

63 Gourevitch (2013), 74–5.

64 Homer, *Iliad* 1.50–52; Thuc. 2.50.1–2.

Thucydidean plague to close his epic *On the Nature of Things*.<sup>65</sup> The suffering of man's faithful canine companions was displayed on the streets, like the unburied corpses, as the power of the disease dragged the life from their limbs.<sup>66</sup>

The references to dying livestock in Aelius Aristides and Herodian seem perfunctory in comparison. They add to the destructive footprint of the *loimos* they describe, but the real emotional and political work is done elsewhere in these accounts. There is a closer resemblance to a couple of plague reports in the Roman annalistic tradition. The Augustan historian Livy records a severe and sustained *pestilentia*, lasting for about five years from 436 BC, which brought death to city and countryside, killing 'man and livestock' (*hominum pecorumque*) alike, and while he had a plague outbreak in cattle succeeded by one among people in the years 175–4 BC, the later excerptor of Republican prodigies, Julius Obsequens, brutally compressed the whole episode.<sup>67</sup>

During a serious pestilence affecting humans and cattle, corpses lay unburied, for Libitina was overwhelmed, but no vultures appeared.<sup>68</sup>

The Thucydidean echoes are obvious, here and in Livy, but if the 'man and livestock' phrase had become one topos among many routinely deployed on these occasions, it is more sparingly used than most, and perhaps more specifically.

The possibility that pestilential outbreaks involving humans and livestock were a specific phenomenon in the Roman world is given some credence by recent genomic work on one of the other diseases referred to so far – measles – and by the reported recurrence of such events in the early middle ages.<sup>69</sup> So, though the timing is still somewhat uncertain, new techniques and methods are under development, require further calibration, it has been established that the measles virus appeared much later than had been previously assumed.<sup>70</sup> It, and its close relative the rinderpest virus, the causative agent of rinderpest, an epidemically very virulent and lethal disease of cattle (and other ungulates), until eradicated in 2011, only went their separate ways sometime between the

65 David Sedley, *Lucretius and the Transformation of Greek Wisdom* (Cambridge: Cambridge University Press, 1991), 160–165.

66 Lucr. 6.1222–5.

67 Livy 4.25.4 and 41.21.5–7.

68 Obs. 10: Gravi pestilentia hominum boumque cadavera non sufficiente Libitina cum iacerent, vulturius non apparuit.

69 T. P. Newfield, 'Human-bovine plagues in the early middle ages', *Journal of Interdisciplinary History* 48 (2015), 1–38.

70 See generally on method: R. Bick et al., 'Measurably evolving pathogens in the genomic era', *Trends in Ecology and Evolution* 30 (2015), 306–313.

ninth and twelfth centuries AD.<sup>71</sup> Before that, the common ancestor morbillivirus could have infected humans and cattle, with the only available guide to its effects coming from modern measles and rinderpest respectively. The Antonine Plague, like its Republican predecessors and medieval successors, might demonstrate the point. Certainly, whatever human sickness this now extinct archaeovirus generated cannot, on the current state of knowledge, be ruled out of the pathological picture for Galen's great *loimos*.

This is, of course, all pretty speculative, but so, in the circumstances, is the smallpox diagnosis for the Antonine Plague. Here too the relationship between modern smallpox and any ancient disease has been thrown into deeper uncertainty by recent genomic studies. The variola virus genome isolated from a mummified child who lived in mid-seventeenth century Lithuania turned out to be ancestral to all twentieth century strains. Modern smallpox is, then, just that, the evolutionary history of the virus prior to that point, with all the possible variations in virulence and the wider set of interactions between pathogen and host, has become more distant than it once was.<sup>72</sup> There is one more resource that can, and should, be brought to bear on the problem, however, that is the voluminous Arabic writings of the great Persian physician of the medieval Islamic world, Abū Bakr Muḥammad ibn Zakarīyā al-Rāzī, commonly known in the Anglophone world by his latinised name, Rhazes. He is the medical figure commonly credited with mutually distinguishing smallpox and measles, and providing the first 'scientific' description of the latter, if not the former, around AD 900.<sup>73</sup> While his contribution is not nearly so straightforward as is often assumed or asserted, Rhazes' engagement with Galen is

71 Combining the estimates in A. Furuse, A. Suzuki and H. Oshitani, 'Origin of measles virus: Divergence from rinderpest virus between the 11th and 12th centuries', *Virology Journal* 7: 52 (2010); and J. O. Wertheim and S. L. Kosakovsky Pond, 'Purifying selection can obscure the age of viral lineages', *Molecular Biology and Evolution* 28 (2011), 3355–65.

72 A. T. Duggan et al, '17th Century variola virus reveals the recent history of smallpox', *Current Biology* 26 (2016), 3407–412. See also: P. Pajer et al., 'Characterization of two historic smallpox specimens from a Czech museum', *Viruses* 2017, 9, 200 (doi: 10.3390/v9080200) with A. Porter et al., 'Comment: Characterization of two historic smallpox specimens from a Czech museum', *Viruses* 2017, 9, 276 (doi: 10.3390/v9080276); and Smithson, Imbery and Upton (2017).

73 This is often asserted in specific and general histories of disease – e.g. D. R. Hopkins, *The Greatest Killer: Smallpox in History* (Cambridge: Cambridge University Press, 2002), 27; and W. H. MacNeill, *Plagues and Peoples*, rev. edn. (New York: Random House, 1998), 131 – as well as being more or less assumed in much of the genomic literature about pathogen evolution, e.g. A. Furuse, A. Suzuki and H. Oshitani (2010); Wertheim and Kosakovsky Pond (2011), 3363.

certainly worth discussing in this context, as also various other aspects of his treatment of the diseases *jadari* and *hasbah*, which have been construed as terms for smallpox and measles respectively.

In the preface to his short treatise dedicated to *jadari* and *hasbah*, Rhazes explains that his focus will be on the former.<sup>74</sup> It is *jadari* which has yet to receive a thorough textual treatment, an omission his discourse rectifies. It is not, however, that the disease has been entirely overlooked by previous medical authors, rather that these discussions remain incomplete, especially in respect to the causes and cure of the complaint. Indeed, Rhazes opens his disquisition with a defence of Galen against charges of having failed to mention this affliction. He cites four passages to prove his case, from the first book of *On Compound Drugs according to Kind*, the fourteenth book of the great work *On Pulses* (that is book two of *Prognosis from the Pulse*), the ninth book of *On the Usefulness of the Parts*, and the fourth book of his commentary on Plato's *Timaeus*.<sup>75</sup> The term *jadari* appears in all these excerpts, taken from the Arabic translations of these works, in contexts which are broadly in line with Rhazes' understanding of the disease.<sup>76</sup> That it is produced by the putrefaction and fermentation of the blood, which generates fever, inflammation and the eruption of superfluities through the skin, amongst other effects.<sup>77</sup>

William Alexander Greenhill, who carefully translated the treatise into English from the original Arabic in the mid-nineteenth century, did not have access to these Arabic versions of Galen's works. Still, he diligently compared the quotes in Rhazes with the surviving Greek, as far as possible, and concluded that *jadari* most probably renders *ionthos* and *herpes* in these passages,

74 The Arabic text remains unedited and unpublished, so I have had to rely on the English translation of W. A. Greenhill – Abu Becr Mohammed ibn Zacariya Ar-Razi, *A Treatise on the Small-Pox and Measles* (London: Sydenham Society, 1847), 22–73 – with its rich annotations and Arabic index. References will be, therefore, to that translation. The volume (abbreviated here as *TSM*) also includes translations, from Arabic and Latin, of passages from other works of Rhazes which cover these diseases, with considerable consistency, not to say repetition.

75 Rhazes, *Kitab fi al-jadari wa-al-hasbah* (KJH) 1,1–2 (*TSM* 27–28). Galen's many treatises on the pulse were combined on the syllabus of the medical schools of late antique Alexandria, and thereafter.

76 Rhazes makes it clear later in the same chapter (1.2: *TSM* 28) that he worked with Arabic material, and asked those familiar with Greek and Syriac whether he had missed anything. There is broader discussion about his competence in these languages, see O. Kahl, *The Sanskrit, Syriac and Persian Sources in the Comprehensive Book of Rhazes* (Leiden: Brill, 2015), 5–7.

77 As stated at e.g. KJH 1.6 (*TSM* 29–30).

that is words for tumours and pustules themselves.<sup>78</sup> Certainly none of these excerpts are at all plague related, nor does Rhazes make the connection more generally, for either *jadari* or *hasbah*. Though his knowledge of Galen's oeuvre was very extensive, and there is indeed a lengthy plague sequence in the next book of *Prognosis from the Pulse*, as has been noted. Part of the explanation may be that, for Rhazes, both *jadari* and *hasbah*, the latter being essentially a more bilious variant of the former, are common childhood diseases, rarely fatal.<sup>79</sup> This presumption was shared, moreover, by the assortment of other medical writers, mostly from the eighth and ninth centuries AD, whose views on the subject he collected in his compendious *Kitab al-Hawi*.<sup>80</sup> *Jadari* and *hasbah* are rarely avoided on the road to adulthood, but while they can kill, they usually do not. These are everyday diseases, dangerous in some forms; but not the stuff of plagues.

The modern understanding of smallpox and measles makes sense of this disjunction. One of the key features of these diseases, as well as another acute feverish illness involving skin eruptions, that is scarlet fever, and, to a lesser extent typhus, is that they endow those who survive their depredations with immunity (as also rinderpest and animal poxes). For mortality to be as high as reported for the Antonine Plague, at least in Rome and various military encampments, and for adults to be hit as hard as Galen indicates, this has to have been a 'virgin soil epidemic' involving one of these diseases.<sup>81</sup> In such cases, where smallpox or measles were previously unknown, or last encountered long ago, as in medieval Japan, and early modern Spanish America, for example, the effect on communities lacking resistance can be devastating.<sup>82</sup> Whereas,

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78 *TSM* 141–150.

79 *κῆρ* 3.2: bilious nature of *hasbah*; 1.6: childhood diseases (*TSM* 35 and 29–30).

80 Rhazes noted down passages from all the medical texts he read, and organised them together with his own views on the subject and some relevant case histories under appropriate headings, this compilation seems to have been essentially for his own use, but was then published after his death, and indeed rendered into Latin (as the *Continens*): see e.g. Kahl (2015), 3–5. Greenhill translated the passages (*TSM* 101–130) from an Arabic manuscript in the Bodleian (Marsh 156).

81 Though the notion of the 'virgin soil' is sometimes construed more broadly and problematically, see e.g. D. S. Jones, 'Virgin soils revisited', *William and Mary Quarterly* 60 (2003), 703–742.

82 On Japan see e.g. A. B. Jannetta, *Epidemics and Mortality in Early Modern Japan* (Princeton: Princeton University Press, 1986); and W. W. Farris, *Population, Disease and Land in Early Japan* (Cambridge, MA: Harvard University Press, 1985); the literature on the Americas is more extensive, see e.g. S. A. Alchon, *A Pest in the Land: New World Epidemics in Global perspective* (Albuquerque: University of New Mexico Press, 2003); and N. D. Cook and

in circumstances where the environment and population allow the pathogens to establish a permanent presence, that is where these conditions become endemic, they are largely restricted to children, to the not yet immune. This then is the situation Rhazes and his recent predecessors described for *jadari* and *hasbah*, in a geographical region that includes the area in which Verus campaigned. The new Abbasid capital of Baghdad was founded just a little north of the old Parthian and Sassanian centre of Ctesiphon, and about 80 km north of Babylon. Rhazes spent time in Baghdad, as did most of his sources, even if they, like him, often originated further east, deeper in Persia.<sup>83</sup>

This is, of course, over half a millennium after the Antonine Plague, long enough for a disease like smallpox to become endemic even if it had reached Mesopotamia at the same time as Verus did.<sup>84</sup> This was not Rome's first Parthian expedition, after all, and the eastern boundaries of the Empire were porous and flexible in many ways. The point, however, is a more general one about the patterning of the diseases under scrutiny here, that while Rhazes' failure to place *jadari* and *hasbah* in a lineage which goes back to Galen's 'great plague', his preference for vaguer, non-epidemic ancestry for at least the former is noteworthy, this is what might be expected if these were modern smallpox and measles. So how good is the fit between Rhazes descriptions of these two diseases and their proposed modern counterparts more broadly? Obviously any discrimination between, individuation of, acute feverish diseases involving skin eruptions is a move in the right direction, but there is more to it than that.

Three points are worth making in this regard. The first is that, amongst the very long, and mostly generic, list of early signs of *jadari* and *hasbah*, back pains are more particular to the former, whereas nausea and anxiety are more prevalent in the latter.<sup>85</sup> Modern textbooks include back pain as a typical symptom of smallpox, but not measles, while being pretty indifferent about the rest.<sup>86</sup> The second is the assertion made apparently in Rhazes' own voice in the *Hawi*, as well as by one of the recent authorities he cites, a member of the Syro-Persian Nestorian family of physicians from Gondeshapur who shared

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W. G. Lowell (eds.), *Secret Judgements of God: Old World Disease in Colonial Spanish America* (Norman: University of Oklahoma Press, 2001).

83 For Rhazes' biography see e.g. *TSM* 137–141; Kahl (2015), 1–2.

84 In Japan, smallpox, which probably arrived from China in the sixth century AD, but is more clearly identified in a massive epidemic of 735, seems to have become endemic by the twelfth century, while measles did not: Jannetta (1986), 65–70 and 108–117.

85 *KJH* 3 (*TSM* 34–35).

86 See e.g. Kiple (ed: 1993), 1009.

the name Bokhtishu, that the pustules in *jadari* are raised, whereas the rash in *hasbah* stays flat.<sup>87</sup> Though, otherwise, discussion of the skin eruptions occurs more in a prognostic than diagnostic setting, and often along similar lines in both diseases, though with some specific variations.<sup>88</sup> Third is the clear division between *jadari* and *hasbah* in respect to what happens on the somatic surface in the aftermath of these affections. In the treatise dedicated to them there is a chapter on removing the marks and scars of *jadari*, which includes a number of recipes for applications to remove marks on the eyes, face and elsewhere on the body.<sup>89</sup> It is also suggested that frequent bathing, rubbing, and growing fat and fleshy will help fill in and smooth over the pockmarks. Many of the other authors excerpted in the *Hawi* also offer such medicaments and advice, but only for *jadari*, *hasbah* is not mentioned in this context.<sup>90</sup>

It does, therefore, seem that the *jadari* of Rhazes and his recent predecessors is a reasonably good match for modern smallpox, but that is less clearly the case for *hasbah* and measles. It is worth mentioning that, in Greenhill's day (and beyond), the Arabic term *hasbah* mostly signified scarlet fever.<sup>91</sup> Smallpox had been distinguished from other acute feverish diseases involving skin eruptions, with *hasbah* designating the rest. The Antonine Plague, as described by Galen and others, appears to align more with this blurred remainder than the more determinate *jadari*, however, as it crucially lacks the scarring, the facial marks, which are so intrinsic to the tradition.<sup>92</sup> The consensus around smallpox needs to be challenged and questions of identification re-opened. Further genomic and historical work will certainly help shed light on the matter, even if no appropriate ancient DNA is forthcoming.<sup>93</sup>

87 *Hawi* 47 and 71 (*TSM* 113 and 121).

88 *KJH* 14 (*TSM* 71–73).

89 *KJH* 11 (*TSM* 60–63).

90 *Hawi* 22, 36–39, 44, 48, 50, 53, and 76–9 (*TSM* 106, 110–111, 112–113, 114, 116, and 124).

91 *TSM* 136.

92 Pockmarks are even noted by native reporters of early outbreaks of smallpox in Mexico, were noticeable on initial encounter, see R. McCaa, 'Spanish and Nahuatl views on smallpox and demographic catastrophe in Mexico', *Journal of Interdisciplinary History* 25 (1995), 423.

93 Though the evidence of second century Roman epidemic mortality presented in P. Blanchard et al, 'A mass grave from the catacomb of Saints Peter and Marcellinus in Rome, second-third century AD', *Antiquity* 81 (2007), 989–998, may be less straightforward than first suggested, a DNA from the skeletons could still produce interesting results. The international historical smallpox project just launched by the Mütter Research Institute is also promising.



#### 4 Conclusions

To return to Galen, however, and his efforts to avoid, or at least to control, distress, the distress which inhered in the pestilential age he inhabited. For the 'great plague' reached Rome – the imperial capital and centre of Galen's career – not long after he did, and it met him again in Aquileia, where it temporarily inserted itself between him and the persons of the emperors. It ebbed and flowed thereafter, but was characterised by persistence and longevity, this was 'the most long-lasting plague' (would that it would end!). Time was both structured by the epidemic, so that locating an event 'in the first outbreak of the great plague' became an obvious move to make, and un-structured by its continuity, by the uncertainty of its end.

Galen lost a whole household of slaves to the plague, though he seems to have considered them as possessions, not people, in his accounting of damage due to fire and pestilence in *περὶ ἀλυστίας*. He also lost his friend Teuthras. He claims to have witnessed the death of most of the army gathered at Aquileia, and saw 'thousands' afflicted by the epidemic in Rome. Those presented as his patients, however, individuals with whom he interacted, rather than the undifferentiated masses of city dwellers and soldiers who may or may not have received his therapeutic attentions (he does not say), fared rather better. Galen identified and concentrated on the group with good prospects, who could be saved, with the correct approach.

The great plague was medically challenging, tricky and misleading, violent and dangerous, but the body was not defenceless, and medicine could align itself with, assist and support, its inherent purgative responses. It was also socially challenging – friends and family were no longer recognised as such by sufferers – but there is no suggestion of a collapse of the moral order, as is so central to Thucydides' plague narrative. Issues of Roman manpower and famine emphasised in other sources were of little concern to Galen. He recorded the loss of troops, but Marcus Aurelius headed north to deal with the Germanic incursions just a couple of sentences later, apparently untroubled by these depredations. The sense that *loimos* is not just a medical matter, exceeds the capacity of the art, spills over into other domains, is always present, but never fully articulated. This hinterland is glimpsed, sporadically, across Galen's oeuvre, its painful depths revealed momentarily, as in *περὶ ἀλυστίας*, but rarely explored. What is medically manageable receives more discussion, and pushes back against the uncontrollable aspects of pestilence to some extent, but without taming them. That Galen's engagement with the plague is piecemeal and uneven, is thus an integral part of the phenomenon; the picture is patchy and incomplete because it has to be.

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