

8

PUBLIC HEALTH

Of the matters which fell under the general heading of the promotion of public health, as far as was possible in a large and crowded city, the first and most important of all was the water supply (which has been dealt with separately), and the provision of baths open to the public, sometimes free and at all events (at least in the Principate) cheap, to enable people of all classes to keep clean. With these went a system of drains and sewers, along with public latrines, and cleansing services. There was also the encouragement of exercise, at the *palaestra* attached to the baths or in the Campus Martius, and the recognition of the importance of parks and gardens as open spaces. Burials too were controlled in the interests of hygiene; eventually medical services came into the civic domain and hospitals became available. Besides these developments, the legal framework within which people lived gave interdicts to protect the public's rights and allowed actions to assert such things as access to light or to prevent the emission of noxious fumes.

ATTITUDES TO HEALTH

First it must be made clear that the Romans did have a concept of public hygiene; indeed, they were concerned rather more with public than private health. Private medicine was mostly learned from the Greeks, but there was a preference for native folk remedies. Celsus¹ gave the basic—and enduring—rules for healthy living. His and other medical writings show awareness of the importance of cleanliness, diet, exercise and fresh air. (Martial in describing the good life includes exercise, the best aqueduct and the baths in his list.²) Diet, however, for all Romans was essentially cereal-based and deficient in vitamins, especially for urban dwellers who did not go out much in the sun, so rickets was common among children, according to Soranus.³ It seems that the aediles' control of the market, although primarily concerned with adequate provision of supplies,⁴ also involved, presumably on grounds of hygiene, the rejection of unfit wares; more

1 Celsus 1.1–2.

specifically we hear of stinking fish and aged lamb.⁵ Apuleius has a municipal aedile getting one of his staff to jump on fish that was allegedly not fresh.⁶

Vitruvius was concerned with healthy living from an architect's point of view.⁷ An architect must know the medical consequences of climate, situation, water supply and other factors when deciding where a city should be built; he must be wary of the 'poisoned breath of marsh animals' and conscious of the prevailing winds with their differing effects upon health. Seneca vividly describes the pollution of the City: 'No sooner had I left behind the oppressive atmosphere of the City and that reek of smoking cookers which pour out, along with a cloud of ashes, all the poisonous fumes they've accumulated in their interiors whenever they're started up, than I noticed the change in my condition at once.'⁸

Livy described the stench and overcrowding which attended the plague of 463 BC, when 'contact itself propagated the disease';⁹ he may have been modelling himself on Thucydides' famous description of the plague of 430 BC at Athens, but if so, it still suggests a common stock of knowledge. Just as there is very little record of real famine, as opposed to hunger,¹⁰ at Rome, so we hear relatively little of virulent plague as contrasted with ordinary epidemics, though disease was endemic. The major plagues in our period seem to have taken place under Nero, under Domitian, under Marcus Aurelius—the notorious one—and in 189 under Commodus.¹¹ Flight was really the only remedy against serious epidemics, and that was not available to the majority. We learn from Ammianus Marcellinus that maladies were more severe at Rome than elsewhere because the City attracted men to it, and that medical art often could not ease them; attempts were made to isolate the sick, and slaves sent to enquire about a sufferer's progress must wash thoroughly before their return.¹² In the Later Empire we even find concern expressed about hygiene in prisons. An accused person when incarcerated 'must not suffer the darkness of an inner prison, but he must be kept in good health by the enjoyment of light, and when night doubles the necessity for his guard, he shall be taken back into the vestibules of the prisons and into healthful places'.¹³ On Sundays provincial governors were to inspect prisons, to ensure that food was supplied to those who did not have it from a private source; moreover, 'Prisoners must be conducted to the bath under trustworthy guard'.¹⁴

2 Martial 5.20.

3 Cited by Rickman (1980):7.

4 DH 6.90; see chs 9 and 10.

5 Plautus, *Rudens* 373–4; *Capt.* 823.

6 Apuleius *Met.* 1.24–5.

7 Vitruvius 1.1.10; 1.4.1–8; 1.6.1–3.

8 Seneca *Ep.* 104.

9 Livy 3.6.3.

10 Garnsey (1988) Preface, p.x.

BATHS¹⁵

Water has been dealt with separately, but it is clear that one of the main uses of the water brought into the City was for the public baths; indeed, they were the principal cause of the need to increase the water supply which, Frontinus reckoned,¹⁶ had already doubled in the later second century BC. The ready availability of baths is one of the clearest indications of the positive Roman attitude towards health. Baths were certainly a pleasure, but by the Empire they were viewed as more than a luxury; otherwise how are we to explain why they should have been made so accessible to all, even to women—and slaves. The negative link between cleanliness and disease was understood, even if the risk of disease being spread at the baths was not. Cleanliness, however, was relatively easy to achieve in public places, whereas in the private dwellings of the urban poor it must have been nearly impossible.¹⁷ But the normal Roman garments for both sexes, being simple, were generally conducive to health and reasonably easy to keep clean.

Baths open to the public seem to have been in existence by the end of the third century BC; Plautus suggests that Roman audiences would not find them unfamiliar.¹⁸ They began as simple wash-places,¹⁹ but by the end of the Republic they had changed from a merely useful amenity to a social necessity. These early baths were almost certainly run for profit; Agrippa's munificence in 33 BC, when he provided bathing free for his year as aedile in all the baths, not just the great baths he built at his own expense, seems to have been a novelty.²⁰ Subsidised, if not free, bathing soon, however, came to be the accepted norm for Rome, thanks to imperial beneficence.

In the provinces, individual magistrates or leading persons provided free bathing from time to time but, in general, costs had to be covered. Baths privately owned and charging a fee continued to flourish in the Empire, as we learn from both literary²¹ and legal²² sources, but it seems that the great imperial *thermae*²³ set the standards, as exemplified by those of Agrippa, Nero (rebuilt by Severus Alexander) and Trajan.²⁴ Nero, indeed, may have been the first to link athletic facilities with baths.²⁵ Although they were provided for the inhabitants of Rome and for its visitors by the emperors, it seems fair to view this as a municipal provision, because it is comparable to similar if smaller scale munificence in lesser towns.²⁶ The building of the great *thermae* was presumably

11 Suet. Nero 39; Dio 67.11; SHA *M. Ant. Aurelius* 13 & 21 and Herodian 1.12; Dio 72.14; see Gilliam (1961).

12 Ammianus 14.6.23.

13 CTh 9.3.1—AD 320.

14 CTh 9.3.7—AD 409.

15 See Robinson (1984).

16 Frontinus aq.65–8.

from the emperors' own resources; about their upkeep we know that Agrippa, for instance, in his will left to Augustus certain estates to maintain his baths, and that Augustus at once made these estates over to the people, that is, to the *aerarium*.²⁷ Severus Alexander is alleged to have assigned a whole range of taxes for the maintenance of his own and other *thermae*.²⁸ In the Later Empire the *collegiati*, compulsory and hereditary corporations, were responsible for the baths to the Urban Prefect, and it is possible that particular taxes were used for this purpose.²⁹

In the Republic, as we learn from Seneca,³⁰ baths were an area of aedilician responsibility. It is made clear that private as well as contracted-out services were subject to official control, even to the extent of the regulation of the heat. We do not hear explicitly of any replacement for the aediles in this field in the early Principate, any more than in connection with markets and eating houses, but at some stage, though perhaps not until the reign of Constantine, overall responsibility passed to the Urban Prefect.³¹ It is possible too that the *praefectus vigilum* had a role here; he exercised a jurisdiction over various thieves, and specifically over the *capsarii* who minded the clothes of the bathers.³² On the other hand, it was the praetor who protected the individual citizen's right of access to the public baths, granting an action for *iniuria*—defamation—if anyone was refused admission to the baths, the theatre or the playing fields.³³

The regulations for the baths at Vipasca, an imperial mining village in Portugal, are well known to us from an inscription,³⁴ and they are probably exemplary in outline. There the sexes were segregated in time not space, but Vitruvius wrote that men's and women's baths should adjoin so that they could share the same furnaces.³⁵ Certainly respectable women did frequent public baths, for example, Augustus' mother.³⁶ Mixed bathing, which seems to have become normal in the

17 Yavetz (1958); Scobie (1986); there is some reason to believe that things may have improved slightly in the Empire, precisely because of the increase in baths, etc.

18 E.g. Plautus *Rudens* 527ff.

19 Seneca Ep.86.12.

20 Dio 49.43.

21 E.g. Fronto Ep.Gr.5.

22 E.g. D.7.1.13.8, Ulpian 18 *ad Sab*; 25.1.14.2, Ulpian 5 *reg*; 32.91.4, Papinian 7 *resp*.

23 This term is applied to the 'leisure complexes' built by the emperors; simpler establishments, *balnea*, continued to be provided.

24 Nash (1981):429–33; 460–4; 472–7; P & A: 518–20; 531–2; 534–6. Caracalla was another grandiose builder of baths in the Principate.

25 Tac. Annals 14.47.3, if the dedication of the gymnasium is to be taken with the grant of oil.

26 ILS 5664 (=CIL X 4884); 5671 (=IX 5074); 5672 (=XIV 2979).

27 Dio 54.29.

28 SHA *Sev. Alex.*24.5.

early Empire, perhaps always appeared a little fast to some people; Hadrian forbade it,³⁷ and Marcus Aurelius confirmed the ban.³⁸ But clearly this prohibition was not to discourage bathing by both sexes, any more than was the higher charge for women, which seems explicable on grounds of hygiene—long hair and menstruation. The traditional admission charge for an adult man was a *quadrans*,³⁹ a quarter of an *as*, while boys were admitted free, as perhaps were girls below puberty. Further needs, such as oil, probably had to be paid for. As long as there were ample supplies of water, and also of fuel for the furnaces, which was an important item in the traffic at the Tiber docks, public baths were a very suitable way of promoting public health. The one problem they produced was fumes from the furnaces. Ulpian records the view of the jurist Aristo that an *interdictum utile* should be given for the repair and maintenance of the flues carrying off these fumes.⁴⁰ Such pipes might be a nuisance to neighbours,⁴¹ and it might even be necessary to acquire a servitude right to control steam from baths.⁴²

FRESH AIR

A part of the positive approach to health, as evidenced widely by Martial, Petronius and Seneca, was the Roman recognition that exercise—which often took place at the baths—was generally a good thing, as also was the taking of fresh air in parks and gardens. Exercise was definitely recognised as beneficial to the health of the individual; the provision of facilities for the citizens to exercise indicates the concern for public health. Similarly, nearly all Romans seem to have enjoyed parks and gardens;⁴³ the fact that they were widespread throughout the City may be merely a happy coincidence, but it probably included a politic recognition of their benefit to the citizens' health and temper. Julius Caesar left

29 As at Constantinople: CJ 8.11.19—AD 424.

30 Seneca Ep.86.10; *de beata vita* 7.3.

31 Chastagnol (1960):361; see e.g. ILS 5703 (=CIL VI 1750); 5715 (=VI 1703); 5716 (=VI 1670).

32 D.1.15.3.1 & 5, Paul *de off. praef. vig*; cf. Apuleius *Met.*4.8.

33 D.43.8.2.9, Ulpian 68 *ad ed.*: qui in campo publico ludere vel in publico balineo lavare aut in theatro spectare arceatur.

34 FIRA i 105 (p.502ff), *lex metallis Vipascensis*, vv. 19–31.

35 Vitruvius 5.10.1. Archaeological evidence, e.g. at Caracalla's Baths, often seems to show separate changing rooms but shared facilities otherwise; at Herculaneum there are separate women's baths.

36 Suet. *Aug.*94.4.

37 Dio 69.8; SHA *Hadrian* 18.

38 SHA *M. Ant. Aurelius* 23.

39 Cicero *pro Caelio* 26; Horace *Sat.*1.3.137; Seneca *Ep.*86.9; Martial 1.59; 3.30.

his gardens beside the Tiber to the people for their use and enjoyment;⁴⁴ Agrippa too bequeathed gardens to the people.⁴⁵ When Augustus built his Mausoleum he made over the surrounding woods and walks for the use of the people.⁴⁶ Vespasian, a hard-working emperor, yet spent much of his time in the Gardens of Sallust.⁴⁷ On a smaller scale, porticoes provided an amenity, sheltered from the weather, yet in the open; their arcades, or rooms off them, could provide a suitable setting for works of art or even libraries. The concept of ‘lungs’ for a city is not new.

DRAINS AND SEWERS

The Cloaca Maxima is one of the oldest constructions in Rome; in a sense, its building for the drainage of the Forum area marks the urban foundation of Rome just as much as does the dedication of the Capitol. Drainage made usable both the Campus Martius and the Circus Maximus areas.⁴⁸ The drainage of the marshy lands around the City by Agrippa and Augustus, Claudius, and Nerva was also important for public health.

Dionysius of Halicarnassus greatly admired Rome’s paved streets and aqueducts, and also ‘the construction of the sewers.... [It is alleged] that once, when the sewers had been neglected and were no longer passable for the water, the censors let out the contract for the cleaning and repairing of them at a thousand talents!’⁴⁹ Strabo was similarly impressed by the roads, aqueducts and drains of Rome; some sewers were large enough for a hay wagon, and all were plentifully washed by water from the aqueducts.⁵⁰ This account links with that of Pliny the Elder who recorded that there were admirable sewers which were navigated by Agrippa in his aedileship⁵¹ (an event also recounted by Dio

40 D.43.21.3.6, Ulpian 70 *ad ed.*

41 Fronto *ad Marcum* 1.3; D.8.2.13pr, Proculus 2 *ep*; h.t.19pr, Paul 6 *ad sab.*

42 D.8.5.8.7, Ulpian 17 *ad ed.*

43 Grimal (1969); Toynbee (1971), ch. iv, mentions ‘the general passion of the Romans for gardens’.

44 Dio 44.35; Plutarch Brutus 20.

45 Dio 54.29.

46 Suet. Aug.100.

47 Dio 65.10.

48 Lanciani (1888):55–6; (1897):29–31; Ammerman (1990).

49 DH 3.67.5.

50 Strabo 5.3.8.

51 Pliny NH 36.24.104: mirabantur praeterea cloacas, opus omnium dictu maximum, sub fossis montibus atque urbe pensili subterque navigata M. Agrippae in aedilitate post consulatum.

Cassius⁵²). Pliny also praised other parts of the drainage system. There were seven streams which flushed the City and, when thrust forward by rain water as well, these battered the bottoms and sides of the sewers; sometimes the Tiber when in flood backed up the sewers, and even so their construction was strong enough to withstand this, for the Cloaca Maxima had endured since the Tarquins.⁵³ (Not that all the sewers were on such a scale; we hear of unsuccessful attempts to push hated bodies into them, when they proved too narrow;⁵⁴ this does seem to prove the existence of manholes or hatches giving access to the sewers.⁵⁵)

In the Republic, and under the Principate until Trajan, the responsibility for sewers and drains was viewed as part of the care of the streets, and so fell into the charge of the censors or the aediles; it has been discussed in that context in [chapter 5](#). Then, under Tiberius a board of commissioners was set up to control the Tiber;⁵⁶ under Trajan their remit was extended to include the sewers.⁵⁷ The cleaning and maintenance work probably continued to be put out to tender⁵⁸ since we do not hear of any substantial gang belonging to the commission, unlike the *cura aquarum*. There must have been some public slaves attached, however, since there was a normal office staff.⁵⁹

While the main sewers must always have been publicly maintained, whether through censors, aediles, or commissioners of some sort, their tributaries often fell within the control of the private citizen, with the public aspect protected by interdict.

The praetor has taken care by means of these interdicts [both prohibitory and restitutory] for the cleaning and the repair of drains. Both pertain to the health and safety of cities. For drains choked with filth threaten pestilence of

52 Dio 49.43. After repairing all the public buildings and all the streets, Agrippa cleaned out all the sewers and sailed through them underground.

53 Pliny NH 36.24.105–6.

54 Herodian 1.13.6; 5.8.9; SHA *Elagabalus* 17; *Gordian* 13; *Ep. de Caes.* 39. Cf. Suet. Nero 26.

55 Lanciani (1888):56, with illustration—the Bocca di Verità.

56 Tac. *Annals* 1.76; Dio 57.14.7–8. See [ch. 6](#).

57 ILS 5930 & 5932 (=CIL VI 31549 & 31553).

58 Juvenal 3.31–2 & 37–8; Fronto *ad M. de or.* 10.3 (Nab.155); cf. Pliny *Ep.* 10.32, which shows penal slaves cleaning baths and sewers, as well as maintaining streets and highways.

59 See [ch. 6](#).

the atmosphere and ruin, if they are not repaired. This interdict is provided for private drains, as public drains deserve public care.... And Pomponius also writes that if anyone wishes to make a drain so that it has an outlet into the public drain, he is not to be hindered.... This interdict applies to public drains, so that you should have nothing that is done or inserted in a public drain by which it is or shall be made worse.⁶⁰

Moreover,

although the repair of a drain, but not the building of a new drain, is included in this interdict, nevertheless Labeo said that there should be a similar interdict against the use of force to prevent the building of a drain of the same usefulness; for the praetor had issued an interdict of this kind, forbidding the use of force to prevent the building of a drain in public land; and this had met with the approval of Ofilius and Trebatius. Labeo himself stated that it should be said that the cleaning and repair of a drain already built should be permitted by interdict, but that the building of a new one was for those who had charge of the public streets to concede.⁶¹

Some rules about drains fell purely within the private sphere; for instance, the usufructuary not the owner had the burden of maintaining the sewers of a property which was the subject of the usufruct.⁶² Again, an heir was liable to pay any outstanding tax, including what was levied for sewerage or water supply, on land which had been left as a legacy.⁶³

LATRINES

Many houses, and certainly most tenement blocks, do not appear from archaeological evidence to have had main drainage (and if they did, it seems to have been only at ground-floor level). This is hardly surprising, since most houses in Rome did not have a running water supply,⁶⁴ but water was fetched from the street fountains or basins. At Pompeii, as at Ostia,⁶⁵ there are more traces than in Rome of connection to the public sewers. Anything resembling water closets,⁶⁶ seats sited over running water, must have been rare in private housing. Some houses seem to have had cess-pits,⁶⁷ but mostly people must have used commodes⁶⁸ or just chamber pots⁶⁹ which slaves will have emptied down the drain, or perhaps loaded on the wagons taking out the night soil—we shall

60 D.43.23 *de cloacis* 1.2–3 & 9 & 16, Ulpian 71 *ad ed.*

61 D.43.23.2, Venuleius 1 *interdict*

62 D.7.1.27.3, Ulpian 18 *ad Sab.*

63 D.30.39.5, Ulpian 21 *ad Sab.*:...vectigal praeteritum vel tributum vel solarium vel cloacarium vel pro aquae forma.

consider these in a moment under cleansing services. The references which we do have on the siting of latrines probably refer to the country;⁷⁰ Cicero said that architects must keep from the eyes and noses of householders ‘those fluid substances which would unavoidably contain an element of offensiveness’.⁷¹

There were however public latrines, 144 according to the *Breviarium* of the *Curiosum Urbis*⁷² of the Later Empire. Dio reports that the Senate ordered the room in the Curia Pompeia where Caesar had been murdered to be turned into a public latrine.⁷³ They seem to have been a normal concomitant of public baths, with which they could share water supply and drainage, and presumably of private ones for the same reasons; they were also likely to be found at other convenient sites.⁷⁴ It seems likely that access was free, but perhaps there was a token payment when they were separate from the baths; it seems reasonable to suppose that the entrance fee to private baths would cover the latrines as well. We do not know the location for Suetonius’ story of Lucan as a young man who had fallen out of favour with the emperor and was speaking his mind: ‘once in the public lavatories, after a too-evident rumble from his belly, he uttered a half-line of Nero’s which caused his fellow-sitters to leave en masse: “Would you suppose that it was thundering under the ground?”’.⁷⁵ Public lavatories were clearly often comfortable places, warm and well decorated,⁷⁶ where one might sit and read or otherwise amuse oneself sociably, hoping for invitations even.⁷⁷ (This picture does not fit with the stories told of ‘bad’ emperors, under whom it might even be construed as treason to carry into a latrine or brothel a coin or ring bearing the emperor’s portrait.⁷⁸ One suspects literary exaggeration here.⁷⁹)

Public urinals, on the other hand, seem simply to have been large jars, *dolia*, cut short for convenience and hence often called *dolia curta*,⁸⁰ which were

64 Martial 8.67: *Caldam poscis aquam; nondum mihi frigida venit*. See ch. 7.

65 Meiggs (1973):143; Richardson (1988):59–62.

66 Thédénat (1904a).

67 Lanciani (1897):32, fig.15; common at Pompeii according to Mygind’s article in *Janus* 25 (1921) cited by Scobie (1986):400ff; Richardson (1988): 61.

68 Horace *Sat.* 1.6.109—*lasanum*; Petronius *Sat.* 41 & 47.

69 Petronius *Sat.* 27; Martial 6.89; cf. 3.82.15–17; 14.119.

70 Certainly in the case of Columella 9.5.1—near an apiary—and Varro *RR* 1.13.4 & 1.6.24.

71 Cicero *nat. deorum* 2.56.141.

72 *Breviarium* 6.10; their size is unknown. There are 116 *necessariae* listed in Richter’s *Topographie* as sited along the Aurelian Wall, but these were, almost certainly, classed separately. On *foricarii*, Lanciani (1897):32; 81; Nash (1981) plate 159.

73 Dio 47.19; cf. Martial 12.61; 12.77.

74 For instance, the author has photographs of the splendid set beside the forum at Vaison la Romaine. In Petronius fragment xiv(xiii) the term *aumatium* seems to refer to the kind of privy to be found at the theatre or Circus.

regularly emptied and the contents sold to the fullers; there is the famous story that Titus complained when Vespasian imposed a tax—*urinae vectigal*—and Vespasian asked him if the money smelled bad.⁸¹ One gathers from both literary⁸² and legal⁸³ texts that public contracts were let to those who collected and sold the urine; the fisc demanded interest from them if their payments were late. Since these *dolia* were in the streets, their overall supervision presumably fell to the magistrates responsible for the streets, aediles or the *IVviri*; other public latrines were probably also the concern of the aediles, since the regulation of the baths was in their charge, and then of their successors in this function. ‘Committing a nuisance’ is not a new problem; there is the grave with the hopeful plea inscribed on it: ‘Ne quis hic urinam faciat’, and Juvenal was unkind about the problems of women returning home.⁸⁴ (One wonders if at least some *popinae* and *tabernae* had a chamber pot for the use of female customers or staff; proper inns and hotels will have been equipped to the same extent as any other house.)

Urine was bought by the fullers as it was used particularly for cleaning woollen material, such as togas. (It seems likely that many fullers were also laundrymen,⁸⁵ particularly as we do not hear of public wash-places for women, though the Tiber may have been used where it was not embanked for docks and other purposes.) The disposal of excrement not washed down the sewers must have been a problem. The quantity must have been very considerable, in view of the population. The agricultural writers point out that it could be aged into useful manure,⁸⁶ there were market gardens all round Rome. It was presumably often taken out of the City as night soil; some was dumped in the open pits on the Esquiline (and doubtless other places) into which all sorts of refuse, including the bodies of the poor and animal carcasses, was also thrown.⁸⁷

75 Suet, *de perd. lib. rel.* (Teubner, p. 299): adeo ut quondam in latrinis publicis clariore cum strepitu ventris emissi hemistichium Neronis magna consessorum fuga pronuntiavit: ‘Sub terris tonuisse putes?’.

76 Meiggs (1973):411.

77 Martial 11.77: Why does Vacerra spend his hours In all the privies, and day-long sit? He wants a supper, not a shit. Cf. 5.44; 12.19.

78 Suet. *Tib.* 58, though Suetonius does class this as a far-fetched accusation. This may be the origin of the unlikely allegation that it might even be held treasonable to urinate where there were statues or portraits of the emperor—SHA *Caracalla* 5. Cf. Dio 58 *post*, fr. 2.

79 The jurists held that a chance-flung stone which hit an imperial statue did not make the thrower guilty. D.48.4.5.1, Marcian 5 *reg*.

80 Lucretius 4.1026–9; Propertius 4.5.73; Martial 6.93; Macrobius 3.16.15, claiming to cite a Republican authority.

81 Suet. *Vesp.* 23; cf. Martial 6.93.1–2.

82 Juvenal 3.38, and Scholiast.

83 D.22.1.17.5, Paul *de usuris*.

CLEANSING SERVICES

We know that water was important for the regular cleansing of streets and sewers. We hear too of carts used for taking away various kinds of refuse, including night-soil, as we have mentioned when considering the regulation of traffic.⁸⁸ Valerius Maximus tells of the body of a man murdered by an innkeeper and just at that moment being carried off, covered with night-soil, in a wagon to the gate.⁸⁹ Messalina escaped to Ostia in 'a vehicle in which the refuse of the gardens is removed'.⁹⁰ The abusive potential of night-soil is magnificently recorded in the famous case from Cnidos.⁹¹ The Romans were admittedly better off than we are in terms of litter—plastic and gift-wrapping alike being unknown to them; we do, however, hear of fish being wrapped in paper and the same of olives.⁹² However, I can think of no reference to dog dirt—and there were plenty of dogs.⁹³ What happened to old copies of *Acta Diurna*?

In the Republic and the early Empire it was the aediles who were responsible for keeping the streets clean.⁹⁴ We have already mentioned in this context the Julian law and Papinian's fragment on streets and drains.⁹⁵ If, as seems likely on *a priori* grounds, the cleansing service was let out by the aediles, these contractors, like the *foricarii*, would have been concerned with making a living, and the customer must have paid. There may possibly have been regular routes for refuse carts; there may perhaps have been local dumps, from which the cleansing services would collect.⁹⁶ It seems logical to assume that there were rag and bone men, but these are unevidenced. What is noticeable is that there has not survived any expression of Roman satisfaction—or otherwise—with rubbish collection or refuse disposal; this may be chance, or it may be that it left no monumental remains to admire—no aqueducts, baths, sewers—or because the Romans did not see this as a matter for public concern. But something must have

84 ILS 8203 (=CIL VI 3413); Juvenal 6.309–13; cf. Juvenal 1.131.

85 D.12.7.2, Ulpian 32 *ad ed*; 39.3.3pr, Ulpian 53 *ad ed*.

86 Columella 11.3.12. In summer it would presumably have dried to a crumble reasonably quickly—cowshed information from Israel—but human manure is slower to degrade than that of grass-eaters; the Roman diet was, however, cereal-based.

87 Lanciani (1888):65–7.

88 FIRA i 13 (p.140ff), *tab. Heracleensis* v. 66: plostra...stercoris exportandei

been done, whether by public slaves or by contractors, if the aediles and other magistrates were to fulfil their duty.

BURIALS⁹⁷

Burials may seem a somewhat odd topic to precede rather than succeed medical care, but the link is really with refuse disposal and cleansing services. What about the human hand the dog dropped in front of Vespasian⁹⁸? In fact, from at least the time of the Twelve Tables, hygienic considerations had led the Romans to prohibit burials and cremations within the City.⁹⁹ That this was not a taboo, a moral uncleanness, is indicated by the presence of a few inhumations within the *pomerium*; Vestal Virgins and some other privileged persons continued to be, or to have the right to be, buried within the City. Cicero supposes that the prohibition in the Twelve Tables was because of the danger of fire; certainly pyres or burning mounds were forbidden within 60 feet of another's building, except with his consent.¹⁰⁰

Cicero also records that the college of pontiffs had prohibited graves in public places; indeed, the pontiffs had ordered largescale exhumations in the area outside the Colline Gate, but this was because it was not felt proper that private citizens should be able to change the legal status of public property. Outside the City and its immediate environment there seems to have been no general control of burial grounds; all that was required was that no-one be buried in another's land without permission, and that land once consecrated by such use be not subject to ordinary commercial dealings.¹⁰¹ There are immense cemeteries outside Ostia and, very visibly, along the via Appia. These and other suburban areas provided burial space for the rich and their dependents and for the moderately well-to-do. Their rights were protected by the interdict *de mortuis inferendis*.¹⁰²

89 Val. Max. 1.7 ext.10.

90 Tac. *Annals* 11.32; but this may already have been outside the City boundary. Ulpian's context is admittedly the country not the City, but he tells us that among the working tools —*instrumenta*—of a farm are to be classed the wagons which carry away the dung—D.33.7.12.10, Ulpian 20 *ad Sab*.

91 FIRA iii 185 (p.582ff). A chamber pot was flung out of an upstairs window onto a man below, who was being persistently abusive; unfortunately, it killed him.

92 Catullus 95.8; Persius 1.43; Martial 13.1.

93 E.g. D.9.1.2.1, Paul 22 *ad ed*; Toynbee (1973):107–22.

94 See [ch. 5](#).

95 FIRA i 13 (p.140ff), *tab.Heracleensis* vv. 20–3; 50–2; 56–61; 66–7; D.43.10.1, Papinian *de cura urbium*.

96 Scobie (1986):414, cites a recent graffito from Herculaneum recording payment for the removal of ordure: *exemta stefrjcora a[ssibus]* XI.

The Romans seem to have felt no need for economy in their use of land for this purpose. But to acquire such a site cost money which the ordinary urban poor, let alone the vagrants and homeless, could hardly have afforded. Their corpses seem simply to have been cast into open pits, and presumably these were lightly covered at fairly regular intervals. The Esquiline Field was one of the burial places of the poor. Notices from around 80 BC on boundary stones which were posted there by a praetor on the recommendation of the Senate give warning that on the City side there were to be no cremation fires nor were corpses or refuse to be dumped.¹⁰³ Another inscription from the Esquiline Field¹⁰⁴ records a resolution of the Senate which imposed on the plebeian aediles some jurisdiction over those who had the duty of making sure that no fires were lit nor refuse dumped there. Presumably this too applied to the City side. The aediles had the care of the City in their charge, but a praetor's threat could be backed by his *imperium*.

This and other burial areas were covered with four to eight metres of earth and converted into gardens at the beginning of the Principate¹⁰⁵—Lanciani said it still smelled when excavated at the end of the nineteenth century¹⁰⁶—and the process will have started again further out from the City and presumably on a scale suited to the locality. The earth removed in the creation of Trajan's Forum was used to cover the burial ground between the old and the new via Salaria; however, the land remained 'religious' it seems.¹⁰⁷ The size of Rome's population seems to have defeated the authorities, in the Late Republic anyway, in disposing of human remains, but at least the exclusion of burials from the City proper will have fulfilled some of the demands of hygiene. It is generally reckoned that cremation (which, of course, also caused pollution) decreased relative to burials about the end of the first century AD,¹⁰⁸ perhaps the invention of *columbaria* helped deal with the problem of the disposal of human remains.

97 See Robinson (1975); Kaser (1978).

98 Dio 65.1. Or the corpse in the road at which Nero's horse shied— Suet. *Nero* 48.

99 Cicero *de leg.* 2.23.58.

100 *ibid.*, 2.24.61.

101 D.11.7.2, Ulpian 25 *ad ed.*; cf. ILS 8391 (=CIL X 3334), the *sententia Senecionis*.

102 D.11.8 *passim*.

While the praetor dealt with the disputes of private citizens over funerary matters, and in particular funeral expenses,¹⁰⁹ the aediles might be the magistrates—delegated by the pontiffs? or appointed by the family?—to whom the power was given to modify private rights by permitting further burials in a family tomb.¹¹⁰ Their edict *de funeribus* is mentioned by Cicero.¹¹¹ They seem to have been responsible for the general supervision of decency in graveyards and at funerals.¹¹² For regulation elsewhere than at Rome the *lex Ursonensis*¹¹³ would seem exemplary. It forbade the introduction of bodies, burials or cremations within the town's boundaries, and also the building of funeral monuments; new burning mounds were to be at least half a mile from the town.

The pontiffs exercised a control in determining religious questions, such as when there was good reason, for example permanent flooding, for the re-inhumation of a corpse,¹¹⁴ and perhaps also in deciding whether an authorised burial had made a place *religiosus* or merely put it into the public domain.¹¹⁵ But the emperor, perhaps as *pontifex maximus*, perhaps from secular interest, claimed some degree of control.¹¹⁶ Marcian quotes¹¹⁷ a decree of the *divi fratres* forbidding disturbance of a corpse, but permitting the transfer of a coffin with its contents to some more convenient place if circumstances required; this may perhaps have referred to a provincial case.¹¹⁸ It is possible that an inscription¹¹⁹ recording the removal of a body *permissu trib. plebis* refers to the emperor's tribunician power. The pontiffs had also controlled the repair of tombs and monuments.¹²⁰ The imperial enactments preserved in Justinian's Code on funerary matters¹²¹ are largely from the pagan Empire and show the emperors acting with pontifical power, confirming particular applications of the general rules.

103 ILS 8208 (=CIL VI 31614): L. Sentius C. f. pr[ae]tor de Sen. sent, loca terminanda coer. Nei quis intra terminos propius urbem ustrinam fecisse velit nive stercus cadaver iniicisse velit.

104 ILS 6082 (=CIL VI 3823).

105 Horace *Sat.* 1.8; Lanciani (1897):405–6; 411–12.

106 Lanciani (1888):67.

107 Homo (1971):42–3.

108 Festus, 29L, *bustum*; e.g. Hopkins (1983):211, n.14.

109 D.11.7 *passim*.

110 ILS 8388 (=CIL VI 12389).

111 Cicero *Phil.* 9.7.17, where its operation is remitted, to allow the burial of Servius Sulpicius Rufus within the City.

112 E.g. Ovid *fast.* 6.663–4.

113 FIRA i 21 (p.177ff), *lex Ursonensis*, cc. 73–4.

114 e.g. ILS 8380 (=CIL VI 2120), or FIRA iii 85e (p.275).

MEDICAL SERVICES

This topic hardly has a place in an account of public health at Rome between the last century BC and the end of the Principate, for it was only in the fourth century that medical services and anything approaching hospitals became normal for civilians. The temple to Asclepius was built on the island in the Tiber because of the plague of 295 BC;¹²² this provided the first area set aside for the sick, but it was no more than a waiting-room for prayer. Sick slaves who were abandoned there by their masters were freed (as Latins) by an edict of Claudius.¹²³ The language of all the medical treatises, except that of Celsus, is Greek; if one considers the various words for hospitals and the like— *xenodochium*, *nosocomium*, *brephotrophium*, *orphanotrophium*— only *valetudinarium* is a Latin word. The owners of large estates, the heads of great households, felt able and obliged to care for their dependants, making use of sick-bays and convalescent areas; we see this in the agricultural writings of Cato, Varro and Columella, and even in Martial we find a *narthecium* (medicine chest) mentioned as a suitable gift.¹²⁴ And the major Latin author, Celsus, was probably an amateur not a professional. Even in the legions, it was only under the Empire that persons claiming to be trained¹²⁵ in medicine came to have a reasonably high status, as can be deduced by the readiness to grant *restitutio in integrum* to *medici militum*.¹²⁶ There were, it seems, military hospitals,¹²⁷ but their development for civilians was largely a phenomenon of the Christian Empire.¹²⁸

Modestinus, a late classical jurist, tells us that medical practitioners were exempt from the burden of tutories, as well as of other public duties, and recorded that Antoninus Pius had allowed to the smaller towns of Asia five doctors with exemption from public burdens, to the larger cities seven, and to the largest ten.¹²⁹ There was clearly some recognition of what made a trained doctor,¹³⁰ because we have texts remarking that a city can withdraw recognition and the

115 Cicero *de leg.* 2.23.58.

116 D.11.7.8pr, Ulpian 25 *ad ed.*

117 D.11.7.39, Marcian 3 *inst.*

118 Cf. Pliny *Ep.* 10.68–9.

119 ILS 8389 (=CIL VI 20863).

120 E.g. ILS 8382 (=CIL VI 2963); D.11.8.5.1, Ulpian 1 *opin.*

121 CJ 3.44 *passim*.

122 Livy 10.47; Val. Max. 1.8.2.

123 Suet. *Claud.* 25; D.40.8.2, Modestinus 6 *reg.*; CJ 7.6.1.3—AD 531.

124 Martial 14.78.

125 Cf. Martial 5.9 and the ninety cold hands—of medical students—on his pulse.

126 D.4.6.33.2, Modestinus *de enucl. casibus*.

127 Davies (1989), ch. x, ‘The Roman military medical service’, pp. 209–36.

consequent privileges.¹³¹ This seems to mark a definite stage of advance in medical care. Antoninus Pius' moves may have been universal, but they were modelled on existing practice in the eastern provinces, where the cities seem to have employed doctors long before they were recognised by Rome with privileges.¹³² The first certain reference to a medical officer of health for Rome is not until 368,¹³³ when there is mention of senior physicians for each of the regions who are to 'prefer to minister to the poor honourably rather than to serve the rich shamefully'—not only an ancient complaint. It may be unlikely that Rome should lag so far behind the provinces,¹³⁴ but it is very clear that she did not lead. It has even been suggested that Romans of the Republic and early Empire wanted philosophy, compassion and companionship from a doctor rather than a cure.¹³⁵

In the City it does not seem safe to run far ahead of the evidence. For most of our period the upper classes felt superior to the majority of doctors, who would normally be Greeks, and frequently slaves or freedmen,¹³⁶ while the lower classes seem to have distrusted them all as quacks.¹³⁷ While the social and professional status of doctors was certainly improving in the second and third centuries, as seen by the change in their patients' contract with them from *locatio conductio* to man-Ulpian *de off. curatoris r. p.*; 34.1.16.1, Scaevola 18 dig: ...uti publice (quod medicus erat) salaria ei praestarentur. date,¹³⁸ it was not necessarily very high.¹³⁹ Their acceptance into the framework of local government may well have been postponed until the Christian Empire.

128 Though Celsus *proemium* 65 could refer to those in charge of large hospitals—*qui ampla valetudinaria nutriunt*—but he may be thinking of the East.

129 D.27.1.6.1–4, Modestinus 2 *excus*; h.t.11, Paul *de excus. tutorum*; 50.9.4.2,

130 There was some degree of specialisation; we hear of a *medicus clinicus, chirurgus, ocularius*—ILS 7812 (=CIL XI 5400)—of a *medicus auricularius*—ILS 7810 (=VI 8908)—a dentist—Martial 10.56; implicit in Cicero *de leg.* 2.24.60.

131 D.27.1.6.6, Mod. 2 *excus*, citing Ulpian 4 *de off. proconsulis*; 50.4.11.3, Modestinus 11 *pandect*, but cf. 50.9.5, Callistratus 2 *de cognit*, where such withdrawal can only be for good cause.

132 D.34.1.16.1, Scaevola 18 *dig.* shows a woman requesting an official salary from the local municipality for her freedman—*quod medicus erat*.

133 CTh 13.3.8–9—AD 368.

134 Below (1953):49.

135 Scarborough (1969):113–14.

136 D.38.1.25.2, Julian 65 *dig.*; h.t. 26pr & 27, Alfenus 7 *dig.* & Julian 1 *ex Minicio*; 40.5.41.6, Scaevola 4 *resp.*

137 Martial 1.47 probably reflects popular opinion: Diaulus, ex-physician, /Now works as a mortician. What's in a name? /The job's the same.

CIVIL REMEDIES AND PUBLIC HEALTH

The Roman chemical and transport industries were insufficiently developed for them to know many of the risks with which we must live: Chernobyl, Flixborough, Bhopal, Seveso, or simply a lorry shedding its load. But they did recognise the problem in principle. The interdicts generally were used for the well-being as well as the convenience of the public. Servitudes were not necessary to uphold a man's basic right to light, that is, a view of the sky from his windows, and to access to the public street.¹⁴⁰ And the same sort of legal mechanism could, although it did not always, protect a man from his neighbour's fumes or steam.¹⁴¹ The precise boundaries will, must, always be debatable, but the framework for high density yet civilised living was achieved.¹⁴² One should remember Vitruvius' remark¹⁴³ that cornices should be plain and therefore easily dusted in rooms where there were fires or lamps. 'For plasterwork, with its glittering whiteness, takes up the smoke that comes from other buildings as well as from the owner's.' It does not seem that he would have been surprised by the concept of passive smoking.

138 To illustrate the general theme of health there is a text on a mandate to a Ravenna physician to build a *sphaeristerium*—D.17.1.16, Ulpian 31 *ad ed.*

139 As appears from D.50.6.7(6), Tarruntenus Paternus 1 *militarium*, originally concerned specifically with military matters.

140 See [ch. 3](#).

141 D.8.2.13pr, Proculus 2 *ep*; 8.5.17.2, Alfenus 2 *dig.*; cf. Martial 13.32.

142 Cf. D.8.5.8.5,6, Ulpian 17 *ad ed.*

143 Vitruvius 7.3.4.