

ita pestilens est odore taeterrimoAuthor(s): Ann Olga Koloski-Ostrow

Source: *The Classical Outlook* , Vol. 93, No. 2 (2018), pp. 53-61

Published by: American Classical League

Stable URL: <https://www.jstor.org/stable/10.2307/26537813>

REFERENCES

Linked references are available on JSTOR for this article:

https://www.jstor.org/stable/10.2307/26537813?seq=1&cid=pdf-reference#references_tab_contents

You may need to log in to JSTOR to access the linked references.

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



JSTOR

American Classical League is collaborating with JSTOR to digitize, preserve and extend access to *The Classical Outlook*

*ita pestilens est odore taeterrimo*¹: Reading Roman Sanitation from the Sources

Ann Olga Koloski-Ostrow
Brandeis University
aoko@brandeis.edu

INTRODUCTION

Pliny the Younger's governorship in the crisis province of Bithynia-Pontus clearly demonstrated his ability to work with local elites to gain their cooperation on a number of issues. In his *Ep.* 10.98-99 to the Emperor Trajan (98-117 CE) about conditions in the city of Amastris (modern Turkey), Pliny here reminds us of the fact that he had once been responsible for the sewers of Rome.

Among the chief features of Amastris (a city which is well built and laid out) is a long street of great beauty. Throughout the length of this street, however, runs what is called a stream, but is, in fact, a filthy sewer, *a disgusting eyesore that gives off a noxious stench (ita pestilens est odore taeterrimo)*. The health and appearance alike of the city will benefit if it is covered in, and with your permission this shall be done. I will see that money is not lacking for a large-scale work of such importance.²

Pliny the Younger's job led him to inspect not only specific expenditures in the towns of his province, but also to check on the incomes of the towns. Most of his measures, in fact, focused on the reorganization of public finances. Only rarely did he try to change things structurally or take on a building project, as he recommended for Amastris. This particular letter, therefore, has always stuck me as especially noteworthy, since Pliny the Younger actually proposes a strikingly practical solution to a specific urban problem: the covering of the polluted open sewer in Amastris. He justifies his solution with a description of the hideous proportions of the problem (*ita pestilens est odore taeterrimo*). The letter, however, does not mention the disgusting sewer as a deterioration of a public health standard, as we would see it today, but merely addresses the unpleasant problem as a stinking mess.

Over the past one hundred and fifty years, we can identify two key factors that have shaped our modern

notions of public sanitation and the development of a public health system: first, the growth of scientific knowledge about sources of diseases and means of controlling them; second, a growing public acceptance of disease control as both a possibility and a public responsibility. As understanding of the sources of contagion, germ theory, and various means for controlling disease became more refined, officials developed more effective interventions against various health threats.

Eventually public organizations and agencies were formed to employ newly discovered interventions against dangerous health hazards. As scientific knowledge grew, public authorities expanded to take on new tasks, including better definitions and implementation of sanitation, immunization, regulation, health education, and better personal health care.³ The eventual constitution of a public health system for protection against disease depended both on scientific discovery and on social action. Scientific understanding of diseases spearheaded efforts to alleviate pain and suffering, and social values about the worthiness of protecting the general population encouraged the feasibility of more and more public measures. In the Roman period, when little was known about the causes of any diseases, society tended to regard most illnesses with a degree of resignation, and few public actions were taken to control or eradicate them.

People often assume that the Romans understood public sanitation in the same way that we do today, that is, as a necessary step in avoiding public health hazards. Because they built sewers and toilets that flushed into them, we often assume that the Romans enjoyed a relatively high standard of public health in their cities. To argue that the Romans built sewers and toilets to improve general standards of public health, however, would be making a mistake, although the measures they did take likely improved cleanliness in cities to some degree.

In this article, I challenge some common modern perceptions about a variety of Roman beliefs concerned with health, attempt to understand more about the Roman tolerance for filth in their cities, and also reveal why imposing our standards on the Romans can lead to serious misconceptions about the realities of Roman daily life. We seek to know: Did the Romans even have

a concept of sanitation akin to ours, at least to ours in the modern western world? Did the Romans proactively try to improve public sanitation in their cities? What are the pitfalls of attempting to discover Roman ideas about public sanitation from both the fragmentary literary and archaeological records? Can we learn anything, in the end, from such an exercise?

LITERARY EVIDENCE, MOSTLY CONCERNING THE CITY OF ROME

Sewers, toilets, dirty rivers, and their excretory contents barely show up at all in Roman literary works, and when they do (sometimes in the most surprising authors), we must be very careful about how we “read” them if we are seeking clarity on Roman attitudes towards personal hygiene, rituals of elimination and bodily evacuation, or the function of so-called sanitary installations.⁴ I have given this topic a more thorough coverage elsewhere,⁵ but here are just a few examples from a variety of Roman authors to demonstrate why talk about sewers in the Roman context does not necessarily equate to talk about sanitation.

In works of Roman comedy, satire, epigrams, letters, and novels, the sewer and its contents take on new shades of meaning beyond the purely functional. Cicero, for example, superimposes a sewer system of a Roman house on the workings of a human intestinal system.⁶ The sewer system for him operates as a metaphor for stages of a hierarchical system. He critiques Roman political and social structures through a comparison with the structural systems of the human body—head at the top and excretory channels near the bottom. Elsewhere, Cicero shows no qualms about applying the language of the sewer and its disgusting contents to those he considered Rome’s lowest scum, society’s dregs, like the lees of wine, *infima faex populi*, “the lowest dregs of the people.”⁷

Livy also treats the city of Rome by way of the same metaphor of the human body and the way its evacuation systems work from top to bottom. The capital city was built on the site of “the head” (*caput rerum*, “the head of the world”). But Livy also recognizes the value of the city’s foundations, the Cloaca Maxima, in particular, a major *immensum opus* or “huge work,” famed for its structural solidity and durability.⁸ The sewer was the gift of the Tarquin kings, while at the same time a dirty and dangerous underbelly of the city. Pliny the Elder also praised the Cloaca Maxima in Rome as powerful and impregnable, a mighty accomplishment for

historians to note, but revolting and clogged with refuse and murdered bodies.⁹ The point is that none of these Roman authors talks about the Cloaca as the savior of sanitation.

Petronius’ fragmentary novel, *Satyricon*, is likewise rich in allusions to bowels, effluvia, bathing dirt away, and the foul language of the sewers and latrines.¹⁰ Characters in the novel, especially in the longest preserved section known as the *Cena Trimalchionis*, eat, drink, vomit, urinate, defecate, fornicate, sweat, fart, and burp so frequently that lines between what is good and acceptable behavior and what is gross and rude are blurred and confused. Food begins to look like excrement or is composed of the excretory parts of animals (testicles, guts, and other offal).¹¹ Petronius’ remarkably inventive imagery, his “toilet talk,” and the excessive behaviors of his characters represent dark humor, not desirable sanitary practices.

Juvenal¹² gives us a vivid, if satirical, image of street life in Rome of the first century CE. Much of what he laments about is noise, chaos, and smell. Still, we can sense a powerful Roman reality from the text: from wet mud—the mud on the streets is ultimately compared to the horrid “muddy whirlpool” of the River Styx itself; from the sweat of too many people crowded into too little space; from the slowly lumbering animals with their nasty habit of voiding onto the streets; from the steaming foods filling the pots and pans on the heads of kitchen slaves scurrying by; and even from the construction materials precariously carried through the streets towards their unknown building sites. Juvenal’s cacophony of sounds and smells would indeed make “the sick die from insomnia,” but his motives for telling us about these issues are for humorous effect, not for instruction regarding health or sanitation.

These literary examples lay out for the reader a colorful mixture of sounds, tastes, sights, and smells trapped inside the house, stuck in the sewers, or wafting through the narrow streets of the city. None of these images, however, conjures up health, sanitation, or cleanliness.

ARCHAEOLOGICAL EVIDENCE: POMPEII, HERCULANEUM, OSTIA, AND ROME

Much of Roman urban daily life with all of its powerful stimulation for all five senses was dangerously unsanitary by modern standards. The smells of freshly baked goods¹³ and recently picked vegetables and fruits in the markets and the sour odors of the streets (dirty runoff, bloody carcasses, and human and animal excre-

ment and urine¹⁴) would have mixed with the fumes from the endlessly burning funeral pyres sizzling with human flesh at the edges of the inhabited city.¹⁵ Many aspects of Roman urban life deserve further exploration, but here we limit ourselves to only a few. Let us begin with a word about sewers.

The sewers of Pompeii are virtually unexplored,¹⁶ but they were likely constructed in close conjunction with two sets of the city's public baths (Forum and Stabian), and their main purpose was to remove out of the city and away from the baths substantial quantities of dirty water. This same dirty water simultaneously flushed some public toilets on its way to outside the city walls. From what we know about urban infrastructure at Pompeii so far, substantial parts of the city simply had no sewers at all, so filth, manure, and dirty water were just washed down the sloping streets at whatever pace the cycle of winter rains allowed. The same situation existed in Herculaneum.

Early excavators at Herculaneum¹⁷ found an ancient deposit of hardened sludge¹⁸ measuring about 1.35 meters high at the bottom of the sewer under *Cardo V*. No amount of water, no matter how fast flowing, was ever able to remove it. Several ancient sources state that Roman *cloacae* needed manual cleaning from time to time, and Pliny the Younger mentions prisoners conscripted for this job in Rome.¹⁹ I would argue that the discovery of deposits such as the one in Herculaneum strongly supports the notion that urban sewer systems provided minimal sanitary benefits overall.

No one has yet charted the full extent of the sewers of Ostia either, but many sewer covers are visible, so by following them, we can identify the main sewer lines from the surface.²⁰ As this town was also very close to the Tiber, flooding was a constant problem, so construction of cesspit toilets was not practicable everywhere in the city. We do often find them, however, in some apartment houses, and they are usually located off the courtyard. We can, at least, accurately surmise that the Ostian sewer system received excreta as well as water runoff.

The Cloaca Maxima in Rome was not constructed with much thought about what we would call sanitary engineering. The sewer instead did help remove water pooling²¹ on the uneven streets, either because the water got stuck in low-lying areas, or because flooding from the Tiber River would have turned the streets into rivers of dirty water without the sewer and its run-off channels. As it turns out, the Tiber flooded quite fre-

quently.²² Apart from what often was stuck in the channels of the sewer itself, all of the mud and other debris in the sewer drained off directly into the Tiber. As the Tiber was Rome's major drinking supply before the aqueducts, clearly no one was paying much attention to the sanitary quality of the water supply with such polluted detritus being dumped into it.²³ I would argue that drainage was the primary function of Roman sewers. Sewer builders were not thinking about removing disease-causing waste, but instead about draining water from low-lying areas. The "Roman perspective" on sewers, then, has little or no connection to issues of health and sanitation.²⁴ Because of their drainage capacity, the sewers inevitably did, to a certain extent, clean up the streets, but they did not contribute much at all to improved urban sanitation, and the drainage of Rome's sewer contents into the Tiber, the drinking supply, caused more health hazards than it solved.²⁵

So, what about toilets and their relationship to sanitation? While finding Roman toilets in Rome is a complicated process as it is a lived-in city and much of such evidence has been destroyed, the inhabitants of Pompeii and Herculaneum in the first century CE, at least, had a clear preference for internal cesspit toilets in domestic dwellings without sewer connections in those dwellings. Ulpian (writing 211-222 CE, whose works were compiled in the *Digest* in the sixth century CE) tells us that connections to the sewers from private dwellings certainly were legal,²⁶ so we must wonder why so few property owners connected their toilets to public *cloacae*, a fact we are exploring more closely amid the ruins of toilets (public and private) in the city of Rome now.²⁷

Almost every private house in Pompeii and Herculaneum, and many apartment houses in Ostia, had private, usually one-seater, toilets that were not connected to the main sewer lines. Romans often sited these cesspit toilets in or near kitchens, where food was prepared, such as the one in the House of the Grand Doorway (V.35) in Herculaneum (Fig. 1) and in the House of the Ceii (I.6.15) in Pompeii (Fig. 2, reconstruction). The warm and homey smells from a hearty stew would have intertwined with the the gross odors from the open cesspit in the kitchen (Fig. 2).



Figure 1. Herculaneum, House of the Grand Doorway (V.35), cesspit toilet in kitchen.

Photo Credit: Koloski-Ostrow



Figure 2. Pompeii, Kitchen scene – Villa of Cei in Pompeii: Kitchen scene with toilet under the stairs.

akg-images / Peter Connolly

This discomforting arrangement must have been outweighed by something—and I propose that the convenience of preserving the contents of the cesspit, namely human excrement, as a valuable household commodity is our answer. Fertilizing household gardens and plants with human excrement or selling it to farmers for fertilizer were common practices.²⁸

Another serious sanitary problem inside Roman houses was leakage from downpipes of toilets located on upper floors. At least fifteen upper storey latrines have been identified at Pompeii, especially in regions V, VI, VII, VIII, and IX,²⁹ and the situation was similar at Herculaneum (Fig. 3). The fittings of these terracotta downpipes loosened over time, and their contents would have spilled down the outside of the pipes, causing stink everywhere.



Figure 3. Herculaneum, House VI.29, leaky downspout.

Photo Credit: Koloski-Ostrow

Since Roman sewer openings had no traps, one could never be sure what might climb out of an open sewer leading to a toilet and therefore into a house, so this would be one reason to resist a sewer connection. The story told by Aelian³⁰ (175-235 CE) elucidates the concern clearly. He tells us about a giant octopus that swam every night from the sea into the city sewer and up the

drain of a toilet into a house owned by a wealthy Iberian merchant in the city of Dichearchia (Roman Puteoli, modern Pozzuoli). When the clever octopus arrived by way of the hole in the house toilet, he ate all the pickled fish stored in the merchant's well-stocked pantry. In Aelian's fable, the poor, hungry octopus is bludgeoned to death, but the story illustrates very well why house owners anywhere might think twice before desiring that their house toilet(s) be connected to the sewer.

Public toilets, however, multi-seater latrines, were almost always connected to the main sewer lines of a city (Fig. 4). These toilets posed their own set of serious threats to their users. They were notorious for terrifying customers by exploding flames from their seat openings. Gas explosions of hydrogen sulphide (H_2S) and methane (CH_4) that were rank as well as frightening must have occurred frequently, and such occurrences would have strengthened a general urban superstition about sewers and toilets. Superstition regarding demons provided another good reason for avoiding sewer connections.³¹ Customers in public latrines also had to worry about the rats and other small vermin threatening to bite their bottoms. Lots of anxiety must have been generated by those black holes. Under these circumstances, Romans were not likely to see their toilets in terms of improved sanitary conditions, as we view them today.



Figure 4. Ostia, Forum Latrine
Photo Credit: Koloski-Ostrow

Digest (Ulpian) warns about contaminating public water supplies or covering anyone with dung or mud,³² which again suggests that these indiscretions occurred often enough for officials to take some notice. In *Herculaneum* in the House of the Black Salon (VI.11-13) on a half column of the peristyle is one inscription recording the payment of eleven *asses* for the removal of ordure.³³ Another painted notice is on the side of the

water tower at the northern end of *Cardo IV*, just as this street meets the *Decumanus Maximus*. This inscription bans the dumping of rubbish in the vicinity of the water tower.³⁴ People living in houses or tenement buildings very likely dumped debris wherever they could find a space on a side street or alley or abandoned lot, and unfortunately, no system for its removal was in place and no one had developed an efficient way to police such disturbing practices.

The Romans did develop sophisticated methods for managing dirt and detritus, including the provision of fresh water from aqueducts, sewers for removing dirty water from baths, from open plazas, and roads, and the building of public and private latrines. These constructions, however, do not automatically tie closely to notions of public sanitation that we hold today, and the sooner we realize and acknowledge this fact, the closer we shall come to a better, more accurate appreciation of Roman daily realities.

CONCLUSIONS

When we look more closely at the conditions in impoverished and crowded Roman apartment complexes, we can easily see how they generated a mass of unsanitary situations that must have been almost overwhelming every day. Apartment dwellers regularly experienced everything from bad breath, to lice-encrusted hair on themselves and their neighbors, to stench from infected and oozing wounds, to the hopeless, unceasing presence of disease and chronic pain. The buildings themselves were moldy, damp, smoke-filled, and serviced by often-stagnant wells and clogged cesspits (not connected to sewers).

The same Roman psyche that ultimately called for the ordering and removal of filth by the sewers seems to have inspired the development of massive urban cemeteries and dumps over time. The separation of the living from the dead was a vital feature in cities of the Roman world. That is not to say that all dead Romans immediately found their way into well-ordered cemeteries.³⁵ Nevertheless, most cemeteries in first-century BCE and CE Rome were outside the city walls. For whatever reason, the practice in Rome of dumping bodies in open pits on the Esquiline Hill was eventually abandoned, presumably late in the first century BCE around the time of Augustus, probably because of noxious smells, superstitious taboos, or both. City officials would slowly have come to realize, at least on a superficial level, the health risks of keeping the pits open, but proper dis-

posal of the dead had little connection to public health and sanitation.

We have explored some of the more powerful sanitary issues of the Roman city through textual and archaeological evidence and how knowing about them clarifies our understanding of Roman streets, public spaces, and private dwellings and shows how they shaped, and ultimately changed, urban society. Major disasters, such as citywide fires and floods, would also have shaped urban landscapes in various cities. These examples are far from exhaustive, but they should be sufficient to stress the complexity of understanding sanitary concerns from a Roman perspective.

We know today that efficient sewer systems and toilets in urban settings play a crucial role in creating strong economies, improving health, and protecting safety and dignity, particularly for women and girls. Any quick search of the data from UNICEF on the four pathogens (*E. coli*, shigella, cryptosporidium, and rotavirus) that are most commonly spread through food and water contaminated by feces and how these conditions improve with proper sanitary facilities, especially in places like rural India, are proof enough.³⁶ When women and young girls are forced to go outside to flimsy outhouses or into the bush for their evacuation needs, they are exposed to the dangers of rape and other violent crimes on a daily basis. Poor sanitation fosters harsh realities in our world, as it did for the Romans. In the Roman city, poor living conditions certainly must have played a role in shaping urban spaces (for example, forcing many activities outside), but such conditions did not really change the tenacious institutions and structures of Roman urban society for a very long time in the ways that might have had a real impact on improved sanitation.³⁷

NOTES

¹Pliny the Younger, *Ep.* 10.98-99 on the sewer at Amastris - "a filthy sewer, a disgusting eyesore that gives off a noxious stench."

²Pliny the Younger, *Ep.* 10.98. *Ep.* 10.99 is Trajan's reply in which the emperor gives Pliny the Younger permission to cover the eyesore of a sewer.

³For general studies on this history see: S. P. W. Chave, 1984. "The Origins and Development of Public Health." In *Oxford Textbook of Public Health, Vol. 1: History, Determinants, Scope, and Strategies*, W. W. Holland, R. Detels and G. Knox, eds. *Oxford Medical Publications*, Oxford University Press, New York, 1984 and Elizabeth Fee, *Disease and Discovery: A History of*

the Johns Hopkins School of Hygiene and Public Health 1916-1939. Johns Hopkins University Press, Baltimore, 1987.

⁴See Bradley, ed., 2012, for many valuable papers on the city of Rome, on pollution, on propriety, and on dirt, disease, and hygiene in context.

⁵Koloski-Ostrow, 2015, 102-22.

⁶Cicero, *Nat. D.* 2.56.141-42.

⁷Cicero, *Ad QFr.* 2.4.5. I am grateful to the two anonymous reviewers of this article for pointing out to me that Cicero's use of *faex* in this passage may be a reference to the "dregs" or lees of wine more accurately than to the contents of the sewers. I would still argue that Cicero's language definitely recalls the "scum" of the underbelly of the city, like the disgusting contents of the sewers in this literary metaphor.

⁸Livy 1.55.5-6 and see Gowers 24 and 26. For a general guide to the monuments of Rome with some coverage of the Cloaca Maxima, see A. Claridge, 2010, 62 and 68.

⁹Pliny the Elder, *HN* 36.24. 105-106.

¹⁰Petronius, *Sat.* 27, 36, 60, for a few specific examples.

¹¹Petronius, *Sat.* 35.

¹²Juvenal, 3, 229-255.

¹³For an up-to-date discussion of the more than 150 fast food establishments in Pompeii, see Ellis, 2004, 371-84. For the standard work on Pompeii and its spatial relationships, see Laurence, 1994.

¹⁴Wilson, 2003, 442-46, discusses the archaeology of the Roman *fullonica*, whereby urine plays a role in the cleaning of clothes. Wilson and Flohr in Jansen, Koloski-Ostrow, and Moormann, eds., 2011, 147-56, review the economy of ordure in Pompeii and Herculaneum.

¹⁵Bodel, 128-151; Hope, 2009, 65-96. See also Hope and Marshall, eds., 2000, for a more general discussion of death and disease in the ancient city.

¹⁶Koloski-Ostrow, 2015, Fig. 92, for a plan with the known Pompeian sewers. On the drainage system at Pompeii (the mechanisms for water removal as opposed to water supply), see also Poehler, 2012, 95-120. Two valuable sources for an overview of Pompeian archaeology and inscriptional evidence from the site are these: A. and M. De Vos, 1982, and A. and M. G. L. Cooley, 2004.

¹⁷Maiuri, 1958, 469. For a more recent view of the excavations of Herculaneum, see Wallace-Hadrill, 2011.

¹⁸Carmardo in Jansen, Koloski-Ostrow, and Moormann, 2011, 91-94.

¹⁹Pliny the Younger, *Ep.* 10.32.2. See also Scobie, 1986, 408. *Dig.* (Ulpian) 43.23.1-2 records an edict of a *praetor* in Rome stating that the sewers were to be kept clean and in a good state of repair because they might cause the collapse of buildings (*ruinas minantur immunditiae cloacarum*). Major clogs in the Cloaca might have led the backup of water to scour out the foundations of cheaply constructed buildings (especially mud-brick structures) therefore causing collapses.

²⁰Meiggs, 1960, is still an excellent guide to the entire site. See Koloski-Ostrow, 2015, Fig. 93, for a plan of the sewers of Ostia.

²¹Such pools are well attested in our sources for seventeenth and eighteenth-century Paris. Cf. Corbin, 1986, 31-34. See also Reid, 1991, 187 and ns. 14 and 15.

²²Dio. 39. 61. 1-2. gives a vivid account of a flood in Rome in the year 54 BCE. For a list of the main inundations of the Tiber, especially in ancient times, see Lugli, 1934, 231 ff. and Aldrete, 2006, 91-165, for the immediate and delayed effect of floods.

²³See Rinne, 2011, for a full overview of water in Rome and its sources from aqueducts to fountains and to the birth of the Baroque City.

²⁴Even the famous Shrine to Cloacina (or to Venus and Cloacina who were ultimately amalgamated) in the Roman Forum has no tradition of honoring the Cloaca Maxima for health benefits. The cult, traditionally associated with the Sabine king, Titus Tatius, seems to have had more to do with the course of the Velabrum, the stream in the bottom of the Forum valley that was later canalized as the Cloaca Maxima. For discussion see Claridge, 2010, 68.

²⁵Koloski-Ostrow, 2015, 52-83, and Hopkins in Bradley, 2012, 81-102. For older sources on the Cloaca: Bauer, 1989, 43-67; Bauer in Steinby, 1993, 288-90; Reimers, 1989, 137-41; and Remiers, 1991, 111-16.

²⁶*Dig.* (Ulpian) 43.23.1-2.

²⁷I am currently engaged in a book project (co-authored and co-edited with Gemma C. M. Jansen) called, *Roman Toilets of the Capital City*, under contract with BABESCH in Leuven, Belgium, forthcoming in 2019.

²⁸Varro, *Rust.* 1.13.4. and Columella, *Rust.* 1.6.24, on human excrement as fertilizer. Also see Wilson and Flohr in Jansen, Koloski-Ostrow, and Moormann, eds., 2011, 147-50.

²⁹For details and a full list of locations, see Hobson,

2009, 71-77.

³⁰Aelian, *NA*, 13.6.

³¹Jansen in Jansen, Koloski-Ostrow, and Moormann, eds., 2011, 165-66, on the life of Saint Thecla.

³²*Dig.* (Ulpian or Papinian) 43.11.1.1.

³³Scobie, 414, n. 117: *exempta ste(r)cora a(ssibus)* XI.

³⁴Wallace-Hadrill, 2011, 291. Marcus Rufellius Robia and Aulus Tetteius were the magistrates who had the ban painted into the announcement.

³⁵Bodel, 128-151, especially 131-33; Toynbee, 45; and Hope, 2009, 65-96. On open burial pits on the Esquiline Hill in Rome, see Lanciani, 64-65. Also, there is a mention of these pits in Horace, *Sat.* 1. 8.8-16.

³⁶<https://www.npr.org/sections/goatsandso-da/2016/11/18/325219210/diarrhea-101-time-to-talk-about-something-we-dont-usually-talk-about>; See also <https://data.unicef.org/topic/child-health/diarrhoeal-disease/> on diarrhoeal diseases killing upwards of 480,000 children in Third World countries.

³⁷I am very grateful to Professors Ronnie Ancona and Joanne Spurza of Hunter College for the invitation to speak at Hunter College in May 2017 as The Josephine Earle Memorial Lecturer on the topic that inspired this article. I am also grateful to the two anonymous *Classical Outlook* reviewers, who diligently spared me from several errors and many smaller stylistic blemishes. Any remaining mistakes or omissions are completely my responsibility.

BIBLIOGRAPHY

- Aldrete, G. S. *Floods of the Tiber in Ancient Rome*, Baltimore: The Johns Hopkins University Press, 2006.
- Bauer, H. "Die Cloaca Maxima." *Braunschweig Mitteilungen Rome* 103 (1989): 43-67.
- . "cloaca, Cloaca Maxima." In *Lexicon Topographicum Urbis Romae (LTUR) I, (A-C)*, edited by E. M. Steinby, 288-290, Rome: Edizioni Quasar, 1993.
- Bodel, J. "Dealing with the Dead." In *Death and Disease in the Ancient City*, edited by Valerie M. Hope and Eireann Marshall, 128-51. London and New York: Routledge, 2000.
- Bradley, M. ed. *Rome, Pollution and Propriety: Dirt, Disease, and Hygiene in the Eternal City from Antiquity to Modernity*. Cambridge: Cambridge University Press, 2012.
- Carmardo, D. "Case Study: Ercolano: La ricostruzione

- dei sistemi Fognari." In Jansen, Koloski-Ostrow, and Moormann. eds., 2011, 91-94.
- Claridge, A. *Rome: An Oxford Archaeological Guide*. New York and Oxford: Oxford University Press, 2010.
- Cooley, A. and M. G. L. Cooley. eds. *Pompeii. A Sourcebook*. London: Routledge, 2004.
- Corbin, A. *The Foul and the Fragrant: Odor and the French Social Imagination*, trans. M. Kochan. New York: Berg, 1986.
- De Vos, A. and M. *Guide archeologiche Laterza Pompei, Ercolano, Stabia*. Roma-Bari: Gius. Laterza & Figli, 1982.
- Ellis, S. "The Distribution of Bars at Pompeii: Archaeological, Spatial, and Viewshed Analyses." *Journal of Roman Archaeology* 17 (2004): 371-84.
- Hobson, B. *Latrinae et Foricae: Toilets in the Roman World*. London: Duckworth, 2009.
- Hope, V. M. *Roman Death: The Dying and the Dead in Ancient Rome*. London and New York: Continuum, 2009.
- Hope, V. M. and E. Marshall. eds. *Death and Disease in the Ancient City*. London and New York: Routledge, 2000.
- Hopkins, J. "The 'sacred sewer': Tradition and Religion in the Cloaca Maxima." In Bradley, 2012, 81-102.
- Jansen, G., A. O. Koloski-Ostrow, and E. Moormann eds. *Roman Toilets: Their Archaeology and Cultural History*. Leuven: BABESCH, 2011.
- Koloski-Ostrow, A. O. *The Archaeology of Sanitation in Roman Italy: Toilets, Sewers, and Water Systems*. Chapel Hill: University of North Carolina Press, 2015.
- Lanciani, R. *Ancient Rome in the Light of Recent Discoveries*. Boston and New York: Houghton, Mifflin, 1890.
- Laurence, R. *Roman Pompeii: Space and Society*. London: Routledge, 1994.
- Lugli, G. *Monumenti antichi di Roma e suburbia*. vol. 2, Rome: G. Bardi, 1934.
- Mauri, A. *Ercolano, I nuovi scavi* (1927-1958) I, Rome: Istituto Poligrafico dello Stato P.V., 1958.
- Meiggs, R. *Roman Ostia*. Oxford: Clarendon Press, 1960.
- Poehler, E. "The Drainage System at Pompeii: Mechanisms, Operation, and Design." *Journal of Roman Archaeology* 25 (2012): 95-120.
- Reid, D. *Paris Sewers and Sewermen: Realities and Representations*. Cambridge, MA: Harvard University Press, 1991.
- Reimers, P. "'Opus Omnium Dictu Maximum' Literary Sources for the Knowledge of Roman City Drainage." *Opuscula Romana* XVII: 10 (1989): 137-41.
- . "Roman Sewers and Sewerage Networks: Neglected Areas of Study." *Munuscula Romana* (1991): 111-16.
- Rinne, K. W. *The Waters of Rome: Aqueducts, Fountains, and the Birth of the Baroque City*. New Haven: Yale University Press, 2011.
- Scobie, A. "Slums, Sanitation, and Mortality in the Roman World." *Klio* 68:2 (1986): 399-433.
- Toynbee, J. M. C. *Death and Burial in the Roman World*. London: Thames and Hudson, 1971.
- Wallace-Hadrill, A. *Herculaneum: Past and Future*. Los Altos, CA: The Packard Humanities Institute, 2011.
- Wilson, A. "The Archaeology of the Roman *fullonica*." *Journal of Roman Archaeology* 16 (2003): 442-46.
- Wilson, A. and M. Flohr. "The Economy of Ordure." In Jansen, Koloski-Ostrow, and Moormann eds., 2011, 147-56.

INTERNET SOURCES

- Diarrhoea remains a leading killer of young children, despite the availability of a simple treatment solution: <https://data.unicef.org/topic/child-health/diarrhoeal-disease/>
- Diarrhea 101: Time To Talk About Something We Don't Usually Talk About November 18, 2016 12:00 PM ET: <https://www.npr.org/sections/goatsandso-da/2016/11/18/325219210/diarrhea-101-time-to-talk-about-something-we-dont-usually-talk-about>

Ann Olga Koloski-Ostrow is Kevy and Hortense Kaiserman Endowed Chair in the Humanities at Brandeis and Co-Director of the MA program in Ancient Greek and Roman Studies. She has done fieldwork at Herculaneum and Pompeii and in Jordan and Tunisia. Her specialties are Roman daily life, plumbing and hydraulics, and Roman baths, toilets, and sanitation. Her MA in Latin and Greek language and literature and PhD in Classical Art and Archaeology are from the University of Michigan. Her publications include: *The Archaeology of Sanitation in Roman Italy: Toilets, Sewers, and Water Systems* (2015); *Roman Toilets: Their Archaeology and Cultural History* (2011); and *Making Sense of Pompeii*

and *Herculaneum: Daily Life and the Sensorium of the Roman City* (Cambridge University Press, forthcoming). She won the award for Excellence in Undergraduate Teaching from the Archaeological Institute of America in 2016.

CALL FOR PAPERS: GREEK CULTURE IN THE ROMAN WORLD

Sponsored by the American Classical League and organized by Ronnie Ancona, Hunter College and CUNY Graduate Center, Editor of *The Classical Outlook*; and David Petrain, Hunter College and CUNY Graduate Center

The American Classical League invites scholars and teachers to submit abstracts for its affiliated group panel session, "Greek Culture in the Roman World," at the Washington DC Annual Meeting of the Society for Classical Studies in January 2020. Greek culture has played a complex and important role in the Roman world throughout Rome's history and in a wide range of contexts: literary, artistic, religious, political, material (to name a few). We invite papers that explore any aspects of the relationship—whether it is one of influence, confluence, response, or resistance—between Greek culture and its Roman settings. Papers focusing on any time period (archaic to late antique) or type of evidence (textual, visual, etc.) are welcome. All papers should be accessible to a broad audience of classics scholars and teachers.

Papers accepted for the panel will be considered for publication in *The Classical Outlook*, journal of The American Classical League. Most recent panel papers have been published as a group each year in CO.

Abstracts should be submitted to Ronnie Ancona (rancona@hunter.cuny.edu) *only*, since she will be anonymizing them before they are forwarded to those who will choose the successful abstracts. Please submit as a Word document. Any questions about the panel may be addressed to her as well.

Abstracts should conform to the instructions for the format of individual abstracts that appear in the SCS Guidelines for Authors of Abstracts:

<https://classicalstudies.org/annual-meeting/guidelines-authors-abstracts>.

Please put "ACL panel at SCS 2020" in the subject line of your email submission. Include the title of your paper, your name, and your institutional affiliation (or status as Independent Scholar) in the email message, but make sure that your name (and any other identifying information) does not appear in the abstract itself. If you refer to your own scholarship in your abstract, cite it in the third person, as you would any other source.

You **MUST** be a member of SCS to submit an abstract. Please include in your email submission message your SCS member number and the date you joined or last renewed. (This will appear on your membership confirmation email from SCS and in your account.) You **DO NOT** have to be a member of ACL.

The deadline for the submission of abstracts is January 25, 2019.

Women's Classical Caucus

An affiliate of the Society for
Classical Studies

Free One-Year Membership
for Undergrad & Graduate
Students and K-12 Teachers
& Students

<https://wccaucus.org/>

Click on "membership" for
how to take advantage of this
offer.