

CHAPTER 10

Shit and civilisation – Western reports on nightsoil in 18th and 19th century China

J. H. Hüsemann [Leipzig University]

Abstract: In pre-modern China, human excreta were among the most sought-after and important fertilisers that peasants applied to their fields. Besides, excrement was frequently discussed by Western travellers to East Asia. In addition to outlining its important role in Chinese agriculture, these men depicted Chinese excretory practices in some detail, in particular the different habits and technologies of the local populations. As their accounts reveal, they were disgusted by the stench and the sight of human excrement they faced in China, and by comparison to the developments in their home countries they regarded Chinese practices as backward. Based on these accounts, this paper will show that during the 18th and 19th centuries shit became a measure of men. It will argue that for the European travellers it became an indicator that assured them of the Chinese lack of civilisation and thus a mean to emphasise European cultural as well as scientific and technological superiority.

Introduction

Sir John Barrow (1764–1848) was quite a cosmopolitan. When in 1804 he wrote his reminiscence of a journey through China from 1792–4, he had already travelled the Arctic Ocean as well as parts of Asia and Africa.¹ Despite the many experiences that Barrow had made in various places around the world, some aspects of Chinese life had apparently left a lasting impression on him, though not always a good one. He praised the fact that Beijing was relatively clean because “no nastiness” was thrown on the streets but was instead collected in jars and then sold as fertiliser or traded for vegetables. Nevertheless, he was offended by the stench caused by this practice. In a vivid account he described his impressions on a journey back to Beijing from the Old Summer Palace (Yuanmingyuan 圓明園):

The same small boxed carts with one wheel, which supply the city with vegetables, invariably return to the gardens with a load of this liquid manure. Between the palace of *Yuen-min-yuen* and Peking, I have met many hundreds of these carts. They are generally dragged by one person, and pulled on by another; and they leave upon the road an odour that continues without intermission for many miles. Thus, though the city is cleared of its filth, it seldom loses its fragrance. In fact, a constant disgusting odour remains in and about all the houses the whole day long, from the fermentation of the heterogeneous mixtures kept above ground, which in our great cities are carried off in drains.²

Three aspects that Barrow mentioned in this passage were frequently discussed in European accounts of nightsoil in the Chinese empire: the sight of human excrement, its odour, and the lack of advanced technologies to get rid of it. Each of these three aspects was regularly, sometimes frankly and sometimes more subtly, associated with the backwardness of Chinese culture and civilisation. As Jürgen Osterhammel has pointed out, throughout the 19th century European elites were sure “of marching at the head of progress and embodying a global standard of civilisation”. They were confident in Europe’s superiority through its “success in creating material wealth, in mastering nature through science and technology, and in spreading its rule and influence by military and economic means”, which towards the end of the century was summed up under the term “modernity”.³ This paper argues that accounts of excrement are a perfect yet understudied

topic for further examining these Western notions of “superiority” and “standards of civilisation”. Based on reports written by Western, mostly European, travellers to late imperial China, it explores how these men discussed nightsoil and how their accounts of China, and of the ways in which the Chinese treated nightsoil, were used to consolidate a hierarchy between Europe and China.

In one of his pioneering works, Norbert Elias (1897–1990) examined how changes in everyday behaviour, such as table manners or excretory practices, could evince the development of social configurations and cultural values of societies.⁴ While Elias discussed changing attitudes to bodily waste, he did not examine these substances in greater detail. Dominique Laporte was the first to show that the study of shit – how it was treated and how historical actors discussed it – offers deeper insights into societies’ social structures, beliefs, and values.⁵ Building on Laporte’s study, a growing number of scholars have explored human waste in early modern and modern Europe. The urbanisation during this period posed new challenges for the administration of cities, since more inhabitants produced more excrement that had to be removed. Dirt, smell, and illness became common problems in the growing metropolises and were early on associated with the urban proletariat that emerged during the course of industrialisation.⁶ How the sight and particularly the odours of waste affected various aspects of the social world in 18th- and 19th-century France was analysed in a pathbreaking study by Alain Corbin. Moving beyond the sensory history, he pointed out that a shared intolerance of certain odours resulted in a deodorisation of the cities as well as social distinction between a cultivated, fragrant bourgeoisie and an uncultivated smelling proletariat.⁷ As he pointed out, “[t]his episode in the history of disgust, affinities, and purification, spanning the nineteenth century, revolutionised social perceptions and symbolic references”.⁸

David Inglis, for his part, has studied how these perceptions contributed to the formation of social groups and othering, the development of manners and personal hygiene, a sense of privacy, and ideas about technological advancement and backwardness. It was not simply medical or hygienic concerns that gave rise to “modern modes of excretion”, but, according to Inglis, these developments were “in large part a result of the particular socio-cultural circumstances of the West”.⁹ Confronted with the growing urban proletariat living in precarious conditions, for the bourgeoisie, refined excretory manners, health and hygiene, and technologies such as toilets became part of a symbolic and material separation from the lower, uncivilised strata of society. While these scholars used excreta as a lens to study social, cultural, and technological developments within a European context, they often did not ask how Europeans compared their own excretory habits with those of other cultures.¹⁰ This paper seeks to make a step to fill this gap by arguing that in the writings of European travellers to East Asia, the dividing line between civilised and uncivilised was not drawn between classes or groups, but between Western and Chinese societies as a whole.¹¹ Shit became a “measure of men” and thus offers new insights into the conflictual history of the relations between Europe and China.¹²

Treasuring shit like gold

In imperial China, particularly since the intensification of agriculture that began during the Southern Song 宋 dynasty (1127–1279), nightsoil became one of the most sought-after fertilisers and was crucial for maintaining soil fertility and thus securing continuously high yields. Unlike the situation in European agriculture, where animal husbandry and plant cultivation went hand in hand, most of Chinese arable land was solely “dedicated to the production of food for man alone”, as George Leonard Staunton (1737–1801), secretary to the Macartney Mission to the Chinese court in 1793, once noted.¹³

Indeed, unlike in Europe, where farm animals were an important source of manure, animal husbandry was less common in most parts of China. Peasants mainly used their land to grow food for humans or cash crops such as indigo, tea, medical herbs, or cotton.¹⁴ The lack of animal dung made human excrement an even more valuable

resource, and according to a Chinese agronomist, those men who devote themselves to agriculture know to “treasure shit like gold” (惜糞如惜金也).¹⁵ Although some agronomists warned that human excrement is too strong and might burn the seedlings if not applied properly, most of these men praised this fertiliser. Polymath Xu Guangqi 徐光啟 (1562–1633) described the “golden juice” (*jinzhi* 金汁), produced on the basis of urine (*xiaobian* 小便) and faeces (*dafen* 大糞) as very effective and Qing 清 (1644–1912) dynasty scholar Yang Shen 楊屺 (1699–1794) refers to human excrement (*renfen* 人糞) as the fertiliser of highest quality (*yi deng fen* 一等糞).¹⁶ During the Ming 明 (1368–1644) and Qing dynasties the collection, transportation, and sale of nightsoil grew into a well-organised business.¹⁷ For acquiring nightsoil, estate owners sent their employees to the cities or bought it from nightsoil traders. For example, the Ming-period *Shenshi nongshu* 沈氏農書, which describes the agriculture in the Huzhou 湖州 area, in modern Zhejiang 浙江 points out:

For nightsoil, you should go to Hangzhou. [...] Then, when the mulberry flowers wilt, around “lesser fullness” (*xiaoman*, about May 21 to June 5), is the time when people are fully occupied with sericulture (lit. affairs concerning silkworms), and then you can only buy faeces from latrines in the neighbouring towns.

其人糞，必往杭州。[...] 至於謝桑，於小滿邊蠶事忙迫之日，只在近鎮買坐坑糞。¹⁸

This difference in fertilising was noticed by several Western travellers. The Swedish naturalist Pehr Osbeck (1723–1805), chaplain on the Swedish East India Company’s sailing ship *Prince Charles*, called nightsoil “a ‘kind of dung which we reject’ and for Staunton Chinese fertilisers were “more offensive to the human senses”, and “not very generally applied to the purposes of agriculture in England”.¹⁹ Similar impressions were recorded by British traveller and naturalist Clarke Abel (1780–1826), who had accompanied British colonial administrator William Pitt, Lord Amherst (1773–1857) on a mission to Beijing in 1817–18. He assumed that the extensive use of human waste by Chinese peasants was perhaps “the consequence of much fewer animals being used in the cultivation of the lands in China than in other countries...”²⁰ A few decades later, George Wingrove Cooke (1814–65), special correspondent for *The Times* in China during the Second Opium War (1856–60), also pointed out that “[s]table-yard manure [...] is scant. Nor is it much coveted. Human ordure is, in a Chinaman’s opinion, the only perfect fertiliser. This is collected with the most oppressive care.”²¹

While these authors agreed that human excrement was not widely used in European agriculture, it was actually not as uncommon as their accounts suggest. Several historical farming manuals discuss nightsoil, and it is known that it was used in various European countries as a single fertiliser or mixed with other substances.²² Hence, the travellers were most certainly familiar with the Chinese practices from the agriculture of their home countries. The reasons for their strong objection must thus have their roots elsewhere. In his *Grundsätze der rationellen Landwirthschaft* (Principles of Rational Agriculture) German agronomist Albrecht Daniel Thaer (1752–1828), one of the fathers of modern German agronomy, gives a hint. Nightsoil, Thaer noted, “is highly valued in China and Japan, and hence has been called ‘Japan manure’”.²³ He believed that another million people could be nourished in Europe if only peasants would apply nightsoil more widely.²⁴ An obstacle to the agricultural use of human faeces Thaer saw in the “disgust which the use of them occasions”, disgust caused by the “offensive smell” as well as the fear that the plants might develop an “unpleasant flavour”.²⁵ Disgust caused by the stench of human excrement, its sight, its being part of public life is a prominent topic in European writings on China. The odour from human nightsoil, as Cooke put it, was “a

never-ceasing horror” to an Englishman, constituting “his first and his last impression of the country”.²⁶

“Horrible stench”

On his vast travels through China during the first half of the 19th century, French missionary Évariste Régis Huc (1813–60) noticed that the country smelled very different from what he knew from Europe. When he entered a Chinese hamlet or approached a farm, he was “often suddenly struck by a horrible stench that threatens to suffocate you”. Compared to the “healthy, though somewhat powerful odour, that escapes from cowhouses and sheep-folds”, the Chinese countryside smelled like an “atrocious mixture of all that is disgusting”.²⁷ What made animals’ excreta so fundamentally different from human, one being healthy, the other disgusting? Although Huc did not further discuss it, social norms were seemingly the reason behind his distinction.

Since the 18th century, the odours described by Huc have been increasingly banned from French cities. As Alain Corbin has pointed out, social as well as health concerns resulted in new strategies to purify and deodorise public space. Sanitary reformers used “tactics that created a clear distinction between the deodorised bourgeoisie and the foul-smelling masses”.²⁸ Thus, stench and the ability or inability to tolerate it were associated with class background, with a human’s degree of civilisation. For the bourgeoisie, deodorisation and hygiene were thus means to separate themselves from the poor, who were living in their own filth and stench like animals.²⁹ Similar developments took place in Georgian and Victorian England and in other parts of Europe. For Huc then, the natural odour that animals in their pen emanate was acceptable, but the smell of human excrement in Chinese settlements revealed their inhabitants’ animalised nature and showed their inhuman behaviour, unacceptable and disgusting for a supposedly civilised man.

Apart from social imaginations, the notion that stench was responsible for various diseases was widespread. Cholera outbreaks repeatedly haunted the population of major cities in Europe such as Paris, London or Hamburg, and until the middle of the 19th century it was generally believed that the disease was caused by miasma.³⁰ It was not until the second half of the 19th century that the proven knowledge that the disease was transmitted by bacteria contained in water was widely accepted and replaced the miasma-theory. Cholera was considered as a disease of the poor who lived in dirt and lacked proper sanitation, hygiene, and nutrition. Stench and filth meant disease.³¹ As Christopher Hamlin has shown, cholera was not only associated with poverty in historical accounts, but sometimes also with races and nations whose sanitary practices did not meet European standards.³² Perhaps it is a coincidence, but his strong impressions of Chinese odours may have led Évariste Régis Huc to assume that the cholera epidemic of the 1830s had its origins in China.³³

Following the cholera epidemic, in 1842, British social reformer Edwin Chadwick (1800–90) pointed out the relations between filth, illness, and poverty and suggested to solve the problem through, among other measures, building sewers.³⁴ Coupled with the water closet, these sewers became the new standards of modern Western societies in dealing with human waste.³⁵ While Macartney lamented the lack of water closets in China already in the late 18th century, this form of toilet did not become established in Europe until the second half of the 19th century, first in bourgeois households, then later also in working class homes. As David Inglis has argued, with the water closets “came all the symbolic and practical aspects of the bourgeois faecal habitus”, an element to distance the body from the excreta it has produced.³⁶ But the new technologies were not welcomed by everyone. Some warned of the potential dangers of water closets, others complained of the loss of potential fertiliser.³⁷ In a short piece on the sanitation of major European cities, Irish engineer Jasper W. Rogers (fl. 1850) ardently criticised the water-closets and sewers that for him were a “sanitary evil”.³⁸ He wanted to prevent excrement from being discharged into sewers but instead wanted it to be collected to prevent the spread of diseases. The poor,

who have no means to battle against the infliction are visited with the consequences of that which, from first to last, is *the sin of the rich* – a sin emanating from selfish personal comfort solely, with utter forgetfulness of consequences to others.³⁹

Although travellers discussed excretory practices in some detail, they did not regularly refer to the different sanitation technology they found in China, but rather to the absence of modern closets and sewers. “Be it known, then,” British missionary Robert Henry Cobbold (1813–93) noted, “that in Chinese cities or towns no underground sewers or drains exist...”⁴⁰ The Scottish botanist Robert Fortune, who is known for having smuggled tea plants from China to India, even went a step further and interpreted the Chinese methods of collecting and handling their waste as a proof of their lack of civilisation: “What would be considered an intolerable nuisance in every civilised town in Europe, is here looked upon by all classes, rich and poor, with the utmost complacency.” Instead of a sewer, he came across open receptacles for nightsoil and was sure that the locals would be “astonished” if a foreigner complained of “the stench which is continually rising from [...] manure tanks”.⁴¹

Other European travellers also lamented the inescapable stench in China. Although most of them discussed the odour of nightsoil as a nuisance, some of them might have worried about the potential dangers that it supposedly posed for their health and wellbeing. For example, George Smith (1815–71), British missionary and later bishop of Hong Kong, undertook lengthy travels through China between 1846 and 1848 and expressed his olfactory disappointment with the Chinese hinterland.

Instead of the fresh breezes of autumn, and the inhalations of the pure country air, the rice-fields and gardens gave forth most offensive odours, caused by the manure with which the ripening crops were covered.⁴²

While Huc and Smith complained about the stench in the countryside, the situation in larger cities appeared to have been even worse. They were places of dirt and disgust. Excrements, stored in “enormous dark open earthenware pans offend the senses at every turn, poisoning the air, inviting, and too often receiving, the contributions of the passers-by”, as George Wingrove Cooke complained.⁴³ For George Macartney the stench was “intolerable offensive” and although the streets were cleaned from the “filth and ordures” in the early morning, “yet the odour generally continues floating in the air for the greater part of the day”.⁴⁴ Apart from the smell of excrement, the sight of it and the lack of shame the Chinese displayed in their use of public latrines were topics that travellers regularly discussed.

“Shamelessly open”

During the 18th and 19th centuries, privacy became an increasingly important matter in excretory practice. Corbin argued that “[t]he privatisation of waste encouraged the containment of excremental odours within strictly limited places”.⁴⁵ In addition to keeping the olfactory aspect of defecatory practice private, the visual part was also shielded from the gaze of others. As David Inglis has argued, for the European bourgeoisie keeping defecation private was an “important element of distinction” from the lower classes, thus part of the “faecal habitus”.⁴⁶ In China, however, finding a little privacy for emptying one’s bowels proved to be complicated, as Macartney had to notice.

They have no water-closets nor proper places of retirement; the necessities are, in general, quite public and open; and the ordure is continually removing from them, which occasions a stench in almost every place one approaches.⁴⁷

While there is good hygienic reason to defecate into a water closet, there is no medical rationale to install it into a private place, where the user is hidden from the view of others when nature calls.⁴⁸ During the early modern period, defecating in public was increasingly regarded as inappropriate and a sense of embarrassment, offensiveness, and

shame was attached to these bodily functions.⁴⁹ This sense of shame is displayed in several writings from Western travellers. Describing the Chinese scavengers, the nightsoil men, Cobbold warned his reader that this is a topic that he “would gladly have avoided”, “a matter difficult to handle without being offensive to squeamish minds”. Thus, he recommended that those “afraid of a practical subject, which deals with gross matters of detail, will shut their eyes, and turn over two or three leaves, when they will find something more to their taste”.⁵⁰ After this “fair warning” he gave a vivid description of the public latrines in Chinese cities, nothing more than “wooden sheds, open towards the road: no attempts at concealment by boarding or doors in front being made”. While for him this was “gross indecency”, he believed the Chinese did not consider it “in the slightest degree to offend against the laws of propriety”.⁵¹ Similarly, American Methodist missionary Charles Taylor (1819–97) described public latrines that were “shamelessly open and exposed on the public thoroughfares”, constituting “one of the most annoying and disgusting nuisances.”⁵² Thus, quite opposite to the developments in Europe, in China defecation was not privatised but remained part of public life.

Another nuisance for Western travellers was the transport of nightsoil in buckets, with wheelbarrows, as mentioned by Barrow, or by carts and boats, according to Charles Taylor “disgusting and loathsome to the last degree”.⁵³ As Cobbold lamented, nothing is more offensive to the foreign inhabitants of larger cities than coming across the scavengers in a narrow or crowded street since it is difficult to avoid the “calamity of contact” and because of the carelessness of the men, sometimes the “contents of the pails is upset and floods the foot-path”.⁵⁴

For Westerners, the safest and most comfortable way was to travel China by boat, which unfortunately was also the common method to transport the nightsoil from the cities to the rural areas, and more than once travellers report of their encounters with these “vessels of perfumery”, as Cobbold called them.⁵⁵ Already in the mid-18th century, Pehr Osbeck noted the disagreeable smell of the “Dung-Sampanes” that arose from the human excrements they were carrying, and about 100 years later George Smith complained about the boats that “passed and re-passed, laden with this disagreeable cargo”.⁵⁶ It appears that the Chinese boatmen were well aware of the European travellers’ sensitivities, which they exploited to their own advantage. “The boats which convey this produce through the inner waters will bring up close to you at night, and will remove only for a consideration”, as a report by George Cooke suggests.⁵⁷

The accounts by Western travellers agree that excretory practice and the methods used to get rid of excrement did not meet the standards that were known from their home countries. Their experiences convinced them that China was lacking scientific and technological advancement and, in consequence, civilisation.

Conclusion

While prior to the Scientific Revolution, roughly 1500–1700, Christian faith for long has been essential in creating otherness and hierarchies between a “civilised” Christian Europe and an “uncivilised” rest of the world, during the 18th and 19th century science and technology became increasingly important in this process.⁵⁸ Quite similarly, in the discussions regarding sanitation technology and hygiene, the treatment of human waste gained some prominence and became an indicator of class, civilisation and modernity. However, discussions differed whether they concerned European or foreign societies. Within the context of European or Western societies, dirt and stench were associated with the proletariat and the urban bourgeoisie showed their superiority through cleanliness, deodorisation, and the privatisation of defecatory practices. Banned from public life and from refined language as well, shit became symbolically laden. In other words, how humans understood, treated, and discussed shit became a matter of class in European societies.

In an international context, shit became a measure of civilisation and as the reports by travellers to China suggest, a mean to highlight otherness and display what Ruth Rogaski

has called a “sense of medical and sanitary superiority”.⁵⁹ China, most European travellers agreed, was a stinking empire, and whether they were in the cities or the countryside, whether traveling by streets or by waterway, nowhere did it seem possible to escape the stench of nightsoil. Pointing to the differences in sanitation technology, they suggested that China was a backward nation, maybe reminding them of the sanitary conditions in Europe before the construction of sewers and water closets. To them, the Chinese capability of enduring the stench, regardless of what class an individual belonged to, was evidence that the entire society belonged to a lower, less developed stratum of humanity. According to Robert Henry Cobbold, the Chinese “olfactory senses are decidedly much less sensitive than our own...”⁶⁰

The sense of their Western superiority was further fostered by the lack of shame the Chinese displayed in their use of public toilets and the open collection and transport of human waste. Although travellers were impressed by the intensive agriculture of China and the yields that the peasant produced, their disgust about manuring with human excrement dominated the reports. This was only to change during the second half of the 19th century when several European agronomists highlighted the economic value of nightsoil. In this case, the “backward” Chinese practices were sometimes presented as a model for European agriculture. The varying descriptions in historical sources suggest that human excrement remained, in Cobbold’s words, “a matter difficult to handle”.

REFERENCES

- Abel, Clarke (1818) *Narrative of a Journey in the Interior of China, and of a Voyage to and from that Country, in the Years 1816 and 1817; Containing an Account of the Most Interesting Transactions of Lord Amherst's Embassy to the Court of Peking and Observations on the Countries which it Visited*, London: Longman, Hurst, Rees, Orme, and Brown.
- Adas, Michael (2015) *Machines as the Measure of Men. Science, Technology, and Ideologies of Western Dominance*, Ithaka: Cornell University Press.
- Anderson, Warwick (1995) ‘Excremental colonialism: public health and the poetics of pollution’, *Critical Inquiry* 21,3, pp. 640–69.
- _____ (1996) ‘Disease, race and empire’, *Bulletin of the History of Medicine* 70.1, pp. 62–7.
- Barnes, Nicole Elizabeth (2023) ‘The many values of nightsoil in wartime China’, *Past & Present*, 259, 1, pp. 194–228.
- Barles, Sabine (2007) ‘Feeding the city: food consumption and flow of nitrogen, Paris, 1801–1914’, *Science of the Total Environment*, 375, pp. 48–58.
- _____ and Laurence Lestel. ‘The nitrogen question: urbanization, industrialization, and river quality in Paris, 1830–1939’, *Journal of Urban History*, 33,5, pp. 794–812.
- Barrow, John (1804) *Travels in China. Containing Descriptions, Observations, and Comparison, Made and Collected in the Course of a Short Residence at the Imperial Palace of Yuen-Min-Yuen, and on a Subsequent Journey Through the Country from Peking to Canton*, London: T. Cadell & W. Davies.
- Bourke, John G. (1891) *Scatalogic Rites of All Nations. A Dissertation upon the Employment of Excrementitious Remedial Agents in Religion, Therapeutics, Divination, Witchcraft, Love-Philthers, etc., in All Parts of the Globe*, Washington, DC: W. H. Lowdermilk & Co.
- Bray, Francesca (1984) *Science and Civilisation in China. Vol. 6: Biology and Biological Technology, Part II: Agriculture*, edited by Joseph Needham, Cambridge: Cambridge University Press.
- Chadwick, Edwin, ed. (1849) *Sewer Manure. Statement of the Course of Investigation & Results of Experiments as to the Means of Removing the Refuse of Towns in Water, and Applying it as Manure: With Suggestions of Further Trial Works (for Voluntary Adoption) of the Practicability of Applying Sewer Water as Manures by Subterranean*

- Channels; Prepared for the Consideration of the Committee of Works*, London: Reynell & Weight.
- Cobbold, Robert Henry (1860) *Pictures of the Chinese, Drawn by Themselves*, London: John Murray.
- Cockayne, Emily (2007) *Hubbub: Filth, Noise, and Stench in England 1600–1770*, New Haven: Yale University Press.
- Cooke, George Wingrove (1858) *China: Being “The Times” Special Correspondence from China in the Years 1857–1858*, London: Routledge & Co.
- Corbin, Alain (1986) *The Foul and the Fragrant: Odor and the French Social Imagination*, Leamington Spa: Berg Publishing.
- Delaporte, François (1986) *Disease and Civilization. The Cholera in Paris, 1832*, Cambridge, MA: MIT Press.
- Despeux, Catherine (2017) ‘Chinese medicinal excrement. Is there a Buddhist influence on the use of animal excrement-based recipes in medieval China?’, *Asian Medicine* 12, pp. 139–169.
- Du Xinhao 杜新豪 (2018) *Jinzhì: Zhongguo chuantong feiliao zhishi yu jishu shijian yanjiu (10-19 shiji)* 金汁: 中国传统肥料知识与技术实践研究 (10-19 世纪), Beijing: Zhongguo nongye kexue jishu chubanshe.
- Elias, Norbert (2000) *The Civilizing Process. Sociogenetic and Psychogenetic Investigations*, transl. Edmund Jephcott, Oxford: Blackwell.
- Evans, Richard J. (2005) *Death in Hamburg. Society and Politics in the Cholera Years*, London: Penguin Books.
- Fortune, Robert (1847) *Three Years’ Wanderings in the Northern Provinces of China, Including a Visit to the Tea, Silk, and Cotton Countries: With an Account of the Agriculture and Horticulture of the Chinese, New Plants Etc*, London: John Murray.
- Gaukroger, Stephen (2022) *Civilization and the Culture of Science. Science and the Shaping of Modernity 1795–1935*, Oxford: Oxford University Press.
- Halliday, Stephen (2020) *The Great Stink of London. Sir Joseph Bazalgette and the Cleansing of the Victorian Metropolis*, Cheltenham: The History Press, 2020.
- Hamlin, Christopher (1980) ‘Sewage: waste or resource?’, *Environment: Science and Policy for Sustainable Development*, 22,8, pp. 16–42.
- ____ (1998) *Public Health and Social Justice in the Age of Chadwick: Britain, 1800–1854*, Cambridge: University Press.
- ____ (1996) *Cholera: The Biography*, Oxford: Oxford University Press.
- Hardy, Anne (1993) ‘Cholera, quarantine and the English preventive system, 1850–1895’, *Medical History* 37,3, pp. 250–69.
- Horan, Julie L. (1996) *The Porcelain God. A Social History of the Toilet*, Secaucus, N. J.: Carol Publishing Group.
- Huang Xuelei (2023) *Scents of China. A Modern History of Smell*, Cambridge: University Press.
- Huc, Évariste Régis (1871) *A Journey Through the Chinese Empire, Vol. 2*, New York: Harper and Brothers.
- Hüsemann, Jörg Henning (2021) ‘Vom Nachttopf aufs Feld. Transportmethoden von Fäkaldünger im kaiserlichen China’, in Sigrun Abels et al. ed., *Mobilität in China*, pp. 91–111, Wiesbaden: Harrassowitz Verlag.
- Inglis, David (2000) *A Sociological History of Excretory Experience: Defecatory Manners and Toiletry Technologies*, Lewiston: Edwin Mellen Press.
- Jackson, Lee. *Dirty Old London: The Victorian Fight against Filth*. New Haven: Yale University Press, 2014.

- Kudlick, Catherine Jean (1996) *Cholera in Post-Revolutionary Paris: A Cultural History*, Berkeley: University of California Press.
- Laporte, Dominique (2000) *History of Shit*, Cambridge, MA: MIT Press.
- Liebig, Justus von (1876), *Die Chemie in ihrer Anwendung auf Agricultur und Physiologie*, Braunschweig: Friedrich Vieweg und Sohn, 9th edition.
- Osbeck, Pehr (1771) *A Voyage to China and the East Indies*, Vol. 1, London: Benjamin White.
- Osterhammel, Jürgen (2014) *The Transformation of the World. A Global History of the Nineteenth Century*, Princeton: Princeton University Press.
- Proudfoot, William Jardine (1861) *Barrow's Travels in China: An Investigation into the Origin and Authenticity of the Facts and Observations Related in a Work Entitled Travels in China, by John Barrow, F.R.S.*, London: George Philip and Son.
- Rogaski, Ruth (2004) *Hygienic Modernity: Meanings of Health and Disease in Treaty-Port China*, Berkeley: University of California Press.
- Rogers, Jasper W. (1858) *Facts and Fallacies of the Sewerage System of London and Other Large Towns*, London: Atchley and Co.
- Smith, George (1847) *A Narrative of an Exploratory Visit to Each of the Consular Cities of China, and to the Islands of Hong Kong and Chusan: In Behalf of the Church Missionary Society, in the Years 1844, 1845, 1846*, London: Seerley.
- Staunton, George Leonard (1797) *An Authentic Account of an Embassy from the King of Great Britain to the Emperor of China*. Vol. 1, London: G. Nicol.
- Sterckx, Roel (2023) 'Excreted and left untreated? Human and animal waste: from Dunhuang to Laozi', *East Asian Science, Technology, and Medicine* 55,1-2, pp. 116–56.
- Taylor, Charles (1860) *Five Years in China. With Some Account of the Great Rebellion, and a Description of St. Helena*, Nashville: J. B. McFerrin.
- Wang Zhen 王禎 (1981) *Wang Zhen Nongshu* 王禎農書, edited by Wang Yuhu 王毓瑚, Beijing: Nongye chubanshe.
- Worster, Donald (2017) 'The good muck: toward an excremental history of China', *Rachel Carson Center Perspectives: Transformations in Environment and Society*, 2017. 5.
- Wright, Lawrence (1971) *Clean and Decent. The Fascinating History of the Bathroom and the W.C.*, London: Routledge & Kegan Paul.
- Xu Guangqi 徐光啟 (2010) *Nongshu caogao* 農書草稿, in Zhu Weizheng 朱維錚 and Li Tiangang 李天綱 eds., *Xu Guangqi quanji* 徐光啟全集, vol. 5, Shanghai: Shanghai guji chubanshe.
- Xue Yong (2005) "'Treasure nightsoil as if it were gold": economic and ecological links between urban and rural areas in late imperial Jiangnan', *Late Imperial China* 26,1, pp. 41–71.
- Yang Shen 楊屺 (1957) *Zhiben tigang* 知本提綱, in Wang Yuhu 王毓瑚 ed., *Qin Jin nongyan* 秦晉農言, Beijing: Zhonghua shuju.
- Yu Xinzong (2010) 'The treatment of nightsoil and waste in modern China', in Angela Ki Che Leung and Charlotte Furth eds., *Health and Hygiene in Chinese East Asia: Policies and Publics in the Long Twentieth Century*, pp. 51–72, Durham: Duke University Press.
- Zhang Lüxiang 張履祥 (1983) *Bu nongshu jiaoshi* 補農書校釋, collated and explained by Chen Hengli 陳恒力, revised and supplemented by Wang Da 王達, Beijing: Nongye chubanshe.

NOTES

1. Barrow had accompanied Lord Macartney (1737–1806) as comptroller on his famous but unsuccessful mission to Beijing. His account on China was later harshly criticised by William Jardine Proudfoot (c.1804–87), grandson of astronomer James Dinwiddie (1746–1815), who was also part of Macartney’s mission to the imperial court. Proudfoot 1861.
2. Barrow 1804: 99.
3. Osterhammel 2014: 836.
4. For excretory practices see: Elias 2000: 109–21. Note that the German original was already published in 1939.
5. Laporte 2000.
6. See for example: Cockayne 2007; Jackson 2014: 46–68.
7. Corbin 1986.
8. Corbin 1986: 232.
9. Inglis 2000: 290.
10. An early attempt to describe the scatological practices around the world is Bourke 1891, a collection of accounts of various aspects of excretory practices.
11. So far, most scholars have studied human excrement from a medical perspective, often focusing on modern China. See e.g.: Rogaski 2004; Yu 2010: 51–72.; Barnes 2023: 194–228. For an article discussing medical use of faeces, mostly animal excrement, see: Despeux 2017. For a comprehensive study of excretory practices in early and early medieval China see: Sterckx 2023. For a recently published study exploring various notions of scents in China see: Huang 2023, in particular: 63–97.
12. The phrase “measure of men” was adopted from: Adas 2015. For the importance of nightsoil as a lens for the study of Chinese history see: Worster 2017: 3–53.
13. Staunton 1797: 544.
14. For an overview of the various plants that peasants cultivated in traditional Chinese agriculture see: Bray 1984: 423–553.
15. Wang 1981: 38.
16. Xu 2010: 456; Yang 1957: 38.
17. See: Xue 2005: 41–71. For transport see: Du 2018: 88–98; Hüsemann 2021: 91–111.
18. Zhang 1983: 56.
19. Osbeck 1771: 351; Staunton 1797: 412.
20. Abel 1818: 163.
21. Cooke 1858: 248.
22. See e.g. a report by Edwin Chadwick (1800–90) in which he collected reports on the use of sewer manure in different European countries. Chadwick 1849.
23. Thaer 1844: 426.
24. Thaer 1844: 424. He described how close to Paris large amounts of nightsoil were turned into poudrette, and that in Belgium nightsoil was so popular that it was transported even over wider distances by cart and boat. Note that the German original mentions Netherlands instead of Belgium, since in 1810 the country had not yet achieved independence from the Netherlands. Thaer 1844: 425–6.
25. Thaer 1844: 424. Alain Corbin has pointed out that in the Paris region it became less popular to use nightsoil as a fertiliser between 1760 and 1780. In other parts of Europe, such as Flanders, it remained common, though. Corbin 1986: 117–18. For discussions of using urban waste as fertiliser as well as the relation between countryside and city in 19th and 20th century Europe and the USA see e.g.: Hamlin 1980: 16–42; Tarr 1996: 293–309; Barles 2007: 48–58; Barles and Lestel 2007: 794–812.

26. Cooke 1858: 249.
27. Huc 1871 [1855]: 298.
28. Corbin 1986: 55.
29. Corbin 1986: 144.
30. There are several studies dealing with cholera in major cities. For Hamburg see: Evans 2005. For Paris e.g.: Delaporte 1986; Kudlick 1996. For London e.g.: Hardy 1993: 250–69; Jackson 2014; Halliday 2020 [2001].
31. Jackson 2014: 54–104.
32. Hamlin 2009: 52–96. See also: Anderson 1995: 640–69; Anderson 1996: 62–7.
33. Huc 1871 [1855]: 31. It is now believed that the pandemics had its origin in India.
34. Rogaski 2004: 86. For a detailed account see: Hamlin 1998.
35. For the history of the water closet in Europe see e.g.: Wright 1971: 200–16; Horan 1996: 84–91; Inglis 2000: 243–85.
36. Inglis 2000: 9.
37. Note the well known and lengthy discussion by German chemist Justus von Liebig (1803–1873), who went so far to claim that the wealth and welfare of the states and the progress of culture and civilisation are dependent on their decisions regarding the sewage question, thus the question of whether sewage would be discarded as waste or used as a valuable resource. von Liebig 1876: 86.
38. Rogers 1858: 47.
39. Rogers 1858: 6. Emphasis in original.
40. Cobbold 1860: 156.
41. Fortune 1847: 311.
42. Smith 1847: 227.
43. Cooke 1858: 249.
44. Macartney 1807: 313.
45. Corbin 1986: 101.
46. Inglis 2000: 158–9.
47. Macartney 1807: 419
48. Inglis 2000: 2.
49. Elias 2000: 109–21.
50. Cobbold 1860: 155–6.
51. Cobbold 1860: 157.
52. Taylor 1860: 86. In a similar way, Cooke reported that the Chinese latrine was “ostentatiously placed with its open doorless entrance to the public path”. Cooke 1858: 249.
53. Taylor 1860: 155.
54. Cobbold 1860: 159.
55. Cobbold 1860: 157.
56. Osbeck, *Voyage to China*, 196; Smith, *Narrative of an Exploratory Visit*,
57. Cooke 1858: 249. He described one occasion in which an English traveler from Shanghai was urged to pay thirty dollars. Unwilling to pay, he “in Britannic fashion, had knocked the extortioner into the midst of his liquid cargo”. Ibid.
58. See e.g. Gaukroger 2022: 19–45. It is not a coincidence that British biochemist Joseph Needham (1900–95) has called his monumental project about the history of Chinese

science and technology *Science and Civilisation in China*. The title suggests that he regarded science as an integral part of civilisation and thus a “history of science” as “an element of cardinal importance in the history of human civilisation”.

59. Rogaski 2004: 77.

60. Cobbold 1860: 159.

© J. H. Hueseemann

E-mail: joerg_henning.hueseemann@uni-leipzig.de

Last updated: 24.x.2024