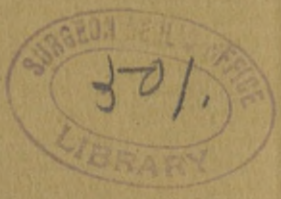
MORSE (EDW. S.)

LATRINES OF THE EAST.

BY

EDW. S. MORSE.

Presented by the author



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Please substitute this corrected copy of Latrines for one sent to you some time ago.

LATRINES OF THE EAST.

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EDWARD S. MORSE.

Reprinted from the *American Architect* of March 18, 1893.

THE proper disposal of human excreta is a subject of vital importance and is to-day occupying the attention of municipalities the world over. The subject has its economic and sanitary side. The question of waste and consequent impoverishment of the land, with the masses reduced to paupers, gave little concern to the rulers, but when a connection was established between this material and infectious diseases which invaded the homes of the people, then the matter aroused interest and questions of public health enlisted the attention of thoughtful men.

Sanitation is a science of recent development. The terms sanitary-laws, sanitary-engineers, health-officers, etc., were hardly known a generation ago. The pages of advertisements, with their accompanying illustrations of porcelain bowls, syphon-traps, flushing-tanks, ventilating pipes, call our attention to devices of recent origin. Plumbing has become a new profession — a science, in fact, since the enlightenment of the public on sanitary matters.

The latrines of a hotel, once so cold, dark and noisome, are now white marble halls, warmed and well lighted: in fact this region, once the most offensive feature of a public house, is now, in all well-appointed hotels, not only the cleanest part of the building, but the air is purer there than in any other part of the structure. It is the only region where one does not detect the characteristic "hotel odor."

As a nation we pride ourselves on being far ahead of the world in the appointments of the latrine. This superiority, however, is confined to city populations possessing modern forms of water-

supply and drainage. The common houses of the people, however, in our northern cities, at least, are usually better provided in these respects than is many a fine house abroad.

Realizing the enlightened opinion concerning these matters in this country, it may be a matter of curious interest to inquire into the ways of Eastern people. While some of the Eastern nations are far in advance in the personal cleanliness associated with the disposition and utilization of sewage, using this term in its most restricted sense, other nations are offensive to the last degree. Indeed one is not compelled to leave Europe to find noisome conditions, and if one reverts to the habits of Europeans hardly more than a century ago, he finds revealed a depravity only paralleled in China and certain parts of Russia to-day.

Aside from the curious interest that may attach to this subject there is a far more vital interest in the bearing the subject has upon public health. The question of a wholesome water-supply, whether pumped from the domestic well or distributed from larger sources by the commune, affects at once the life and health of the citizen. The fact that these supplies can be infected by germs of enteric disease is one that is established beyond refutation. The manner of the disposal of house-sewage is, therefore, one of vital importance, and if it can be shown that those nations whose methods are vicious in these respects are the ones that suffer from such diseases as a vitiated water-supply might induce, it will strengthen communities in their efforts to insure an uncontaminated source.

The nations of Europe stand in periodical dread of cholera from the regions lying east of them. The Orient stands as a continual menace to the nations of Europe, and the time may not be far distant when a propaganda in the interests of sanitary science shall invade these countries with their missionaries of hygiene to teach the people the gospel of cleanliness. That the masses might be ready to receive such teaching is shown by the success accompanying the efforts of medical missionaries beyond that of those who teach dogma alone.

With the threatened invasion of cholera and the undeniable fact that the dread disease comes from the East, an added reason is given for a glance at the methods in vogue for the disposal of egesta in these far-off countries.

China, from its enormous area and dense population, offers one of the most interesting fields for those interested in sanitary science. In no other part of the world, unless it be in Russia, can such depths of filthiness be found as in the cities of China. Mr. Arthur H. Smith, in his interesting work entitled "*Chinese Characteristics*," says that, "no matter how long one has lived in China, he remains in a condition of mental suspense, unable to decide that most interesting question, so often raised, Which is the filthiest city in the Empire? . . . The traveller thinks he has found the worst Chinese city when he has inspected Foochow, he is certain of it when he visits Ningpo, and doubly sure on arriving at Tiensin, yet after all it will not be strange if he heartily recants when he reviews with candor and impartiality the claims of Pekin!"

Dr. Robert Coltman, in his valuable book, "*The Chinese*," calls attention to the existence of various forms of enteric disease, and, with other observers, notes that the Chinese are utterly ignorant of the germ-theory of disease, and, consequently, the persistent violation of all sanitary laws follows as a matter of course. The experience of centuries has taught them that water can be drunk in safety only after it has been boiled, an experience similar to that which has taught them that an emersion in the same fluid for several minutes would be equally disastrous to life. Doctor Coltman says, "they would look with horror at a foreigner drinking a glass of cold water," and he admits that after several severe sicknesses in his own family from drinking what he considered ordinarily pure water, he was forced, ever after, to drink only boiled water, tea or coffee. Despite these precautions, however, on the part of the natives, "cholera occurs as an epidemic every few years and is frightfully fatal. The ports seem to be affected the most, but in the summer of 1888 a wide-spread epidemic swept through Shantung and Chihli, from east to west, sweeping away thousands of lives."

In the *American Architect*, No. 859, an interesting extract is published from the report of Ernest Norfleet, past-assistant surgeon, U. S. A., entitled "Conservation of Filth in Chinese Cities." Speaking of Canton, he says: "The drainage is naturally bad, and what there is consists of several large canals that penetrate the city from the river and receive the filth from smaller canals and street-gutters emptying into them; but all these become greatly

choked, and, notwithstanding the daily rise and fall of the tide, the city everywhere reeks with odors of the vilest sort, *i. e.*, to Christian noses. The natives do not seem to notice them at all. Their water-supply is taken from the river and from wells and a few springs on the north side. The wells must be saturated with the filth that seeps into them from the adjoining soil, for they are fed from the rainfall for the most part; but it is always boiled, and drunk in the form of tea or consumed in soups."

The comparative freedom of the Cantonese from enteric diseases is believed to be due to the rise and fall of the tide twice a day, the heavy rainfalls which wash out the rottenness from the porous soil, the universal outdoor work of the people, the open shops and houses, and, above all, the universal habit of boiling water before drinking. Doctor Norfleet calls attention to the scrupulous way in which ordure is saved, and, as a consequence, pollutes the soil but little. As a matter of fact, this material is put upon the rice-fields in a fluid condition and every rainfall must wash the stuff into the neighboring canals and rivers. And here we may refer to the strenuous protest made by Dr. Letheby, of England, some years ago, against sewage irrigation, showing the grave dangers which would result.

Among the teeming millions in China, there is every reason to believe that a struggle for existence has gone on for centuries, killing off those who could not stand the microbes and bacilli of certain kinds, and, as a result, the survivors are proof against conditions that would instantly depopulate one of our cities.

Enough has been said to show the extreme filth of Chinese cities, yet I must add my own brief experience, as that will enable me to present some further details. At Shanghai, as one enters the native town he encounters men bearing uncovered buckets upon the ends of a carrying-stick; these are the removers of night-soil, and they have their regular routes through the city. If one follows these scavengers he sees them going to the banks of a canal near by and emptying the buckets with a splash into a long scow, or other kind of boat, which, after being filled, is towed away to the rice-fields in the country. The stuff is often spilled in the water by careless emptying. The canal has no current, at least not enough to disturb the green ooze and sickly yellow condition

of the water, which is thick with foulness; yet beside this boat people are dipping up the water for drinking and culinary purposes. Small-pox, at the time of my visit, was epidemic in the town, and I brushed past men in the narrow alleys who were covered with eruptions; everywhere the ground was slimy with filth, and the state of the town was indescribable.

I spent a few days within the city, in the care of a Chinese student, and was permitted to make many sketches of Chinese apartments. It would seem that in the better class of houses each room is provided with a large wooden bucket with close-fitting cover.

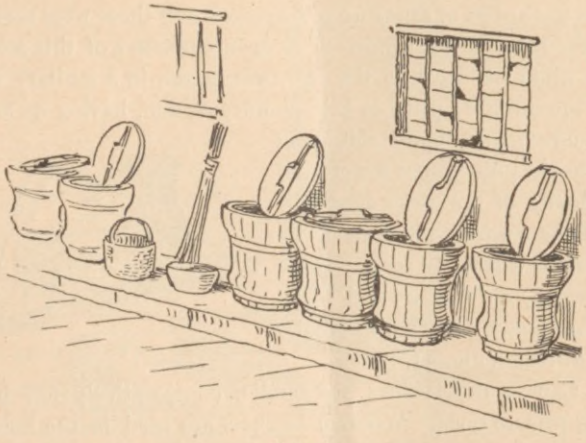

FIG. 1.

These buckets are emptied every day by a man who makes the rounds for the purpose. They are scrubbed by the aid of small shells (*Arca granosa*) which have upon them numerous ribs and nodules. A small basketful is emptied into the bucket and a stiff bundle of bamboo switches is used to stir them about. Rows of these buckets may be seen airing in the back-yard — a suggestion of cleanliness that should be recognized, in spite of the revolting idea of ever having such receptacles in the house over night (Fig. 1). The men who remove this material are often encountered in the narrow streets, and it requires some alertness and skill to avoid being brushed by them, as they move by you in the rough-

est way with buckets swinging. In the back-yard of a number of houses I saw large earthen jars embedded in the ground. Against the sides of these jars was a low framework of wood (Fig. 2), and, barring a shelter above, the whole affair had all the primitive simplicity of similar conveniences all over this country. Near these

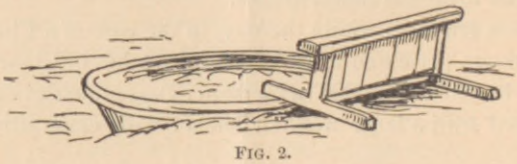

FIG. 2.

places were piles of ashes from the stoves, and these were scattered over the material at times. The open character of this arrangement while offensive to the eye, was better, in a sanitary sense, than the ordinary privy in this country, which, having its receptacle sunk in the loose soil, soon leads to the pollution of the ground and finally of the water supply itself. Square urinals made of stoneware are occasionally seen. These are used by old people, and I was told that they also served as pillows or head-rests (Fig. 3).

FIG. 3.

In Canton the latrines are public, comparatively few houses having private ones. Wooden buckets are used in the house by women, as is the custom farther north, but the men go to the public places. As one walks through the streets of Canton the existence of these latrines is always evident to the nostrils. Occasionally he gets glimpses of these places through an open door which leads into a narrow court, and here on each side, in the filthiest possible condition imaginable, is a long row of low stalls closed by doors. A deep, stone gutter runs the length of the place, close to the wall. Across this, in each stall, are secured two narrow planks, and just in front a narrow gutter runs to carry away the urine (Fig. 4). The whole structure was solid, durable and well-built, and with the faintest notions of cleanliness among the people, would have been much better than similar public arrangements at

home. With a supply of running water in each gutter, the plan might be adopted for public latrines in this country without the slightest modification.

Widely distributed in the city were large earthen jars bedded in the ground, and these were the public urinals.

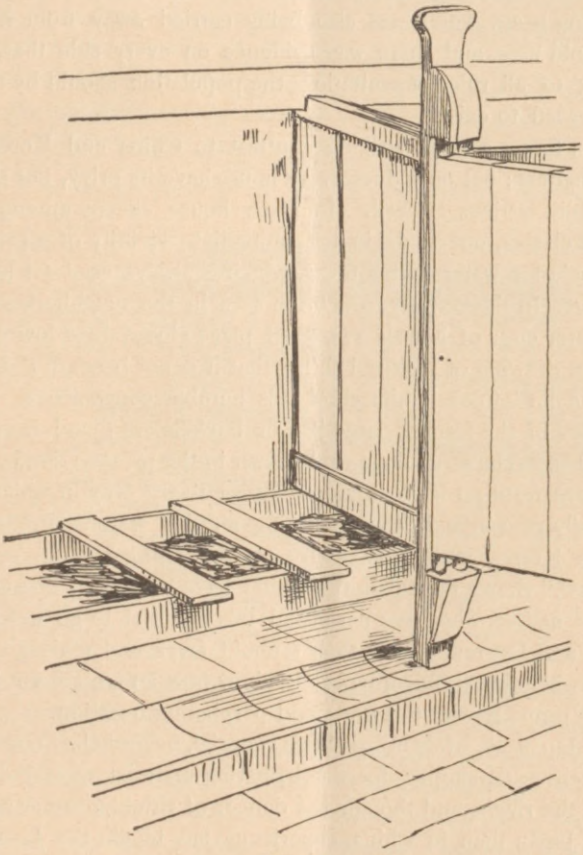

FIG. 4.

Our public latrines and those connected with railroad stations, while vastly better than formerly, are in many cases far from what they ought to be. A plan of a public latrine such as the one just described, or such as one may find in Constantinople, consisting of the simplest possible arrangements and devoid of all seats, is the

only true sanitary device for decent people so long as one indecent person has the privilege of access to it.

From what I have been able to learn from Korean friends, the conditions in Korea are similar to those in China. Carles, in his "*Life in Korea*," says that near Soül he saw women washing clothes in a stream, and, "though the stream was low and its bed served as a dung heap, water was also being carried away from it for household uses, and there was evidence on every side that, according to all rules of sanitation, the population should by right have ceased to exist."

Japan forms a most striking contrast to China and Korea in these matters; not only does every house have its privy, but there are public latrines as well. In every house, except among the poorest classes, one finds in the immediate vicinity of a privy a receptacle for water and a towel, which is always used for hand-washing. In the country, one often sees in the neighborhood of the poorer class of houses a covered place closed by a low door. A clever drawing of Hokusai shows that it is not beneath the dignity of a lord to avail himself of this humble convenience. Receptacles in the form of large jars or buckets are found near the rice-fields. The scrupulous care shown in the preservation of this important fertilizer is in striking contrast to the way in which we wastefully discharge it, thus polluting air and water. Frederick Charles Krepp, in his exhaustive treatise entitled "*The Sewage Question*," shows the calamities which have overtaken communities and nations who have permitted this material to go to waste. Lowell and Lawrence with their typhoid fever, and Chicago with its overwhelming problem before it, show how far we are yet from dealing properly with this great and perplexing question.

The Japanese, while utilizing this material, nevertheless contaminate their water-supply, for the irrigating material soon finds its way to the rivers, and though the danger of drinking water seems less in Japan than in China, experience has taught the Japanese to drink the water boiled or in the form of tea.

The floor of the privy has simply a rectangular opening as shown in Figures 5 and 6, which have been taken from my book on "*Japanese Homes*." The receptacle below consists of a large earthern jar or the half of an oil barrel. This is sunk in the ground and emptied every few days from the outside by means of a long-

handled bucket. The men who are engaged in this work have their regular routes and pay for the privilege. It seems incredible that a large city like Tokio, with its million of inhabitants, has this service performed in the most thorough manner. Indeed, so valuable is this substance that, in Hiroshima, I was informed, in the renting of the poorer houses, if three persons occupied a room together, the value of this product paid for the rent of one, and if five occupied the room no rent was charged.

The result of the transference of this material into the country leaves the shores of a city absolutely pure. No malarious flats nor noisome odors, arising from littoral areas, curse the inhabitants, as with us.

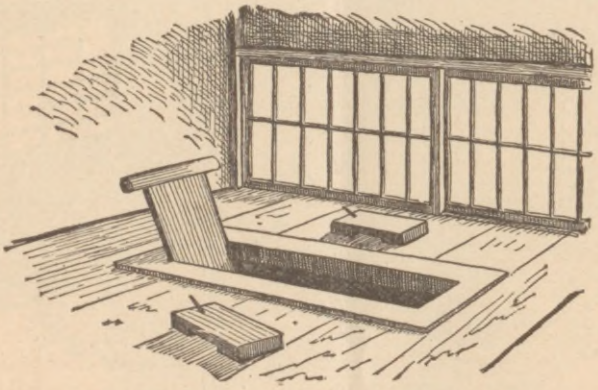

FIG. 5.

In crowded inns much discomfort arises from the odors of the latrine, and even in the better class of houses the privy, being at the end of the veranda, is often perceptible; on the other hand, many of these places might properly be called cabinets, so exquisitely clean and beautiful is the woodwork inside and out. Figure 7, also from "*Japanese Homes*," represents the door of a privy in Tokio. This was inlaid in designs of different-colored woods, and the whole affair was a dainty bit of cabinet-work.

The urinal is usually of wood, though porcelain ones are often seen. The wooden ones are in the form of a tapering box secured

against the wall of the closet. Sometimes sprays of a sweet-scented shrub are placed in these and often replaced. The refinement of the Japanese in these matters is shown by the various names applied by them to the privy, such as—*Setsu-in*, snow-hide, *Chōdzu-ba*, place to wash hands, *Benjo* and *Yōba*, place for business, *Koka*, back frame, etc.

There are certain superstitions associated with the latrine in Japan: one is in regard to the position it must be in relation to the house, the question of prevailing winds never entering into the

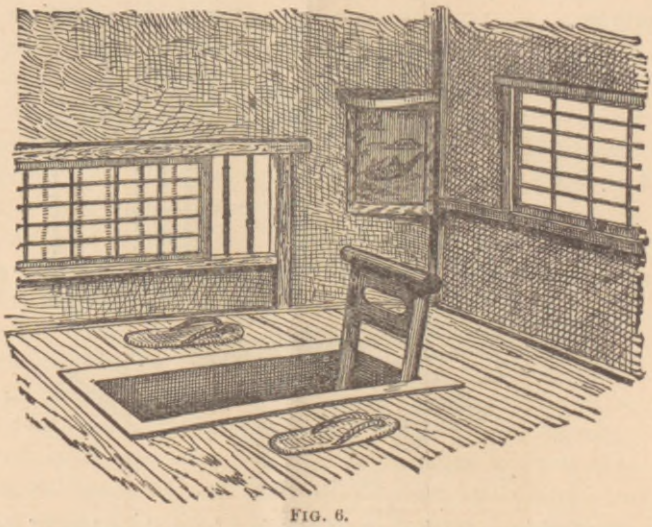

FIG. 6.

matter. I was told that a tree called *nanten*, which bears a red berry, is often planted near the privy. Formerly it was believed that an imaginary animal called *Baku* came to eat this fruit, and also had the power of absorbing bad dreams, hence those using the closet would have their bad dreams dispelled.

On the Malay Peninsula a few closed privies are seen among the natives. By those living over the water a definite shelter supported on poles is built. This is somewhat removed from the

house, a little bridge running to it, as shown in Figure 8. The floor of the convenience is constructed of a few boards with wide interspaces between. On dry land a hole is excavated and sometimes an earthen jar is bedded in the ground over which a few boards are placed.

FIG. 7.

In Siam, among the poorer classes, the privy is erected on a frame-work over running water, usually without covering, being a mere staging. The custom of erecting a staging over running water seems to be common among the people from Bankok to Singapore.

In this connection it is interesting to consider the ancient form of latrine in Japan. Prof. Basil Hall Chamberlin, in his translation of "*Kojiki, or Records of Ancient Matters*," which runs back twelve hundred years or more, shows that in this record the latrine is mentioned several times as being away from the house, and as having been placed over running water, "whence, doubtless, the name *kaha-ya*; that is *River-house*." I may add to this the suggestion that formerly the Japanese privy was uncovered, like the Siamese type before mentioned, as the curious board that stands up at one end of the usual rectangular opening has a name in Japanese which implies this.

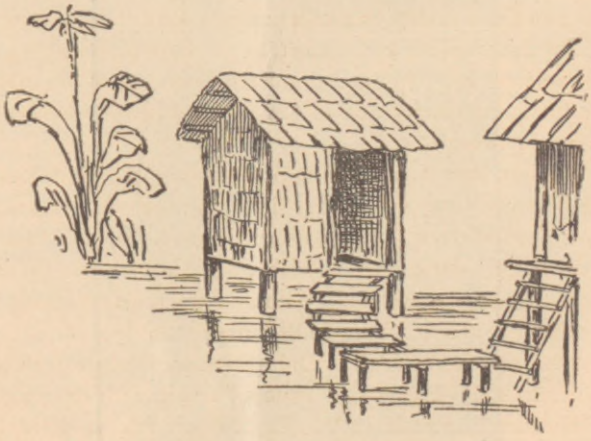

FIG. 8.

It would seem that in Siam and adjacent regions suffering from periodic scourges of cholera, every condition for the wide dissemination of this disease was embraced. Thus, at Bankok, not only are the latrines scattered along the river, but the bodies of those dying of cholera are denied the usual cremation, and are thrown into the river or are given to the vultures, because it is supposed that the devil has been the immediate cause of their death.

Gross negligence in disposing of egesta in these hot regions is not followed by the dire evils that would result from similar methods in colder climates. In Egypt, for example, the native resorts to

the desert, where the hot sun, aided by swarms of insects, soon obliterates all traces of the substance.

The natives of Sumatra and Java resort to running water, the same water being used for drinking and all domestic purposes. The banks of these streams in Java will be occupied by women washing clothes as well. When latrines are built near the inns or larger houses in Java, a bottle of water takes the place of toilet-paper, and the act of ablution is always performed by the left hand; consequently, the proffering of the left hand in salutation, or other act, is considered a gross insult.

In certain parts of India, I was informed that gardens and open lots formed the only conveniences for latrines, pigs acting as scavengers. In Ceylon, the wealthier classes have latrines near the house, but the poorer classes resort to the garden or retreat to the underbrush near by. In many of our Southern and Western states, outside the larger towns, and in Central and South America, the same custom prevails.

In Northern Russia, as I was informed by an intelligent Russian, alien nationalities are usually very filthy in their ways, having no conveniences whatever. In Southern Russia, on the contrary, little houses are constructed in basket-work fashion and of basket material—door, roof and all. Within is a circular opening, or a wide interspace between the planks forming the floor.

If anything would warrant a rigid quarantine against the Russian emigrant, the following extract from an article entitled "Cholera and Cleanliness in Russia" (Mr. E. B. Lanin in the *Fortnightly Review*, Vol. LII, n. s., p. 212) would certainly justify such an attitude. In speaking of inns and public-houses, the writer quotes as follows: " 'The interior of these establishments,' says the semi-official journal, 'displays an inexhaustible store of disgusting foulness, eloquent signs and specimens of which cover the walls, the windows, the tables, the floors and the kitchen. The whole place is permeated with abominable smells and venomous exhalations ruinous to health. At first the atmosphere stupefies the visitor, then produces giddiness and sickness. The unpaved yards of these establishments are mere *cloacas* abounding in miasms, in the thick of which wagon-loads of fish, game and vessels containing fresh

milk are left standing for considerable periods. The provisions thus conveyed in filthy vehicles and impregnated with this mephitic atmosphere cannot but sow disease-germs broadcast among the population. If to all this we add the utter absence of those elementary sanitary conveniences with which all human habitations ought to be supplied, or, what is much worse than their absence, the existence of substitutes into which it is impossible to enter, and in the vicinity of which it is dangerous to pass, we shall be better qualified to form an idea of what these nurseries of disease termed inns and public places are like.' " The writer then goes on to say: "The hygienic condition of yards, streets and public places is on a level with that of private dwellings, and the excreted refuse of houses, which, in European towns, is made to disappear as rapidly, opportunely and mysteriously as a suspected subject of the Tsar's, is left as inviolate as if it were a sacrifice to the unclean gods. 'Even in our two capitals, the method of removing refuse and impurities is so antediluvian that it would be an abuse of terms to allude to it as sanitation. In the most favorable cases, the "system" consists in digging a big hole in the yard of every house and throwing into it all the garbage, offal, etc., and leaving it undisturbed for months, and for longer terms than months, until at last it is carted off in boxes and barrels, to some place outside the city. It is easy to imagine to what extent the soil is permeated with filth and the atmosphere vitiated with miasms, and in what an Eldorado the microbes of infectious diseases revel. And it must be noted that even this "system," defective as it is, is followed only in favorable cases, *i. e.*, when private houses are provided with closets. As to the "system" pursued when there are no water-pipes and water is dear, it is better not to speak of it. It is a horror.'

"In Staraia Russa, Kiriloff, Tsherepovets, etc., 'cesspools are constructed under the floors of the houses;' in Samara, 'the river-banks consist of solid filth sprinkled over on the top with sand;' 'the streets of Irkhutsk are made pestilential by the putrid carcasses of dogs and cats lying half-buried in mounds of ordure;' 'the city of Veronesh is saturated with filth, the excreted impurities of the barracks oozing out into the river, on the surface of which dead

dogs are occasionally seen floating about;' in Elizabethpol, 'the carcasses of dogs and cats lie undisturbed on the streets in considerable numbers.' In the most widely-circulated newspaper of Kharkoff, a city of over 200,000 inhabitants, we read among the advertisements: 'House for sale: exclusively owing to the circumstance that nearly all the neighboring house-proprietors continually throw foul water and every species of filth into the streets. Address: Pesski, Ivanovsky Street, No. 25.' "

From all that I can learn, the Greeks are equally vile in these respects, though the hot climate tempers their offences somewhat. In an extraordinary work entitled "*Scatologic Rites of all Nations*," by Capt. John G. Burke, U. S. A., a work overflowing with curious ethnological material, I find a number of allusions as to the means of disposing of excreta in different parts of the world, and these are here subjoined: "Tartars do not abide long in one place. New camps are established from time to time, to avoid the accumulations that have taken place." The Tungouses of Siberia told a traveller that "they knew no greater curse than to live in one place, like a Russian or a Yakut, where filth accumulates and fills the inhabitants with stench and disease."

According to Hawkesworth's voyages, no privies existed in Madrid till 1760, and the determination of the king to introduce these conveniences, as well as sewers, and to prevent the throwing of human ordure out of windows after nightfall, as had been the custom, nearly precipitated a revolution. Edinburgh, among other cities, was long notorious for this disgusting practice. Privies were ordered for each house in Paris in 1513. In England, privies connected with houses of the gentry appeared in the latter part of the sixteenth century. In ancient Rome there were public latrines, but no conveniences attached to the dwellings.

In reprinting this paper an opportunity is given me to correct an error, to which my attention has been called by Edward Falconer, Esq. He refers me to Sir William Gell's "Pompeiana;" and in the earlier work on Pompeii by Gell and Gandy, I find the following interesting description of the house latrine. On page 173 it is stated, "On the right of the way upstairs is the hearth for cooking. . . . . On the other side is an arched recess

about three feet deep; a convenience, according to modern, at least, English ideas, most inconveniently situated. The wood-work of the seat is gone; the marks for the hinges, and fastening to the door may be observed. It would appear, that in ancient, as in modern Italy and Greece, a proximity between the ultimate receptacle of the aliments and their place of preparation was considered desirable." The statement is also made that in ancient Rome were one hundred and forty-four cloacinæ.

Portable vessels began to be used in England in 1590, and in this connection I may add that the use of these vessels excites a good deal of astonishment and disgust among the Japanese. An intelligent Japanese told me that when he first saw them he was much perplexed, and in reflecting on the reason which led to their use by a people who seemed so sensitive and were so easily shocked by certain customs in Japan, came to the conclusion that it was owing to the coldness of the climate that led to so filthy a custom.

I have wondered what his conclusions were when he saw for the first time the typical rural device in our country, a fair description of which is here quoted from the "*Massachusetts State Board of Health Report*" (1874, p. 235):

"As to country privies, one of our correspondents has well said that they are 'a disgrace to civilization.' A philosophical friend of the State Board says that the march of civilization is in no way more correctly marked than by perfection in water-closets. If to this rule a universal application were given, it would place our farmers, as well as the vast majority of our rural population, well back in the ranks of barbarism. We prefer to believe that this is the only respect in which they are behindhand; but that they are so in this is very certain. The common country privy, unventilated, except by the door, standing over a reeking mass of corruption, either contained in a vault or lying upon the surface of the ground, a place foul and pestilential beyond description,—this must be the daily resort of every member of the farmer's family. If it adjoins the house, its poisonous odors penetrate to the living rooms; if standing severals rods away, as it frequently does, an exposure to the weather is involved in reaching it. In either case, in winter it is frightfully cold, and its use involves a chill, which, to women and

children especially, coming from the warm rooms, is a potent cause of disease. Undoubtedly, the constipation which is so general among country-women is in great part due to the dread of going to this abominable place."

Captain Burke, in speaking of the introduction of latrines, is of the opinion that their origin cannot be ascribed to purely hygienic considerations, since many nations of comparatively high development manage to get along without them ; while, on the other hand, tribes in low stages of culture have resorted to them. He quotes Captain Cook as recording the fact that the New Zealanders had privies to every three or four houses, while the natives of Marquesas bury their egesta.

Reference is often made to the laws of hygiene recognized by the Jews as recorded in the Mosaic scriptures, such as matters connected with food, isolation of the sick, removal from camp of effete matters, etc. The burial of fæcal matter outside the camp limits is enjoined in Deuteronomy xxiii, 12, 13. This ordinance, though often quoted, does not seem to have been based on hygienic grounds, judging by the context, but solely that the Lord in walking through the camp should not have his eye offended by unclean things. The custom once established, for whatever reason, would naturally commend itself and survive, though, in the regions inhabited by the Jews at that time, the hot sun, dry air and swarms of insects would rapidly dissipate all matter of the kind.

A review of mankind throughout the world shows that only a small proportion have used even the simplest device for a latrine ; an artificial device most probably arose from an agricultural and not from an hygienic necessity. The act of ingestion even among savages has been accompanied by a certain rude etiquette and with the aid of simple dishes often decorative, while the action of egestion still places the larger portion of the human race on a level with his simian relatives. In many civilized communities customs have prevailed which have resulted in grave diseases and frightful epidemics. We find at the top of another twig of mammalian descent a group of animals which has surpassed man in these matters. The cat buries its egesta. Even among nesting-birds, as the robin, the most scrupulous cleanliness prevails.

The tendency of civilization has been in the direction of better and cleaner methods. Sensitiveness to offensive conditions, like refinement in other ways, is a matter of evolution, and it can be said that the intellectual status of a community may be gauged by the advance it makes in disposing of waste-matters in a clean, wholesome and economical way.

NOTE.—The author is indebted to Harper & Brothers for the privilege of using Figures 5, 6 and 7 from Morse's "*Japanese Homes*," and to Ticknor & Co. for permission to reprint this paper.