WATER-CLOSETS.

WATER-CLOSETS as conveniences are so necessary, and in their proper construction are so important to our comfort and health, that we think any research into their history will repay us by increasing our knowledge on the subject.

It will be necessary in this paper to review, cursorily, other modes of convenience in countries where, and at times when, water-closets properly speaking were not in use.

Naturally, we first examine the ruins of Egypt, where existed the earliest traces of civilization, for remains of water-closets. The small private and detached rooms which we find in the remains of Egyptian houses were probably used as privies. Ewbank, in his work on hydraulics, calls the summer chamber of Eglon, king of Moab, a water-closet.

If we thought proper to follow the example of Ewbank we would call water-closets the private rooms which were in an isolated position in one of the halls, being near a door communicating with the other chambers. Sir J. Gardner Wilkinson says: "These rooms bear a striking resemblance to the before-mentioned private room of Eglon."

That the Greeks made use of privies in their houses is proved by an old writer from a passage in Aristophanes (Ecclesiaz., verse 1060). This was about four hundred years before Christ.

The Romans, if not the first in art, the leaders in all that pertained to luxury and comfort, were the first, as far as we can ascertain, to use water-closets. In Rome we find four kinds of receptacles for excreta. Close stools (tasana), in which the rich ancients sometimes used gold or silver bowls; vases (gastra) which were stationed on the roadways; public privies (cloacina), of which Sir William Gell tells us there were one hundred and forty-four in Rome; privies (latrina), probably for private use.

From their derivation we would infer the two classes last mentioned to be water-closets. Cloacina being derived from cloaca, a sewer or drain, and latrina being a diminutive of tasatrina, a wash-bowl or basin. No doubt, as at the present day, the name included the room as well as the basin or receptacle contained in the room. Pompeii was covered with ashes and lava by an eruption of Mount Vesuvius more than eighteen hundred years ago, and among its ruins were found the most perfect remains of an ancient water-closet. Pompeii being a small town and a province of Rome, we would suppose the water-closets to have been more numerous and more elaborately ornamented in the capital city.
In the *Pompeiana* Sir William Gell, describing a privy, writes of an arched recess about three feet deep discovered in the kitchen of one of the ruined dwellings of Pompeii, most inconveniently placed, according to American ideas (Fig. 1). The wood-work was gone when discovered, about 1819, but the marks of the hinges and fastenings were still visible. Three or four feet to one side were the remains of brick ovens. It would appear, according to a quotation from *Plineius*, that in ancient Italy it was considered desirable to have in close proximity the place for the preparation of the food and the receptacle for the excreta. The privies in or adjoining the kitchen were probably for the women, while others which have been discovered at the back of the house were for the men. These chambers were sometimes finished beautifully, having tesselated pavements, and in some instances windows looking into small interior courts, an example which the moderns seem injudiciously prone to follow.

Fosbrooke says, under the head of ancient water-closets, “That of the Palace of the Cæsars is adorned with marble and mosaic. At the back of one is a cistern, the water of which is distributed by cocks to the different seats. The pipe and basin of one still remains at Pompeii and is like ours.” (1825 A.D.)

In a paper read before the Society of Antiquaries in 1775, relating to discoveries in Pompeii, Sir William Hamilton says: “Close to the Temple of Isis is a theatre, no more of which has been cleared than the scene and corridor which leads to the seats. In the corridor was a retiring-place for necessary occasions, where the pipe to convey the water, and the basin like that of our water-closets (1775) still remain, the wood of the seat only having mouldered away by time.”

The above-mentioned remains, seen by Sir William Hamilton, conclusively prove the existence of water-closets more than eighteen

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1 A paper by Mr. Gleem Brown, architect, read at the Sixteenth Annual Convention of the American Institute of Architects, held at Cincinnati, October 26-27, 1882.
4 *Violett-le-Duc has given the Egyptians*' Greens' and Romans' privies (latrines) in their houses in the *Habitations of Man*, pages 150-100 and 231.
hundred years ago, with basin, water-supply and waste for the water, and excreta must necessarily have been carried off by a drain of some kind.

In all descriptions of ancient baths we find the latrina, that near the entrance of the ruins of the one in Pompeii, mentioned and shown in the illustration, but it is in no case fully described.

According to Olympiodorus there were in the Thermae of Antoninus (about 206 A.D.) sixteen hundred seats of marble with holes like a close stool for the convenience of those who attended either the baths or the gymnasion.

Vitruvius, strange to say, does not mention water-closets or privies in his description of private houses. Both ancient and modern writers seem to avoid the subject. Ewbank states that a number of water-closets were erected near the mosques and temples in Old Rome, Smyrna, Constantinople, and probably all ancient cities. He does not give his authorities for the statement, and it would appear as if it were a little overdrawn. With the decline of the Roman empire, water-closets, following her other luxuries and comforts, seem to have gone out of date.

Giving a cursory review of the privies used in the middle ages we leave unaccounted for nearly a thousand years, during which time there seem to have been no privies used inside houses. The castle of Rochester, designed in part by Bishop Gundulph about 1088, has outlets for privies and sinks similar to the outlets for smoke, in the first instance going downward, instead of upward as in the case of their chimneys.

In a paper read by Edward King before the Society of Antiquaries (1782 A.D.) in relation to a Saxon castle, he says: "In one of the corners is a narrow passage to a small closet in the wall, which served for a privy, having the usual kind of an outlet through a loop." (Fig. 2.) Diagonally across from the privy is a similar passage and closet supposed to have been a well. This tower or castle was undoubtedly Saxon, having been given by William the Conqueror to William de Forel and called the Castle on the Peake. We learn from Viollet-le-Duc that castles (châteaux) at the commencement of the thirteenth century had privies (latrines) on each floor, constructed so as to avoid the inconveniences attached to these necessities. They were generally found projecting on corbels, from an angle formed in the wall (Figs. 3 and 4) so the fecal matter might be cast well out and down the precipice into the woods which usually surrounded these buildings.
Thirteenth-Century Privy.

He describes one which is corbelled from the wall and buttress in the usual way. The seat is concealed and protected from missiles by the corbels, and it communicates with the halls and stairways by a door. In the same closet there is a urinal with drain, and a drip on the outside, and also a window opening into the outer air. In the castle of Landsberg on the Lower Rhine, which dates from the twelfth century, there is one (Figs. 5, 6, and 7), that differs from the above. The seat is guarded by a rectangular projection from the wall which is supported on corbels. The seat is protected from arrows and other projectiles by a stone shaped like a T, which hangs on and below the corbels. In garrisoned castles they always had projections reserved for privies, and they were separated from the main building by small passage-ways. There are privies of this kind in the castle of Chauvigny, while the castle of Northumberland, England, has them, almost monumental in charac-
The castle of Marcusas has an extension devoted to latrines, a set of four for each story (Figs. 8 and 9). There is a passage-way extending from the main building with solid stone balustrades to prevent people from falling. There is a chute or drain from each seat leading to a double-arched cesspool. This part of the building is ventilated by a large window above the highest tier of latrines. The castle of Pierrotouls was constructed in the fourteenth century. It has a set of latrines arranged for each story in a semi-circular projection (Figs. 10, 11 and 12). The cesspool, as we will call the place for the receptacle of the excreta, has a door for cleaning out the fifth, and a window for ventilation. In the centre of this chamber is a large piece of cut stone on which a man can stand conveniently while cleaning out the pit. The chute or drain leads directly from the seats to the cesspool and is carried through the roof for the purpose of ventilation; the first instance, probably, of a sump-pipe being carried through the roof. These closets, and it was nearly always the case at this period, as we have mentioned before, were separated from the main building by a short hall with a door at each end. This idea, in some instances, has been utilized in modern times.
These closets also have windows and vents in each story. Sometimes latrines were directly adjoining dungeons with drains running to the cesspool (Fig. 18).

Fig. 12.—Perspective Sketch.

Fig. 13.

a, Loo. b, Naphron. c, Cistern. d, Drain. e, Cesspool.
Sight-seers are frequently shown through these latrines, and are informed that the cesspools are dungeons, the agonies which have been endured by prisoners in their depths being graphically depicted by the guides.

Curiously enough the first mention we have of a water-closet, properly speaking, after the ones used by the Romans, is connected with the publication of a poem by Sir John Harrington on the "Metamorphosis of Ajax" (a close stool or commode), published in 1566. This poem was occasioned, as Henry Harrington reports, by the author having invented a kind of water-closet for his house at Kelson. 1

In the East water-closets, or what may be called water-closets, seem to have been used at an early date.

Ogilby, in a description of the city of Fez, says: "The river Fes subdivides into many clear-running channels through the streets, serving not only each private house, but churches, inns, hospitals, and other public places, to their great convenience. Room for the mosques are one hundred and fifty common places of ease, built four-square and divided into single stool-rooms, each furnished with a cock and marble cistern, which scorcheth and keepeth all neat and clean, as if these places were intended for some sweeter employment." 2

Tavernier, in his "Relations to the Seraglio," says: "The places for the easing of nature are on the right hand divided into four little rooms, which are always kept very clean, and paved with square pieces of white marble. The Turks do not sit down as we do when we are in those places, but they squat down over the holes, which is not half a foot, or a little more, above the ground. The hole is covered with an iron plate, which rises and falls by a spring, and turning one way or the other, at the falling of the least weight upon it, resuming the station it was in before as soon as the ordure has fallen from it. I have observed that the Turks and generally all the Mohammedans do not use paper in such cases, or upon any indecent occasion, and when they go to those kind of places they carry along with them a pot of water, to wash themselves within, and the iron plate is also made clean at the same time, and to make clean at the same time, and the hole being always covered, and the iron plate always kept clean, there can be no ill smell in the place, and that the rather for the small current of water that passes under that place carries away all the ordure."

... "A little gallery which lies to the left hand of the bath, leads to places designed for the easing of nature, and every seat has a little cock which supplies them with water to wash themselves after they are done."

Baldwin Latham, quoting from Erbark, would lead us to suppose the above-mentioned cocks were primarily for the purpose of washing the bowl of the closet, if there was one, while it was for the purpose of washing the person using the closet.

We see no mention of water-closets in Europe again until 1770. During the intervening period, while art had profoundly entered into a new life, the useful arts seem to have been ignored.

In England a close stool or commode, called an axaj, or jakes, was generally used. According to Viollet-le-Duc and other writers, cleanliness, the first principle of sanitation, was thought of very little importance during this period.

Privies were used in Germany before they were in France. In Paris people were allowed to throw their excreta from the windows into the street, provided they gave the verbal warning, "Croy l'eau" three times. In Edinburgh the same custom prevailed; parties walking the streets had necessarily to cry "Haad yer inn," for fear of what might befall them.

The above practice was forbidden in Paris in 1325, but seems to have continued in Edinburgh until 1759. It was during this period also, that men walked the streets of Edinburgh carrying pails or buckets for the public convenience, and wearing a cloak large enough to envelope their customers and apparatus, crying "Wau wants me for a lawbee."

The Parisian code of laws improved in 1513 expressly ordered that every house should have a privy, but as late as 1700 A.D. the police were instructed to close all houses whose occupants did not provide one within a month.

During the reign of Louis XIV of France the courtiers found it necessary to ease themselves in the halls of the palace of Versailles because there were neither privies nor water-closets. Viollet-le-Duc tells us that close stools were used in the palace of Versailles in the eighteenth century. He also writes of an old lady belonging to the court of Louis the XV of France, who passed through the halls of St. Cloud with him when a young man. The odor of an offensive vessel caused her to explain with pleasure, "This smell recalls the good old times." Some of our modern closets would have delighted the old lady.

Privies were not used in Spain until about 1770, and have not been used in Warsaw more than fifty years. As late as 1846 we find in Berlin "small closets located on the landings of the stairs, which require to be emptied every other night, to the no great satisfaction of the olfactory nerves."

Aubrey, writing in 1718, describes a water-closet which he had seen. He says: "Here (at Sir Francis Carew's), Beddington, Sur-

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2 Ogilby's offiss, page 160. 1619.
3 Inventions, John Beeckman, pages 202-203. 1610.
I saw a pretty machine to cleanse an 'house of office,' viz.: by a small stream of water, no bigger than one's finger, which ran into an engine made like a bit of fire-shovel, which hung upon its centre of gravity, so that when it was full a considerable body of water fell down with some force and washed away the filth. This must have been very much like the closet seen in the city of Fez by Ogilby.