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Bathrooms and Toilets in Babylon-Merkes: Speculation or Reality?

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Abstract This paper examines the rooms with drainage facilities of the Neo-Babylonian dwellings in Babylon-Merkes, which Reuther interprets as bathrooms or toilets in his excavation report. This interpretation will be reappraised by asking the following questions: is it possible to understand Neo-Babylonian attitudes to hygiene in dwellings in Babylon-Merkes, to identify specific rooms in which measures were undertaken influenced by such attitudes, and to link such precautions to a specific social class? If not, can another interpretation for drained rooms be proposed relying on the Akkadian words used for individual rooms and features? The final aim is to provide a comprehensive overview of the potential functions of drainage systems in residential areas.

Keywords Drainage system. Neo-Babylonian dwellings. Hygiene. Soakaway. Drained rooms.

Summary 1 Introduction. – 2 The Neo-Babylonian Dwellings and Reuther's Interpretations. – 3 Reuther's General Definition of the Bathroom and Its Reappraisal. – 4 Reuther's General Definition of the Toilets and Its Reappraisal. – 5 The Function of a Soakaway. – 6 An Experiment. – 7 Archives N9 and N10 of the Residential Buildings in Babylon-Merkes. – 8 Toilets & Co – The *bīt musâti*. – 9 Drainage Systems in Texts (*asurrû*). – 10 Conclusion.

1 Introduction

In the course of the excavations of Babylon's monumental buildings under the direction of Robert Koldewey, parts of the Neo-Babylonian residential area were uncovered, examined and interpreted.[1] Oscar Reuther was responsible for this work.[2] Between 1907 and 1912 Reuther documented 18 residential buildings in Babylon-Merkes, which date to the Neo-Babylonian period.[3] His findings were published in 1926 in his excavation report *Die Innenstadt von Babylon (Merkes)*.[4]

Later scholars have followed Reuther's work uncritically. The drainage of the residential buildings excavated by Reuther was catalogued by Christiane Hemker (1993). Maria Krafeld-Daughery (1994), in her work on ancient Near Eastern houses from an ethnological and archaeological perspective, adopted the definitions from the excavation reports and interpretations of the functions of the rooms.[5] Simi-

1 In 1980, further excavations were carried out in Babylon by an Iraqi team. Since the two dwellings documented during this excavation are only fragmentary and insufficiently documented in terms of their drainage for a detailed analysis, they are not considered in this article (Pedersén 2021, 251-5; Al-Bayati 1985, 71-2).

2 Reuther 1926a.

3 Pedersén 2021, 245-50.

4 In addition to the Neo-Babylonian buildings, sparse remains of the Old Babylonian and Kassite dwellings were also uncovered. As the presence of groundwater did not allow complete excavation of these earlier houses, they are not included in this article.

5 Krafeld-Daughery 1994, 94-124.

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larly, Peter Miglus (1999) published a study on dwellings in Babylonia and Assyria, in which the work of Reuther was included.[6] However, in none of these works were the room functions proposed by Reuther, in particular the functions of those spaces interpreted as bathrooms and toilets, critically scrutinised and checked for accuracy.

The aim of this paper is to reappraise Reuther's reading of the archaeological evidence and to combine all available sources to shed new light on the alleged use and presence of bathrooms and toilets in Babylon-Merkes.

2 The Neo-Babylonian Dwellings and Reuther's Interpretations

Based on Reuther's descriptions, 18 residential buildings were examined [tab. 1] [fig. 1].[7] Because four of the buildings were fragmentarily preserved and drainage facilities were not identified in them, they are not included in this analysis. The total number of residential buildings used in the following calculations is therefore 14, which contained 215 rooms. In these houses, 26 rooms had drainage. These were distributed across ten of the 14 residential buildings [tab. 1].[8] Reuther interpreted seven of these 26 rooms as bathrooms, four as toilets, four as courtyards, two as main rooms, five as side rooms, one as an entrance area and another as a kitchen [fig. 2]. For three rooms Reuther did not offer an interpretation. The interpretations of courtyard, kitchen, main room, and entrance room seem plausible and are therefore not questioned here. Reuther apparently referred to the rooms with drainage facilities, when he was unable to assign a precise function, as side rooms.

The Neo-Babylonian residential buildings in Merkes contained on average 15 rooms, of which an average of two had drainage facilities.[9] Eight of the 14 residential buildings are below the average number of rooms [fig. 3]. 9 rooms with drainage facilities were found in five of these eight houses. Reuther interpreted four of these 9 rooms as bathrooms and two as toilets. According to Reuther, rooms with both functions were attested only in House VI, three houses had a bathroom but no toilet, and House IX had a toilet but no bathroom.

Six houses had more rooms than average. In this category, significantly more houses possessed drainage systems, and only House XVI had no drainage facilities. Houses I and II, again following Reuther, had both a bathroom and a toilet. House III had one bathroom only. None of the houses examined in this category had only a toilet without a bathroom.

Looking at the distribution of bathrooms and toilets according to Reuther and taking the numbers of rooms in the houses into account, it is noticeable that these room functions are found more frequently in the houses of below-average numbers of rooms. If one further assumes that the numbers of rooms in the house is directly related to the wealth of the inhabitants and that Reuther's allocation of rooms is correct, the result is that personal hygiene would have to be associated more with a population class that did not belong to the elite. This result is surprising and invites us to re-examine Reuther's allocation of the spatial function.

6 Miglus 1999, 307-10.

7 Reuther 1926a.

8 In Houses XIII, XVI, XVII and XVIII, no drainage was documented by Reuther.

9 18 houses − 4 fragmentary houses = 14 houses suitable for investigation. 215 rooms ÷ 14 houses = 15.36 rooms. 26 rooms with drainage facilities ÷ 14 houses = 1.86 drained rooms.

Table 1 Overview of the rooms with drainage facilities in the 18 investigated dwellings in Babylon, based on Reuther's excavation report (Reuther 1926a)

House	**Rooms in total**	**Rooms with drainage**	**Reuther's interpretation of the functions of the rooms with drainage**				
			Courtyards	Bathrooms	Toilets	Kitchens	Other
I	19	3	0	1	1	1	0
II	19	4	1	1	1	0	1
III	29	4	1	1	0	0	2
IV	23	3	1	0	0	0	2
V	14	2	0	1	0	0	1
VI	12	2	0	1	1	0	0
VII	fragmentarily preserved						
VIII	fragmentarily preserved						
IX	11	3	0	0	1	0	2
X	23	3	0	0	0	0	3
XI	fragmentarily preserved						
XII	10	1	0	1	0	0	0
XIII	11	0	0	0	0	0	0
XIV	fragmentarily preserved						
XV	11	1	0	1	0	0	0
XVI	18	0	0	0	0	0	0
XVII	8	0	0	0	0	0	0
XVIII	7	0	0	0	0	0	0
Total	**215**	**26**	**3**	**7**	**4**	**1**	**11**

Figure 1 Overview of the rooms with drainage facilities in the 18 investigated dwellings in Babylon, based on Reuther's excavation report (Reuther 1926a)

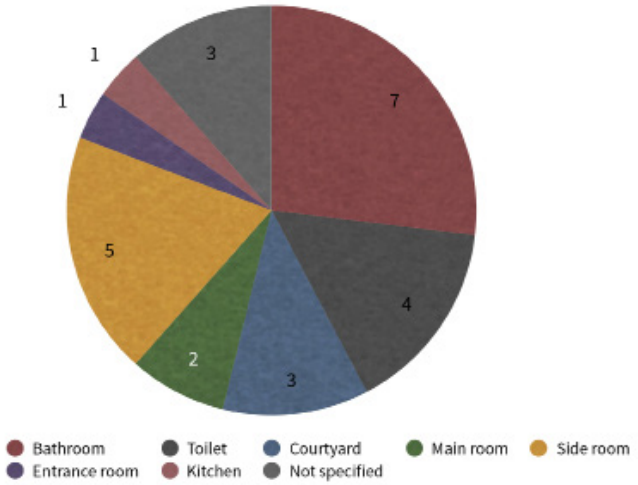

Figure 2 Functions of the rooms with drainage facilities according to Reuther (1926a)

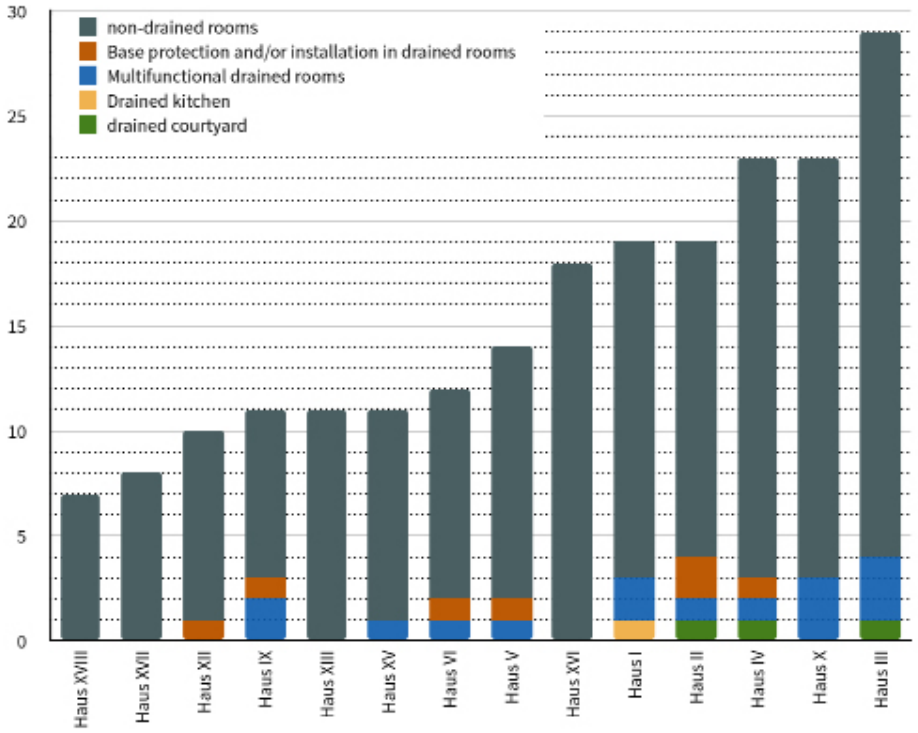

Figure 3 Overview of the rooms with and without drainage systems in the 14 investigated Neo-Babylonian dwellings in Babylon-Merkes based on Reuther's excavation report. The houses are sorted by size

3 Reuther's General Definition of the Bathroom and Its Reappraisal

Reuther used Room 10 in House I, which he referred to as a bathroom, to establish a general definition of the room's function [fig. 1] [tab. 2], according to which a bathroom is characterised by the presence of a drainage system, the walls are protected by a wall skirting and the floor is covered with bitumen.[10] Interestingly, Room 10 of House I has no such floor, nor are the bases of its walls protected.[11] Reuther also noted "daß sich gleich eingerichtete Zimmer bei einer Anzahl anderer Häuser an der gleichen Stelle im Grundriss wiederfanden". The author went on to write about the location: "Einem Badezimmer würde die etwas abgesonderte Lage in der Gruppe der Wohnräume ganz angemessen sein".[12] In his description of the bathroom in House II, there is a further criterion according to which Reuther referred to rooms as bathrooms: the floor is lowered towards the soakaway exclusively in these rooms. Reuther also imagines the activity of bathing as follows: "Das Baden wird man sich wie in Ägypten als ein Übergießen vorzustellen haben, wobei man dem vorwiegend heißen Klima gemäß wohl meist kaltes Wasser benutzte, wenigstens deuten keine Spuren auf Heizvorrichtungen in den Baderäumen".[13]

In short, according to Reuther, a bathroom is characterised by a floor with a bitumen coating, walls protected by skirting, and its position in the floor plan, located separately within the group of the living quarters. As Reuther did not elaborate on this last point, it seems that the bathroom is found at the end of a chain of rooms, and thus not directly connected to the main room or the courtyard. However, Reuther's definition of bathroom is sometimes inconsistent. In general, he does not give a conclusive reasoning as to why the features he named are supposed to be exclusive to bathrooms and not shared with other rooms in which large quantities of liquids were handled. In addition, not all of the rooms classified by Reuther as bathrooms possessed all the features he deemed typical of bathrooms. All this invites one to re-examine the available archaeological evidence.

As for the floors, six of the seven supposed bathrooms have baked brick floors with bitumen coating, as stated in the original definition [tab. 2]. In one case, the floor is plain brick (House I/Room 10). As for the skirting, only four of the seven rooms had a skirting to protect the walls, consisting of baked brick in three cases and brick and bitumen in one case (House VI/Room 7). No skirting could be detected in the supposed bathrooms of Houses I, III and XV. As for the location, a glance at figure 5 shows that only three rooms are located separately in the group of the living quarters (House I/Room 10, House VI/Room 7 and House XII/Room 10). They represent the end of a chain of rooms and are not directly connected to the main room or the courtyard. All the other supposed bathrooms are not part of the living quarters (House V/Room 9), are part of a chain but not at its end (House II/Room 12, House III/Room 15, House V/Room 9) or are directly connected to the main room (House XV/unnumbered room).[14] All seven rooms are located far away from the entrance area.

Table 2 Overview of the rooms interpreted as bathrooms by Reuther (Bielefeld, in preparation)

House/room	Floor	Base protection	Fixed installation	Connection to main room	Connection to the courtyard	Part of a room chain
I/10	brick	no	no	yes	no	yes (end)
II/12	double brick + bitumen	brick	no	yes	yes	yes (transit room)
III/15	brick + bitumen	no	no	yes	yes	yes (transit room)
V/9	brick + bitumen	brick	no	no	yes directly	yes (transit room)
VI/7	brick + bitumen	brick + bitumen	no	yes	yes	yes (end)
XII/10	brick + bitumen	brick	niche in west wall	yes	no	yes (end)
XV/no number	brick + bitumen	no	no	yes directly	no	no

10 Reuther 1926a, 89.

11 Reuther 1926a, 81.

12 Reuther 1926a, 89.

13 Reuther 1926a, 95.

14 Either the courtyard or the main room was defined as the start of a room chain, depending on which of the two rooms the room was connected to. If the room was connected to both, the courtyard was counted as the beginning and the main room as the end of the chain. A room chain was defined as having at least three rooms connected to each other.

4 Reuther's General Definition of the Toilets and Its Reappraisal

In contrast to bathrooms, Reuther did not provide detailed criteria to define a toilet. There is merely a general assumption in his report that filled drainage shafts indicate a toilet, albeit without any explanations how this filling should look like **[tab. 3]**. Reuther assumed that installations above the floor were originally present in all rooms interpreted as toilets, but these were no longer preserved in all cases. This also emerges from his description of Rooms 13 in House II and 9 in House IX, in which he used the platforms located above and draining into the soakaways in these rooms as a reason to attribute the function of a toilet to both rooms. Also, Reuther's descriptions suggest that, wherever possible, he sought a direct spatial connection between the bathroom and the toilet, assuming they would be set in adjoining rooms.[15] However, he does not include such a connection as a general point in the definition. In a supplementary article, Reuther also mentioned the criterion that the toilet was drained by a soakaway and did not necessarily need to be located in the house.[16] As the excavation report contains no archaeological evidence for toilets that were located outside the dwellings, e.g. in the form of public baths or toilet buildings, this point will not be considered further below.

In sum, to interpret a room as a toilet, Reuther stated that it had to be drained through a drainage shaft, which had a backfill, that an installation must have been in direct connection with this drainage shaft and that the bathroom and toilet were directly connected to each other.

By reviewing the evidence, it emerges that all four toilets in this investigation were drained via soakaways. However, there is no indication in the excavation report for any of the rooms when the soakaway was filled and what materials, if any, this backfill was composed of. There is also no indication of when the fill entered the soakaway. It can therefore not be ruled out that this step only took place after the seepage shaft was decommissioned. Furthermore, there is no description of the exact construction method of the individual shafts in Reuther's excavation report.

As for installations, Reuther documented a fixed installation in Room 13 of House II **[fig. 4]**, which he describes as a brick platform rising 50 cm above the floor, with an 18 cm wide slot at the top. Behind the slot, steeply inclined bricks led down into the drainage shaft.[17] According to Reuther, there was also an installation above the soakaway in Room 9 in House IX, but he did not document this in any detail.[18] None of the other rooms he mentioned as toilets had a fixed installation.

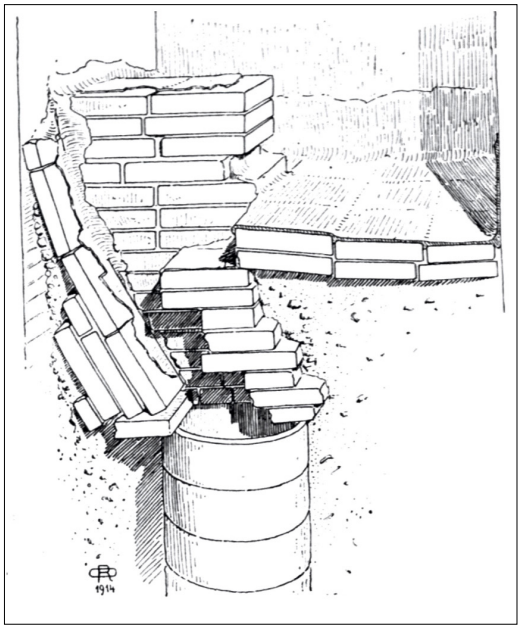

Figure 4 Installation in Room 13, House II (Miglus 1999, T. 108)

15 Reuther 1926a, 86, 95, 114.

16 Reuter 1926b, 13, 18.

17 Reuther 1926a, 95.

18 As there is no photograph or drawing of this installation, its appearance is unknown (cf. Reuther 1926a).

The connection of alleged toilets with bathrooms is also doubtful. Only Room 13 of House II is connected to a room defined by Reuther as a bathroom. In House IX, Reuther suggested that Room 8, directly adjacent to room 9, was a bathroom based on the interpretation of Room 9 as a toilet, even though no drainage facilities were recorded in Room 8. However, ultimately he did not specify this function for the room, but left the question open in his excavation report.

Notwithstanding the uncertainty of Reuther's interpretations, a clearer understanding of the drainage system and the packing of the construction pit can provide information about the function of the soakaway, and therefore of the room. The archaeological experiment described below may be of assistance in this respect.

Table 3 Overview of the rooms interpreted as toilets by Reuther (Bielefeld, in preparation)

House/room	Floor	Base protection	Fixed installation	Connection to main room	Connection to the courtyard	Part of a room chain
I13/	brick	no	no	no	yes directly	no
II13/	double brick + bitumen	bitumen	installation on soakaway	yes	yes	yes (end)
VI11/	not specified	no	no	yes	yes directly	yes (transit room)
IX9/	not specified	no	yes (appearance unknown)	no	yes directly	yes (end)

5 The Function of a Soakaway

A soakaway is a vertical drainage system that is easy to construct. It usually consists of a so-called inlet drum, several terracotta cylinders stacked on top of each other, and a drain integrated into the paving. The side walls of the terracotta cylinders can be perforated. There are also drainage shafts made from storage vessels instead of specially made cylinders. Here, the bottoms of the vessels were knocked out before they were stacked one inside the other in order to fit them into the construction pit. The construction pit was then filled with ceramic sherds or soil outside the shaft.

Most of the 26 rooms in Babylon-Merkes were drained exclusively via such a system. In Room 1 of House IV there were two additional terracotta pipes that drained into the soakaway in the entrance area, while Room 15 of House II was drained by a brick channel that broke through the south wall of the courtyard and led into a soakaway in Room 13 of the same house.[19] No other drainage systems consisting of several elements are known.

In his excavation report, Reuther did not give a general description of the dimensions and construction of the Neo-Babylonian soakaways.[20] Over the course of his detailed house descriptions, he documented three soakaways that consist of storage vessels. For four others, he specified a construction made of terracotta cylinders. He does not describe the remaining 17 soakaways in more detail. The excavation report contains no information on the type of backfill of the construction pit. However, an experiment carried out by the author, which is discussed below, shows that this has a major impact on the seepage rate and filling capacity – and therefore the function – of the shaft.

19 Reuther 1926a, 96, 106.

20 The soakaways of the Middle Babylonian-Assyrian layer present a different picture. Here Reuther 1926a, 62 noted that they consisted of "terracotta rings placed on top of each other". According to Reuther, the lowest cylinders had a height of 15-20 cm, the highest measured 48 cm in height. The diameter was only recorded for the low drums: it was 45 to 65 cm.

6 An Experiment

To answer the question of how a change in the backfill of the construction pit (diam.: 56 cm) affects the functionality of the soakaway, a 44 cm high soakaway was constructed in a flower bed in Sivas, Turkey **[fig. 5]**.

Figure 5 Reconstructed soakaway with brick (left) and soil backfill (right)

The seepage pipe consisted of three water bottles glued together, into which 36 seepage holes were melted with the help of a heated spoon. The diameter was 16 cm, the seepage holes were between 1 and 1.5 cm in size. The volume of the shaft was therefore between 8 and 9 litres.

Around the shaft the construction pit was backfilled with 38 kg of brick rubble for two trials and then with 64 kg of soil for two further trials.

In the first and third trials, 10 litres of water were poured into the shaft, in the second and fourth trials 30 litres, and the time required for the water to seep away was recorded. Between the runs, the soil was given time to completely absorb and drain off the water to counteract any falsification of the results. The results of the second and fourth runs, in each of which 30 litres were poured into the well, are discussed below.

The second trial yielded the following result: the pit was heavily soaked up to a height of approx. 24 cm. While the bricks in the upper area showed no signs of water penetration, the bricks had become increasingly saturated with water from a depth of 20 cm below the top of the shaft. At no time was there any danger of the soakaway overflowing.

The fourth trial differed from this result: the soil in the construction pit was heavily soaked up to a height of 34 cm. The soil directly around the shaft was heavily saturated with water up to the top edge. The 30 litres of water had filled the shaft to the brim - the water level then dropped rapidly.

The experiment therefore showed that the water seeps away more quickly in a soakaway that is surrounded by brick rubble. A similar result is to be expected when pottery sherds were used to fill the space around the shaft. Particularly at the beginning, more liquid is extracted from the shaft. When filled with 30 litres of water, this meant that the drainage system was only about 3/4 full, whereas it threatened to overflow in the case of the soil backfill. A shaft with brick backfill can therefore absorb uncontrolled quantities of water better than the same shaft with soil backfill. An examination of the construction pit also indicated that the soakaway works not as a purely vertical drainage system but

works due to a combination of vertical and horizontal drainage, the latter of which is achieved via the perforation in the terracotta rings. This makes the soakaway very effective, especially in small spaces, by using pressure and gravity - so it is no wonder that it was particularly popular in residential buildings in southern Mesopotamia.

As the study of the material has shown so far, the question of the potential uses of rooms with drainage facilities is hard to answer with the use of archaeological methods alone. Variations in floor configurations and skirtings and differences in the backfill of the construction pit, as shown experimentally, can affect the potential function of the room. An additional look at textual sources may therefore help to come to further conclusions about the activities carried out in the residential buildings in question that may have necessitated the use of a drainage system. They may also help to correct our modern western understanding of room functions and to understand how people in the Neo-Babylonian period organised their dwellings.

7 Archives N9 and N10 of the Residential Buildings in Babylon-Merkes

Archives found directly in residential buildings can give clues to the activities of the owners of these buildings and whether those activities necessitated the existence of rooms with drainage facilities. According to Pedersén, a total of five such archives were found in Merkes, of which archives N9 and N10 were found in the houses examined above.[21]

N9 comprises the archives of Houses XVI (25 clay tablets), XVIII (44 clay tablets) and XVII (44 clay tablets).[22] None of the houses has a room with drainage facilities. The archives provide no information about the occupations of the owners of these houses or any specialisations of the households. The situation is different in House VI, from which archive N10 (approx. 36 clay tablets) originates.[23] Here, Rooms 7 (bathroom) and 11 (toilet) had drains. The archive dates from Šamaš-šum-ukin (year 5) to Nebuchadnezzar II (663-580 BC) and names the governor Silim-Bel and his son Marduk-šuma-ukin (occupation unknown) as the main figures. Both men lived during the reigns of Nebuchadnezzar and his predecessor. The courtyard of the house and a small room to the east of the main room are named as the location of the find by Pedersén. The archive consists of 16 contracts, a process document and eight texts from a library. According to Pedersén, there is no information about the contents of the remaining clay tablets. Text 9 of the archive is interesting, as it is the only text in archives N9 and N10 that documents the purchase of a brewer's estate by Marduk-šuma-ukin. According to this, House VI can be associated with the brewery, at least temporarily.

8 Toilets & Co – The *bīt musâti*

To further the potential arguments for and against the interpretation of rooms with drains as bathrooms or toilets, let us now look at the words the Neo-Babylonians used themselves in connection with drainage systems, room functions and questions of personal hygiene.

George argues in his 2015 article that the word *bīt musâti* should be translated as 'house of rinse-water', as it is a place where hands get dirty. He believes that this indicates a toilet rather than a bathroom. The mention of *bīt musâti* in connection with the demon Šulak in post-Old Babylonian texts, who is in turn associated with dirty hands, further supports this interpretation in his opinion.[24]

The fact that this does not necessarily have to be a house in the conventional sense but can refer to a room or to a suite of rooms in a house is shown by Baker, among others, in her article also published in 2015. She points out that room designations that indicate the function of the room are rare in Neo-Babylonian texts, citing the rarity of the name of the bedroom (*bīt erši*) as an example. According to Baker, the frequently used words describing parts of a house are *tarbaṣu* referring to the courtyard and *bīt iltāni*, *bīt šūti*, *bīt amurri* and *bīt šadî* referring to suites of rooms around the courtyard. These are not functional designations as we use them today when describing buildings, but rather the cardi-

21 These are the archives N8 in the Ištar temple, N9 in House XVI-XVIII and N10 in House VI, as well as N11 and N12 in the remains of the houses Merkes 26h1 and 26g2 (Pedersén 2005, 187-226).

22 Pedersén 2005, 192-4.

23 Pedersén 2005, 199-202 (for other main characters, who are only mentioned occasionally, see also there).

24 George 2015, 86-90.

nal points from which, according to Baker, the wind flows into the rooms. As a result, the rooms were located directly opposite the cardinal point after which they were named.[25]

Although the word *bīt musâti* alone does not indicate whether it refers to an entire building, a part of a building or an individual room, it fits in remarkably well with the terms Baker uses for parts of buildings. In this case, it would belong to the category of rare functional terms used to describe parts of a building.

In addition, a building consisting of several toilets – or consisting of a single toilet – exclusively, as would be implied by assuming that the *bīt musati* was a separate building, has not yet been documented in the archaeological record.

Both Sallaberger and George also mention various words for chamber pots, such as *karpat šīnāti* and *kubarinnu*.[26] This gives an indication that a version of personal hygiene was practiced that has fallen out of favour in recent times. As a result, it is misleading to follow existing standards, which, for example, allow for a large amount of water in relation to personal hygiene. The question also arises as to whether the implementation of the hygienic procedures was room-bound or flexible. The chamber pots suggest that it was a flexible form of implementation that did not require a special room. In addition, there is a reference in an omen of *Šumma ālu*, which warns that pigs should not have access to these chamber pots. George assumes that this omen is due to the fact that the filled chamber pots were left in the courtyard, attracting pigs.[27] If we assume that there were toilet rooms, this would mean that the inhabitants of the house would have carried the filled chamber pot out of the room into the courtyard, left it there and later carried it back into the room where it was emptied. Such a procedure is not very credible. It is therefore highly unlikely that the place where the pots were used and the place where they were emptied was identical. From this it can be concluded that it is unlikely that the chamber pot was emptied in the room where it was filled.

This mobility of the place where the pots were placed, indicated by the omen, contradicts the translation of the word *bīt musâti* as a permanently assigned toilet room in which a demon dwells. Therefore, it can be assumed that this is the room where the chamber pots were emptied after use.[28]

9 Drainage Systems in Texts (*asurrû*)

According to George, in older texts one word that has to do with drainage, among other things, and that can be associated with the *bīt musâti* is the word *asurrû*. It is etymologically derived from the Sumerian a-s u r(-r a), which means 'water that is discharged' or 'water that trickles out' and is associated with *musâti* in a ritual context.[29]

Other texts state that an *asurrû* provides living and nesting space for snakes, mongooses and vermin and could attract pigs. This indicates that the word *asurrû* can be understood to mean not only the soakaway, but also pipes and channels, as the soakaway is unsuitable as a habitat for animals due to its depth and vertical construction. According to the texts, *asurrû* were also not necessarily used frequently: animals do not nest in a place where a gush of liquid is suddenly poured over their heads at regular intervals or washes away their laboriously built nest.

The *materia medica* states that an *asurrû* could absorb soil, earth, dust and feces.[30] It is therefore not a system that only drains wastewater or rainwater.

Accordingly, a translation as a *drainage system* is proposed here for the older texts as quoted by George, which can take on various tasks (both the drainage of rainwater and the absorption of the contents of the chamber pots, dust or soil) and can consist of different components (soakaway, channel, pipe). Even though that meaning had changed by the first millennium BC (i. e. the time the Neobabylonian Houses in Babylon-Merkes date to), it still shows that the concept of various drainage systems had been present in the written record for a while before.

25 Baker 2015, 376.

26 Terms that Sallaberger 1966, 55 translates respectively as 'Uringefäß' and 'das fürs Dicke'. See also George 2015, 84.

27 George 2015, 85.

28 The separation of the pots in terms of "large and small business" mentioned by Sallaberger 1996, 55 could indicate a further use of the individual raw materials, e.g. in agriculture or in (textile) crafts. In this case, a public collection point would be logistically useful.

29 George 2015, 90-102.

30 George 2015, 95.

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10 Conclusion

As explained above, Reuther specified that a bathroom typically had a floor with a bitumen coating that slopes down towards the soakaway. In addition, the walls are protected, and the room is located separately in the rooms of the living quarters. Table 4 shows that none of the rooms he designated as bathrooms fulfil this specification in all its points **[tab. 4]**. If one places his rooms labelled as bathrooms next to each other, the suspicion arises that the assignment of function is based on a Western-influenced image of a residential house, which at the beginning of the last century increasingly had bathrooms and separate toilets in the well-off houses: in this case, Reuther perhaps actively sought such a room function, which would explain the deviations in the room furnishings and construction methods shown in figure 9. However, this would mean that the rooms were identified as bathrooms first, before the general definition was made on the basis of the rooms. It is therefore completely unclear on what criteria Reuther's definition of a bathroom was based and where his certainty that Neo-Babylonian dwellings even had such a room came from.

Table 4 Overview of the individual feature of Reuther´s general definition of a bathroom matching the rooms in this study.

House/Bathroom	1) the floor has a bitumen coating	2) the floor slopes towards the soakaway	3) the room has wall protection	4) the room is located separately in the group of the living quarters
I/10	✗	✗	✗	✓
II/12	✓	✓	✓	✗
III/15	✓	✗	✗	✗
V/9	✓	✗	✓	✗
VI/7	✓	✗	✓	✓
XII/10	✓	✗	✓	✓
XV/no number	✓	✗	✗	✗

There is no doubt that he documented rooms with drains, some of which were furnished very similarly (House II/Room 12, House V/Room 9, House XII/Room 10). However, there is no archaeological evidence in these rooms that would allow us to define them as bathrooms. Rather, these are rooms with drainage systems, some of which have special furnishings whose function cannot been clarified. These rooms could be associated with personal hygiene, just as they could be linked to a craft practiced in the household. Both interpretations, however, must be regarded as speculative at the present time.

As in the case of the bathrooms, Reuther's descriptions of the toilets do not follow his own criteria. Although all four rooms are drained by soakaways, a look at the general drainage technology of the 26 rooms with drainage facilities investigated here shows that there are soakaways in all of them. Citing this as a criterion for a special room function therefore seems inadvisable.

Reuther is completely silent about the backfills of the shafts, which means that this point of his interpretation cannot be verified.

Another important point for Reuther is the presence of installations in rooms, which are interpreted as 'pedestal toilets'. This kind of installation is only securely attested in Room 13 of House II and Room 9 in House IX, without any further proof of its function. However, as there is no description of the installation in the latter room, it is not possible to compare the two. It is therefore not possible to say whether the installations in the rooms are the same, similar or completely different, nor can we conclude from a single installation with detailed documentation of its construction that toilets were somehow a regular feature in Neo-Babylonian houses.

The only toilet adjacent to a bathroom is Room 13 in House II, so this criterion is also not suitable for determining such a function, as it only appears a single time and seems therefore also to be an exception rather than a rule. In addition, Reuther does not mention why the bathroom and toilet should be adjacent to each other.

The function of the rooms interpreted as toilets in the excavation report can no longer be regarded as proven based on the lack of correspondence with Reuther's own definition and the lack of further archaeological evidence within the rooms with drains. As stated above for the bathrooms, the differ-

ent room conditions of two of the four toilet rooms mean that different uses cannot be ruled out: these two toilets but none of the bathrooms had platforms.

From an archaeological point of view, the interpretation of the bathrooms and toilets in the Neo-Babylonian dwellings of Babylon-Merkes must therefore be strongly doubted. No clear similarities can be identified between the rooms – except for the drainage system. However, the soakaway is generally used in dwellings, so no specific room function can be derived from it.

Instead, text 9 of archive N10 tentatively suggests a connection between House VI with drainage facilities and a brewery. In this case, the drainage could indicate that the household was specialised in a particular craft and not, as previously assumed, only personal hygiene or the drainage of rainwater.

The interpretation of *bīt musati* as a place where only chamber pots were emptied also speaks against a room with a function that is close to today's toilet. If a toilet had been present, it is difficult to understand why one would also need to use chamber pots, but then have a specific place to empty them. The word *asurrû* also does not help with the question of whether there were bathrooms or toilets, as it seems to refer to the drainage of rooms and buildings in general originally but had lost this meaning by the first millennium BC.

Consequently, it is not possible to locate rooms in the Neo-Babylonian dwellings in Merkes that are exclusively associated with personal hygiene. The mention of chamber pots in texts suggests that at least parts of the hygienic behaviours of the time were not dependent on fixed rooms but could be carried out flexibly in the house. Although the distribution of rooms with soakaways[31] in Babylon in houses with an above-average number of rooms indicates a connection between the wealth of the house owners and the use of a drainage system, this does not suggest that a particular form of personal hygiene was widespread in this social class. It is quite conceivable that drainage was used, among other things, because of a specialisation in craftsmanship, which made additional rooms necessary, resulting in larger houses. This would also be supported by the different room fittings of the drained rooms in terms of wall protection and installations, which suggest a different type of use for each room. The craft carried out in the house could also be an important factor in the wealth of the owners.

As the results of the experiment have shown, a precise description of the construction of soakaways can also provide additional information on how large their absorption volume was in the event of sudden, uncontrolled amounts of wastewater. This would provide a further indication of how the rooms they drained were used, since such large amounts of water are unlikely to occur during activities of daily living like emptying a chamber pot, a basin of water or similar.

Taking all these factors into account, it can be concluded that according to the data currently available, no single function can be assigned to drained rooms in Neo-Babylonian dwellings from Babylon-Merkes. Instead, the rooms could have had multiple purposes with the defining feature of the soakaway allowing for the handling of larger quantities of liquids and easy clean-up.

31 Note that these are all drained rooms, not only those interpreted as bathrooms or toilets by Reuther, which can, as stated above, be found predominantly in smaller houses.

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