

## AN ATTEMPT TO SYSTEMATIZE THE GATES IN THE URARTIAN FORTRESSES

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### 1. Introduction

One of the most interesting issues in Urartian archaeology is the development of a defensive network. Thanks to many scholars, especially such as Kleiss, Kroll, Salvini, Zimanski and others, we know today much more about that part of the Ancient Middle East than forty years ago. Much information derives from Kleiss' works on Iranian North-Western Azerbaijan, published regularly in "Archäologische Mitteilungen aus Iran". To date, it is the best archaeological survey that was undertaken in that region. Additionally, Burney's and Lawson's surveys conducted in eastern Turkey provide a picture of the Urartian military architecture (Burney 1957; Burney, Lawson 1960). That source made it possible to identify gate constructions. These kinds of structures have never been discussed as a separate subject matter of a study. Due to the fact that that material has never been researched, in my opinion, the issue is worth giving our attention.

The majority of Urartian fortresses have never been excavated. Nevertheless, plans for many of those forts are available giving us the possibility to study the objects. Many more than a hundred various fortresses are known today. Among them are those fortresses with remains of doorways or gates that are still visible. The total number of the sites with such forts and fortresses amounts to forty-six, which in itself represents a weighty subject open to discussion and not likely to be considered parenthetically. Many of the sites have more than one gate which enlarges the number of gates or doorways subject to analysis to sixty-five. In other parts of the Middle East we are offered no possibility to examine so many defensive sites with preserved defensive gates.

## **2. Geographical localization**

The most impressive Urartian remains are fortresses located in excellent strategic locations in the mountainous area of Eastern Turkey, Armenia and Iran. These constructions are usually located on high mountain peaks or ridges. From the military point of view such localization was incomparably better than a flat plain. In case of a siege, aggressors had to climb up to the foot of the main walls and gates. Furthermore the location of the fortress allowed a clear view on the whole neighboring area and valleys. An enemy could be quickly detected and defenders could have sufficient time to prepare themselves for a combat.

There are two main strategic regions of the Urartian state:

- the southern and southeastern regions of the kingdom regularly raided by the Assyrian army.
- the Araks valley with its neighboring regions being the best agricultural regions of the kingdom. It is of note that the royal residence, Erebuni, was located there. The fertile regions were close to the northeastern border, which required protection against nomadic tribes attacking from the Caucasus region.

The clear strategic purposes aside, there never existed one homogeneous system of military constructions. In other words there was no standard based on which such objects were constructed. The said standard could be set by, say, a king. Even if fortifications were built strictly according to the king's will, it appears that local architects were free to decide on a design of a military construction. It should be noted that there was no need for the King to send his own specialists from the capital. Moreover, it is possible that some of the fortresses were not built by kings of Urartu but by local Urartian aristocratic families.

## **3. Localization of the sites in the landscape**

In the Urartian fortresses, gates were usually located near a steep slope. Enemies, when surrounded by fire coming from the fortress, had to first run up the steep mountain and then to crush the gate. Furthermore the steep slope made using battering ram difficult, due to its heavy weight and lack of maneuverability. Soldiers who had to push the ram up the slope could

not run fast enough to the top of the mountain which was conducive to the fact that the ram could not strike as hard as it would normally do in a flat area. The gates located near steep slopes were, among others, those from the following forts: Upper Anzaf Kale (Burney 1957: 38, 40, 44; Burney, Lawson 1960: 178-181), Aragats (Oganesjan 1958: 77pp.; Kleiss 1988: 181-215), Argishtihinili (Martirosjan 1964: 220-236; Martirosjan 1972: 38-55; Arutjunjan 1985: 21-23; Zardarian 1994: 170-173) (Fig. III. 1), Bastam (the south gate) (Kleiss 1977), Çavuştepe (Erzen 1978), Erebuni (Oganesjan 1960; Hodjasch, Truhtanowa, Oganesjan 1979) (Fig. III. 2), Gerdesorah (Kleiss 1976a: 24-26; Kleiss, Kroll 1979: 206-209), Ilan Qara I (Kleiss 1979: 206-209), Tepe Dosoq (Kleiss, Kroll 1979: 195-198), Kale Gavur near Khoy (Kleiss 1972: 146-148; Kleiss, Kroll 1976: 107-124), Kale Hodar (Kleiss 1974: 94-98) (Fig. IV. 1), Qal'eh Ismail Agha (Kleiss 1976a: 26-30), Kale Kuh-e Sambil (Kleiss 1974: 100-102), Kale Oglu (Kleiss 1968: 15, 20-21), Kale Saradnj (Kleiss 1971: 58-60), Kale Siah (the main gate) (Kleiss 1973a: 83-86), Kale Waziri (Kleiss 1968: 29, 33), Kefkalesi (Burney 1957: 38-39), Kiz Kalesi near Evoghlu (Kleiss 1973a: 86-89), Körzüt Kale (Burney 1957: 41, 47-48) (Fig. II. 1), Livar (Kleiss 1971: 56-58), Pir Çavuş (Kleiss 1968: 30, 34-35) (Fig. IV. 5) and other.

It is quite obvious that localization of a military structure on a gentle slope was a less fortunate choice from the point of view of the country's defense possibilities. There were also gates built on such slopes as: in Lower Anzaf Kale (Burney 1957: 40, 45; Burney, Lawson 1960: 181-182), Kale Siah (the gate in the citadel), Kancikli (Burney, Lawson 1960: 189-192), Kayalidare (Burney 1966) (Fig. I. 2), Qal'eh Haidari (Kleiss 1976a, 20-24) (Fig. I. 4). All the gates belong to the earlier phase of the military architecture. Gates in Isowinar (the gate in the citadel) (Martirosjan 1967; Kleiss 1988), Kale Gavur near Araks (Kleiss, Kroll 1976: 109-111; Kroll 1976: 74-75, 168), Kuh-e Sambil (the internal gate), Karmir Blur (the northern gate) (Piotrowski 1950; 1952; 1955; Oganesjan 1955), Tepe Lumbad (the upper gate) (Kleiss 1973b: 30-31) and both simple gates from Werachram (Kleiss 1971: 60-62; 1974: 82-93; 1976b: 33) belong to the later phase of Urartian military architecture.

#### **4. Possibility of approach**

The next issue that I find of compelling interest is the question of how those gates were located in the military system. Could they be reached

directly, straight from the terrain surrounding the fortresses or was it necessary to climb up along the defensive walls? If intruders had to approach the gate by running up along the wall from its right side, their shields, carried in left hands, could not protect them. This kind of solution was the most advantageous from the military point of view. This can be found in: Allahverdikand (the first internal gate on the citadel) (Oganesjan 1958; Kleiss 1994: 131-137), Arhishtihinili (the southern gate) (Martirosjan 1964; 1972; Arutjunjan 1985: 21-23; Zardarjan, Akopian 1994: 170-173), Bagin (Lehmann-Haupt 1910: 467-469; 1926: 838-839; Burney 1957; 41, 52-53), Bastam (the south gate) (Kleiss 1977), Erebuni, Ilan Qara I (the main gate) (Kleiss, Kroll 1979: 206-209), Isowinar (the south gate), Tepe Dosoq, Kale Hodar (the northern gate), Qal'eh Ismail Agha, Kale Oglu (the southern gate), Kale Sarandj (the northern gate), Livar, Pir Çavuş (the central gate, and partly the northern gate), Qal'eh Bordjy (Kleiss 1975: 66-67), Tepe Lumbad (all the gates) (Kleiss 1973b: 30-31), and Var (Kleiss, Kroll 1979: 202-203). It is imperative that we take a closer look at two sites that are unique. The first one being, Kale Siah, where the pathway from the main gate to the gate in the citadel runs under the slope of approximately 30° to the citadel walls. After breaking through the main gate, aggressors had to attack along that wall protected by their shields, but near the citadel gate they might have been subject to crossfire from the first line of the fortified walls. On the second site i.e. Kale Kuh-e Sambil enemies were exposed to fire from both sides of the main gate. The aggressors were first exposed to vertical fire from the gate, and then to a second line of defense from the right side. The source of the fire was located in the wall to the west of the gate.

By contrast the paths to the gates are these which could be reached through perpendicular pathway. That kind of route was not as easy to defend in comparison with the route described above. Straight routes facilitated the use of a battering ram to crush gates, even when faced with steep slopes.

## 5. Gate types

During the Urartian period gates with internal chambers were constructed, but no complex system of gates and their protection was developed. It is particularly visible while comparing the neighboring states of Neo-Hittite kingdoms, Assyria, and especially in the Palestine region, where gates with

chambers were a common feature. Very often there were two or three pairs of chambers built in one gate, which made such construction almost an independent fortress. I will discuss the reasons for building such sophisticated constructions later in this text.

We are familiar with thirteen examples in total of gates with internal chambers from Urartu. Seven of them were easily recognized. As a rule they were two-chamber gates, mostly with a straight passage. Only in four gates we can find passages with bent axis. This solution makes it much easier to defend a fort than in the case of a straight passage as enemies lost the impact of an attack when they had to penetrate the other closed door located inside the gates. Moreover, using a battering ram was very difficult and its usefulness was very limited. It is difficult to break through such a gate into the internal chamber. It was also easy to set the battering ram on fire by throwing incendiary torches, or to kill its bearers.

We are now faced with yet another issue, namely: what was the reason that no gate protection system, so popular in the beginning of the first millennium BC, was developed in Urartu? The answer probably lies in the environment and the landscape of the Armenian upland. Urartians had good reasons to believe that their land was a natural invincible fortress. Consequently, a little more complex gates with internal chambers must have been built in localizations more exposed to attack. That should be given due consideration when referring to the localization factors discussed above: geographical localization and localization of the site in the landscape.

As far as the geographical localization is concerned, we can observe that eleven of the thirteen known or presumed gates were located in the strategically critical territories, but only four of them in the territory subjected to Assyrian attacks. All the said four gates were those ones that had internal chambers the existence of which can only be presumed according to the available material. The sites where those gates were presumably built are: Agrab Tepe, Kale Hodar, Pir Çavuş and Tepe Lumbad. If the hypothesis is correct, these four gate constructions, which belong to the late phase of development of the military architecture, indicate that Urartians prepared some of the sites to withstand heavy attacks. Especially two of the four known bent axis gates are located there, i.e.: Kale Hodar and Tepe Lumbad, but the main line of the military system of Urartu Kingdom was in the other part of the Urartian territory.

The seven chamber gate constructions with their internal chambers the existence of which cannot be questioned were all erected near the northern

and eastern border of the Urartian kingdom in response to the danger from the northeast. The chamber gates can be found at Argishtihinili (the main gate), Erebuni, Allahverdikand (the gates: main and internal 2), Bastam (the northern gate), Karmir Blur (the main gate) and Werachram (the gate in the citadel) (Fig. IV.2). The above mentioned gates at Allahverdikand and Argishtihinili were the other two known bent axis gates.

The next question regarding the chamber gates is whether those constructions were usually located on gentle slopes. When we take a look at the attached diagram, it is clear that the shape of the hills and their elevation over surrounding terrain had no influence on the localization of the various kinds of gates. Only four chamber gates out of thirteen — Agrab Tepe, Bastam (the northern gate), Karmir Blur (the main gate) and Werachram (the gate in the citadel) were built on the gentle slopes or in flat areas, and three of them were located on the critical areas. Usually the single gates, with no chambers, were located in the upper parts of abrupt slopes.

## 6. Additional defence elements

Owing to the fact that usually in the military structures only simple gates with no internal chambers were built, it was necessary to apply some additional protective element to increase security, such as buttresses, corner buttresses and towers located near the gates. Localization of those elements eliminated “blind space” near the entrances thus making a direct attack on it a risky undertaking.

That is why especially gate constructions located on exposed sites (on gentle slopes, with perpendicular approach) had to have a foreland secured with additional defensive elements, such as buttresses or towers.

Some examples of such gentle slope fortresses are as follows: the northern gate to Bastam (side towers and buttresses, moreover, this gate has a double internal straight-line chamber), Isowinar (only two flanking solid towers), Kale Gavur near Araks (only buttresses and, what is untypical in Urartian military architecture, a construction that seems to be a quoin. That probably had a slightly different function than the function of typical quoins. Here probably combatants/soldiers were able to fight from the upper part of it. Therefore it is fair to say that in Urartian architecture it can be interpreted as an external element of the “gate defense system”. Other similar constructions were observed in: Bastam (the southern gate),

Qal'eh Isma'il Agha, Kuh-e Sambil (the main gate), Kayalidare, Körzüt Kale and Tepe Lumbad. We can also assume that those constructions were in use in Upper Anzaf Kale, Aragats, Ilan Qara I (the main gate), Sequindel (Kleiss 1968: 43-44) and both gates in Karmir Blur. Other gates located on gentle slopes and protected by towers or buttresses were in: Kuh-e Sambil (the internal gate), Kale Siah (the gate in the citadel), Kancikli, both gates from Karmir Blur, Kayalidare, Tepe Lumbad and Werachram (the southern gate).

As far as the perpendicular approach is concerned, only in small forts e.g. Lower Anzaf Kale or Kale Waziri was it unnecessary to build such sophisticated constructions. Lower Anzaf Kale is located near a bigger fortress Upper Anzaf Kale, and was the only supporting fort in that terrain. Kale Waziri is located on a steep hill and as a site it was also too small to have sophisticated defence constructions on it. Interestingly enough even in small forts such as Agrab Tepe, buttresses were built (Forbes 1983: 37-38). That fort was probably the smallest one that existed in Urartu. The only explanation for the fort being equipped with the buttresses, especially near the doorway, is that this construction belongs to the earlier phase of the Urartian military architecture, when this solution seems to be common. During that period fortresses were usually built on a substructure of well-worked stones. Furthermore the main curtain wall included regularly erected buttresses. The fortresses where buttresses were used to protect the gates were: Argishtihinili (the main and northern gate), Bastam (the northern gate) (Fig. IV. 4), Danalu (Kleiss 1975: 60-62) (Fig. I. 3), Gerdesorah, Hasanlu (Dyson 1960; 1977), Karmir Blur (both gates) (Fig. IV. 3), Kayalidare, Kiz Kalesi near Evoghlu, Qal'ej Djiq (Kleiss, Kroll 1979: 198-202), Werachram (the southern gate) (Kleiss 1971: 60-62; 1974: 82-93; 1976b: 33). In addition, to improve the security between buttresses and gates, some of those fortresses were equipped with large towers or corner buttresses which were built near entrances. The said structures can be found in: Argishtihinili (the northern gate), Bastam (the northern gate), Danalu, Gerdesorah, Hasanlu, Isowinar (the citadel gate) (Fig. II. 2), Kale Oglu, Kancikli, Karmir Blur (both gates), Kiz Kalesi near Evoghlu, Qal'eh Djiq.

Some of the gates from that parallel approach category have also additional defence elements such as buttresses and towers located near the entrances. This solution made the defence or resistance much more effective than simple coverage by fire from the main wall. Those elements are present in the gates of such fortresses as Argishtihinili (the southern gate),



Bastam (the southern gate), Erebuni, Ilan Qara I (the internal gate), Isowinar (the southern gate), Tepe Dosoq, Kale Gavur near Araks, Kuhe-e Sambil (both gates) (Fig. II. 3), Kale Oglu (the southern gate), Kale Sarandj, Kale Siah (the gate in citadel) (Fig. I. 1), Körzüt Kale (Fig. II. 1), Livar, Qal'eh Haidari, Tepe Lumbad (the middle and upper gates) and Yedir (Kleiss 1976a: 32-33).

The gate to Erebuni needs a few words of a commentary. Here, in front of the gate, a chamber was found, that can be interpreted as a guardroom. If that interpretation is correct it would mean that there was only one example of that solution. The question is why that guardroom was erected. Probably that construction played an important role in court ceremonies, as Erebuni was a royal residence. Nevertheless, it could also have played the role as the first point of resistance during an attack.

Gates with no internal chambers were in almost all cases protected by towers and buttresses. Moreover, some of the gates with internal chambers were also equipped with such protective constructions. In three gates, belonging to the earlier period, we can find two cases where constructions were well equipped and, in the main gate to Argishtihinili and Erebuni gates have buttresses or towers. The Erebuni solution was presented above. On the third site Kiz Kalesi near Evoghlu the gate was not so well constructed. Only towers were used as defence elements. It should be noted that the path to the gate ran straight and it was possible to use a battering ram.

In the later phase, in seven cases, the defense security of the gates was very good. The remaining three gates were not so well prepared for defence. Among the better-prepared were the gates in: Agrab Tepe, Allahverdikand (the main gate and the internal 2 gate), Bastam (the northern gate), Karmir Blur (the main gate), Qal'eh Djiq and the lower gate to Tepe Lumbad. The gates from Kale Hodar, Pir Çavuş (the middle gate) and Werachram (the gate in the citadel) were not so well equipped.

## **7. Localization of the gates in the defence walls**

In the Urartian defensive architecture it is possible to distinguish two main types of gate construction. The first category comprised those gates, which were located towards the face of the main defensive walls (type A). The type A gates were noticed on sites belonging to the earlier phase: Upper Anzaf Kale, Argishtihinili (the southern and northern gates),



Bagin, Kancikli, Kefkalesi, Qal'eh Haidari, Var and Zivistan (Burney 1957: 40, 43, 45; Burney, Lawson 1960: 177-178). In the later phase, type A can be found at Bastam (the southern gate), Ilan Qara I (the main and the internal gates), Kale Gavur near Araks, Kale Hodar (the eastern gate), Kale Kuh-e Sambil (the main gate), Körzü Kale, Qal'eh Bordiy, Sequindel and Tepe Lumbad (the lower gate).

Also to that category belong the rare gates with internal chamber constructions. In the older phase those gates were built at: Argishtihinili (the main gate) and Kiz Kalesi near Evoghlu, in the later phase we have only one example of that kind of gate in Bastam (the northern gate). It should also be mentioned that all gates from category A were built with additional defence elements such as buttresses or towers. Of course it could be possible to include these elements as a sub-category but it would, in my opinion, only bring unnecessary complications to the classification system.

To the second category (type B) belong gates erected in the main facade of the defence walls. The list of those sites can be found in the attached table with a description of the defence elements of those gates without internal chambers, to be precise, simple gates. This category also comprises simple gates with internal chambers. This architectural solution was found in older phase in Erebuni. During the later period (later phase) simple gates with chambers were erected in Agrab Tepe, Allahverdikand (the main and internal 2 gates), Kale Hodar (the northern gate), Karmir Blur (the main gate), Pir Çavuş (the middle gate), Qal'eh Djiq and Werachram (the gate to the citadel). In the later phase, in three cases, including, the internal 2 gate in Allahverdikand, Kale Hodar and Pir Çavuş, the gates were not secured by towers or buttresses. In Pir Çavuş and Kale Hodar the absence of these elements can be explained by the extremely difficult location of the gates. There was no possibility of using heavy weaponry that could threaten the gates. In Allahverdikand neither buttresses nor towers were built. Such elements in the narrow passage would only block the pathway and not improve the military value of the gate.

In twelve examples belonging to category A there were gate constructions with no additional fortifications. In the earlier phase such gates were erected in Upper Anzaf Kale, Lower Anzaf Kale, Aramus, Bagin, Van and Zivistan. Gates of the later phase with no towers nor buttresses were observed in Ilan Qara I (the main gate), Kale Hodar (the eastern gate), Qal'eh Isma'il Agha, Kale Wazari, Sangar and Tepe Lumbad (the lower gate). Given the above we are not at liberty to claim that the gates without

additional military elements were built more often in the earlier phase. To our knowledge an equal number of those constructions in both phases can be found.

Of course gates with side towers or with buttresses were more common than the simple constructions mentioned above. This type of construction was justified inasmuch as, the constructors when wishing to erect a very good military structure had to take into account all defence elements that could restrain enemy assaults. That is why most of the simple gates were equipped with towers and buttresses. The list of those gates is attached in the table.

## **8. Comparative examples**

Some analogies with the Urartian constructions can be drawn in other parts of the Middle East. When we look at gate constructions from that region, from the beginning of the Iron Age, first we should realize that apart from that region of Urartu we are faced with no possibility of analyzing other similar structures in the whole of Middle East. The city gates of Neo Hittite states are best known in Northern Syria. The best instances of gates can be observed from Carchemish (the gate of the lower town, the southern gate of the upper town) (Herzog 1986: 138-142), Tell Halaf (the southern gate of the citadel, the Scorpion Gate) (Herzog 1986: 143-145), Malatya (the Lion Gate) (Herzog 1986: 145-148) and Til Barsib (Herzog 1986: 147-148). On all of the above sites gate constructions had two internal chambers to which the passage through the gates was straight. Another type of gate with two internal chambers was observed in Zincirli (the west gate of the city, the gate to the citadel) (Herzog 1986: 134-138), Carchemish (the eastern gate) (Herzog 1986: 138-142) and Tell Ta'yinat (Herzog 1986: 149-150). The said gate had two massive side towers, which served as additional military elements. Such gates came from Carchemish (the eastern gate), Tell Halaf (the southern gate of the citadel) and Zincirli (the citadel gate). In Assyrian territory similar gates were found in Ashur (the Tabira-gate) (Andrae 1977: 204-207). This construction had four internal chambers with massive towers placed beside the gate. Very similar to the gate described above was the Gurguri gate located to the south from the Tabira gate (Andrae 1913: 20-30). Also the gateways in the double wall were located in the southwestern part of the city. There were two gates with two internal chambers flanked by two towers. The citadel of Dur Sharrukin

also had two gates with internal chambers built inside the towers (Kessler 1991: 120). Entrances to Nineveh followed the same design. Given the Assyrian tower constructions we can assume that the Assyrians were not afraid of fierce attacks. By contrast the most sophisticated gates from this period were erected in Palestine. Here one should mention Hazor (stratum X – six chamber gate with side towers) (Herzog 1986: 91-92), Megiddo (stratum IVB – six chamber construction with a bent axis “shaft” located in front of the gate) (Herzog 1986: 96-99), Lachish (stratum IV-III – six chamber gate with massive towers) (Herzog 1986: 111-112), Gezer (stratum 6 – six chamber construction) and other (Herzog 1986: 114-115).

Similar shafts as those mentioned in Megiddo were found in Karatepe (Herzog 1986: 146-147). There were two-chamber constructions with massive side towers. Both the gates (northern and southern) are the closest analogies to the Urartian gates with quoins. In the Urartian architecture these elements should be interpreted as quoins rather than shafts. The Urartian gates, which have the elements mentioned above, are situated in Lepe Lumbad (the lower gate), Körzüt Kale, Kayalidare, Kuh-e Sambil (the main gate), Qal’eh Isma’il Agha, Kale Gavur near Araks, Bastam (the southern gate). We can also assume that other quoins were in: Upper Anzaf Kale, Aragats, Ilan Qara I (the main gate), Karmir Blur (the northern gate) and Sequindel.

Interestingly enough the shafts attached to the internal face of the gate were used only in Urartian architecture. These elements were used within the fortification of Troy but during the Early Bronze Age (Herzog 1986: 23-30). This indicates that any similarity in that case is accidental and we can say with all certainty that this kind of shaft was a unique Urartian idea.

## 9. Conclusion

The presentation of gates being concluded it should be noted that Urartians were aware of the fact that their kingdom was a natural fortress. Moreover, they knew very well which of the fortresses needed stronger and better gate construction. When we look at the gates usually located on hills or on mountain peaks, which were difficult to conquer, it is quite obvious that Urartians did not overestimate those constructions. They probably believed that their fortresses were able to defend themselves because of its localization whereas the additional defence elements played a secondary and yet an important role. It is also of compelling interest that as opposed to the common opinion

that Urartians were particularly afraid of Assyrian attacks, they introduced better gate constructions in the Araks valley, which is in the south not in the north. That is justifiable inasmuch as the south territory happened to be the most fertile region of the Urartian kingdom, so protection of this area was of highest importance. This may be the reason for why Urartians built defensive gates, whose role was equally important to the role of the fortresses on account of their strategic and geographical localization.

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**List of the characteristic features**

	the older phase	the younger phase	quin	close-fitting buttresses	corner buttresses near the gate	big buttresses or towers near the gate	straight wall	sloping gate with a quin	sloping gate	gate with internal chamber	straight axis	bent axis	steep slope approach	gentle approach	straight approach	perpendicular approach	internal courtyard behind the gate	perpendicular wall behind the gate (shaft)	"guardhouse" before the gate	gulf before the gate	straight gate	
Agrab Tepe	X	X		X	X	X	X			X?		X	X	X	X	X?		X				
Allahverdikand (the main gate)		X			X	X	X			X		X??				X??		X				
Allahverdikand (the internal 1 gate)		X			X	X	X			X		X				X?		X		X		
Allahverdikand (the internal 2 gate)		X					X			X			X				X					
Anzaf Kale (Lower)	X						X						X					X?				
Anzaf Kale (Upper)	X		X?				X	X				X						X				X
Aragats		X	X?	X			X					X						X				X
Aramus	X						X					X						X				X?
Argistihinili (the main gate)	X			X				X	X	X		X					X					
Argistihinili (the south gate)	X			X			X	X	X			X					X					
Argistihinili (the northern gate)	X			X	X			X?				X										X
Arslan Kale (the southern gate)	X?	X			X	X	X					X""			X""					X		
Arslan Kale (the eastern gate)	X?	X				X	X					X""			X""							
Bagin	X						X		X				X?		X							X
Bastam (the southern gate)		X	X	X	X	X		X?	X			X			X		X	X				
Bastam (the northern gate)		X		X		X			X	X	X		X		X		X	X?				
Cavustepe		X		X?											X							X
Danalu	X			X		X						X?			X							
Erebuni	X			X	X					X	X						X	X				
Gerdesorah		X		X	X							X			X			X?				
Hasanlu		X		X	X							X			X			X				
Ilan Qara I (the main gate)		X	X?				X	X										X?				X?

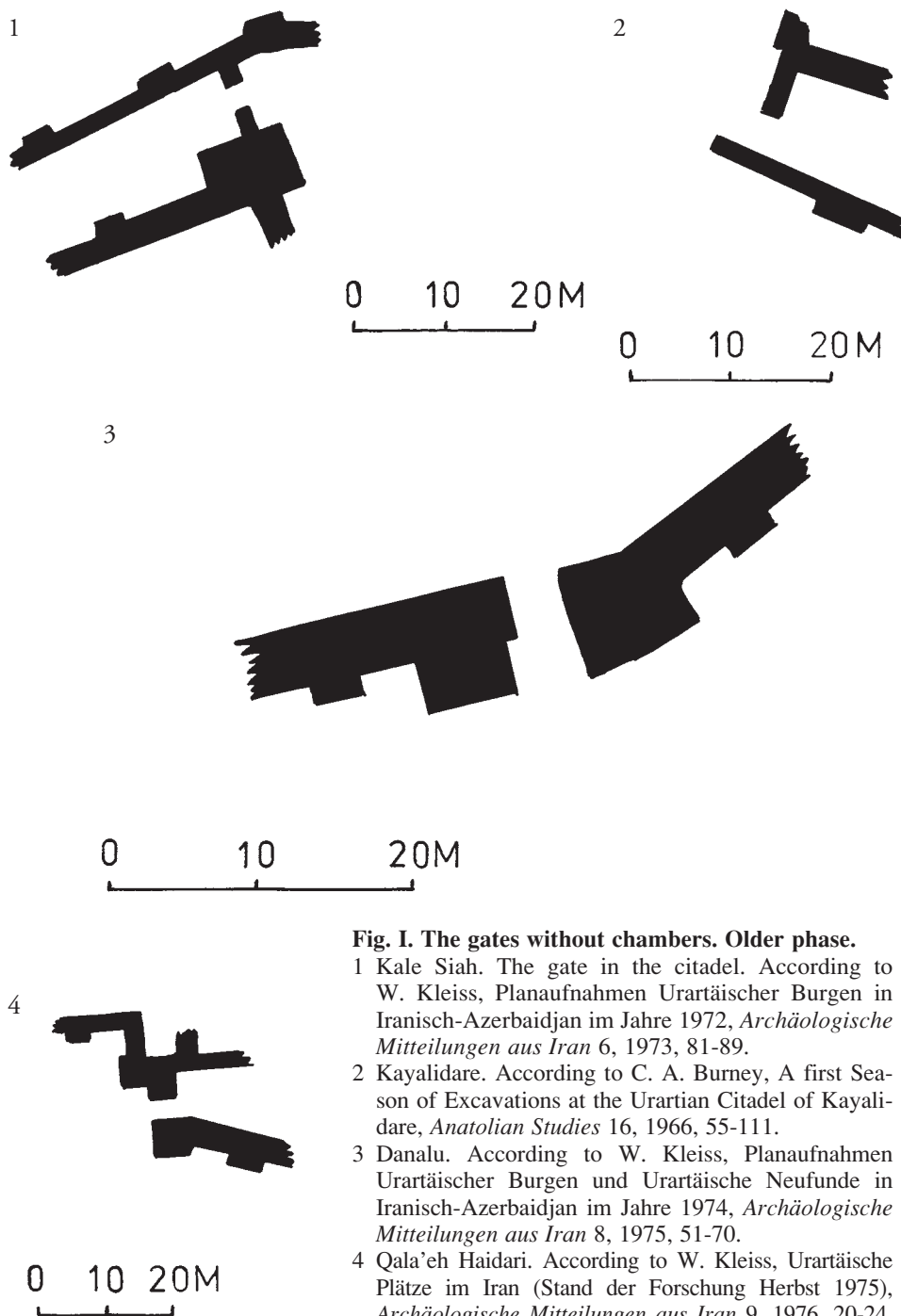
**List of the characteristic features**

	the older phase	the younger phase	quin	close-fitting buttresses	corner buttresses near the gate	big buttresses or towers near the gate	straight wall	sloping gate with a quin	sloping gate	gate with internal chamber	straight axis	bent axis	steep slope approach	gentle approach	straight approach	perpendicular approach	internal courtyard behind the gate	perpendicular wall behind the gate (shaft)	“guardhouse” before the gate	gulf before the gate	straight gate
Ilan Qara I (the internal gate)		X		X				X					X				X?	X		X??	
Isowinar (the southern gate)		X		X		X	X							X?		X		X			
Isowinar (the gate in teh citadel)		X			X	X	X							X	X		X				
Kale Dosog	X			X			X					X	X			X					
Kale Gavur naer Khoy		X		X?			X						X		X						X
Kale Gavur near Araks		X	X	X			X	X					X		X						
Kale Hodar (the northern gate)		X					X		X?		X		X		X		X				
Kale Hodar (the eastern gate)		X					X	X					X		X		X				
Qal'eh Ismail Agha		X	X				X						X		X						X
Kale Kuh-e Sambil (the main gate)		X	X	X	X	X		X?	X				X		X						
Kale Kuh-e Sambil (the internal gate)		X		X										X		X	X	X			
Kale Oglu (the southern gate)	X			X		X							X		X						
Kale Oglu (the northern gate)	X					X	X						X		X						
Kale Sarandj (the southern gate)	X			X	X	X							X		X					X	
Kale Siah (the main gate)	X			X			X						X		X?					X	
Kale Siah (the gate in the citadel)	X			X	X	X							X		X						X
Kale Waziri		X					X						X		X			X			X
Kancikli	X			X			X	X			X			X	X		X				
Karmir Blur (the main gate)		X	X?	X		X				X	X			X	X					X	
Karmir Blur (the northern gate)		X	X?	X			X							X	X						
Kayalidare	X		X		X									X	X		X				X
Kefkalesi	X					X	X		X				X		X			X?			



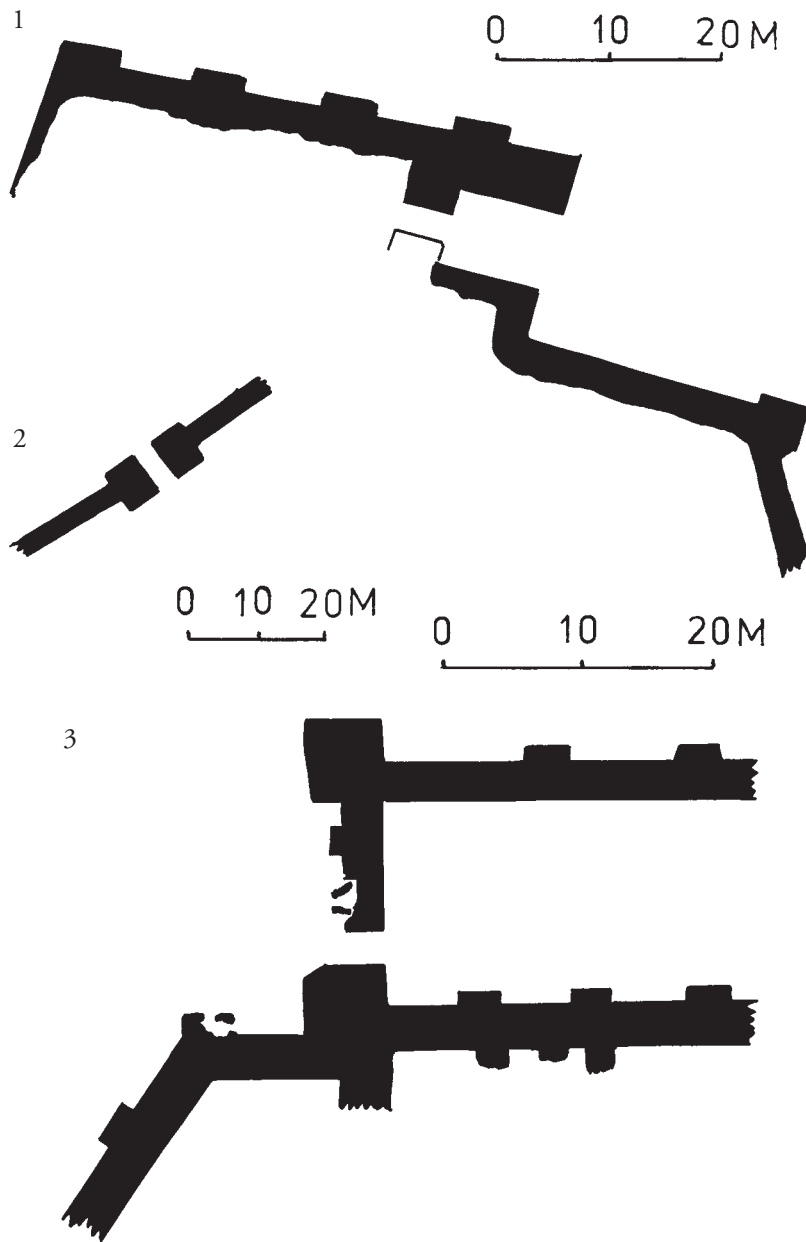
### List of the characteristic features

	the older phase	the younger phase	quin	close-fitting buttresses	corner buttresses near the gate	big buttresses or towers near the gate	straight wall	sloping gate with a quin	sloping gate	gate with internal chamber	straight axis	bent axis	steep slope approach	gentle approach	straight approach	perpendicular approach	internal courtyard behind the gate	perpendicular wall behind the gate (shaft)	"guardhouse" before the gate	gulf before the gate	straight gate	
Kiz Kalesi naer Evoghlu	X			X	X	X	X	X	X	X?	X	X	X		X			X?				
Korzut Kale		X	X	X	X		X	X								X		X				
Livar	X?	X		X	X?	X???	X									X						X
Pir Cavus (the northern gate)	X?	X				X?	X				X	X	X		X	X						
Pis Cavus (the southern gate)	X?	X					X				X	X	X		X	X						X?
Pis Cavus (the middle gate)	X?	X					X		X	X?	X	X	X		X	X		X?				
Qal'eh Bordiy		X					X		X													
Qal'eh Djiq		X		X	X	X				X?	X	X	X		X	X		X?				
Qal'eh Haidari	X			X	X	X	X		X						X	X						
Sangar		X					X															
Sequindel		X	X?	X?		X		X?	X						X							
Tepe Lumbad (the lower gate)		X	X					X		X?					X							
Tepe Lumbad (the upper gate)		X		X		X?					X		X		X							
Tepe Lumbad (the middle gate)		X	X?	X?		X	X								X	X				X?		
Van (internal citadel)	X						X							X	X			X				
Var	X				X	X	X		X						X							
Werachram (the southern gate)		X		X									X		X							X
Werachram (the southwestern gate)?		X		X		X								X	X							X?
Werachram (the gate in the citadel)		X			X					X	X		X		X					X?		
Yedir		X		X	X	X	X								X	X						
Zivistian	X						X		X					X	X							



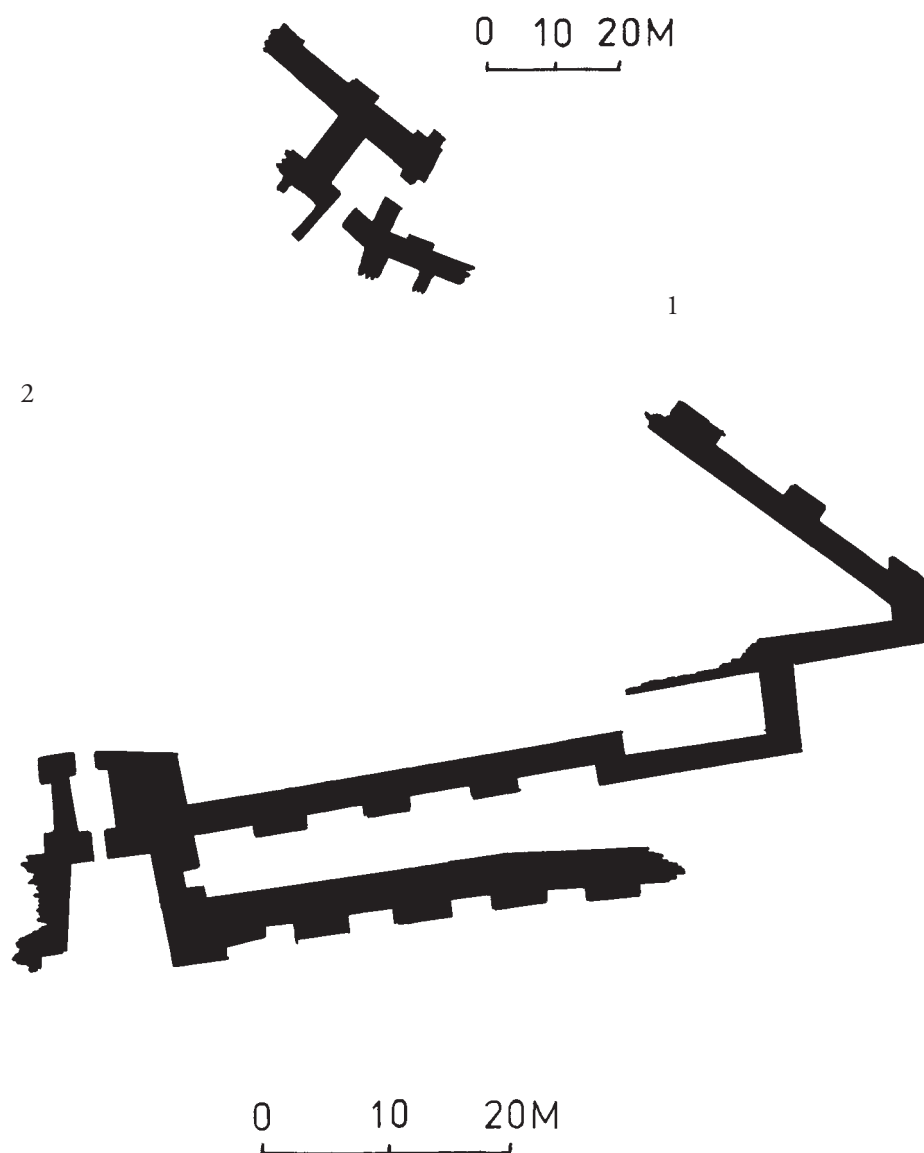
**Fig. I. The gates without chambers. Older phase.**

- 1 Kale Siah. The gate in the citadel. According to W. Kleiss, Planaufnahmen Urartäischer Burgen in Iranisch-Azerbaidjan im Jahre 1972, *Archäologische Mitteilungen aus Iran* 6, 1973, 81-89.
- 2 Kayalidare. According to C. A. Burney, A first Season of Excavations at the Urartian Citadel of Kayalidare, *Anatolian Studies* 16, 1966, 55-111.
- 3 Danalu. According to W. Kleiss, Planaufnahmen Urartäischer Burgen und Urartäische Neufunde in Iranisch-Azerbaidjan im Jahre 1974, *Archäologische Mitteilungen aus Iran* 8, 1975, 51-70.
- 4 Qala'eh Haidari. According to W. Kleiss, Urartäische Plätze im Iran (Stand der Forschung Herbst 1975), *Archäologische Mitteilungen aus Iran* 9, 1976, 20-24.



**Fig. II. The gates without chambers. The later phase.**

- 1 Körzüt Kale. According to W. Kleiss, *Aspekte urartäischer Architektur*, *Iranica Antiqua* 23, 1988, 181-215.
- 2 Isowinar. The gate to the citadel. According to W. Kleiss, *Aspekte urartäischer Architektur*, *Iranica Antiqua* 23, 1988, 187-188, 214-215.
- 3 Kale Kuh-e Sambil. The main gate. According to W. Kleiss, *Planaufnahmen Urartäischer Burgen und Urartäische Neufunde in Iranisch-Azerbaidjan im Jahre 1974*, *Archäologische Mitteilungen aus Iran* 8, 1975, 51-70.

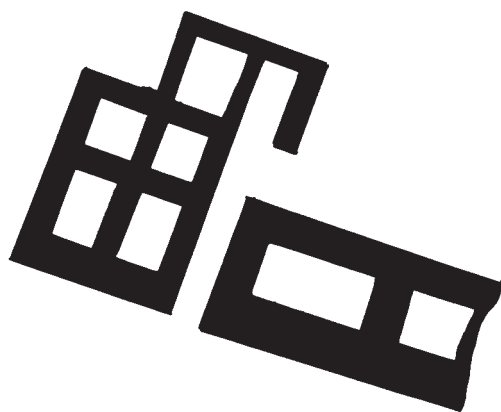
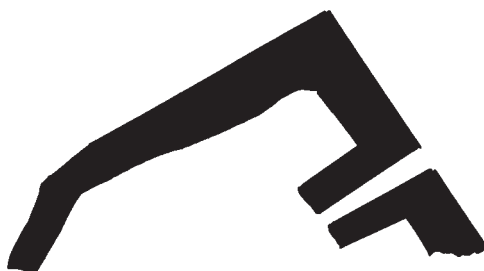


**Fig. III. The gates with internal chambers. Older phase.**

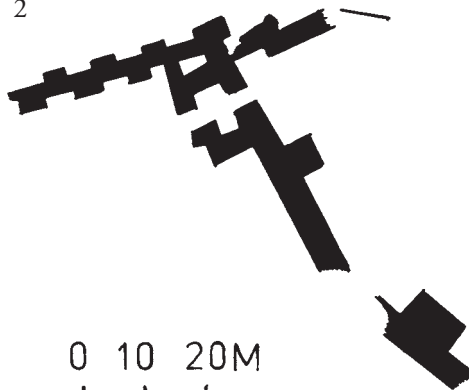
1 Argishtihinli. The main gate. According to W. Arutjunjan, *Kamiennaja letopis Armjanskogo naroda*, Erevan 1985, 21-23.

2 Erebuni. Arin- Berd. According to T. B. Forbes, *Urartian Architecture*, British Archaeological Reports International Series, Oxford 1983, 14.

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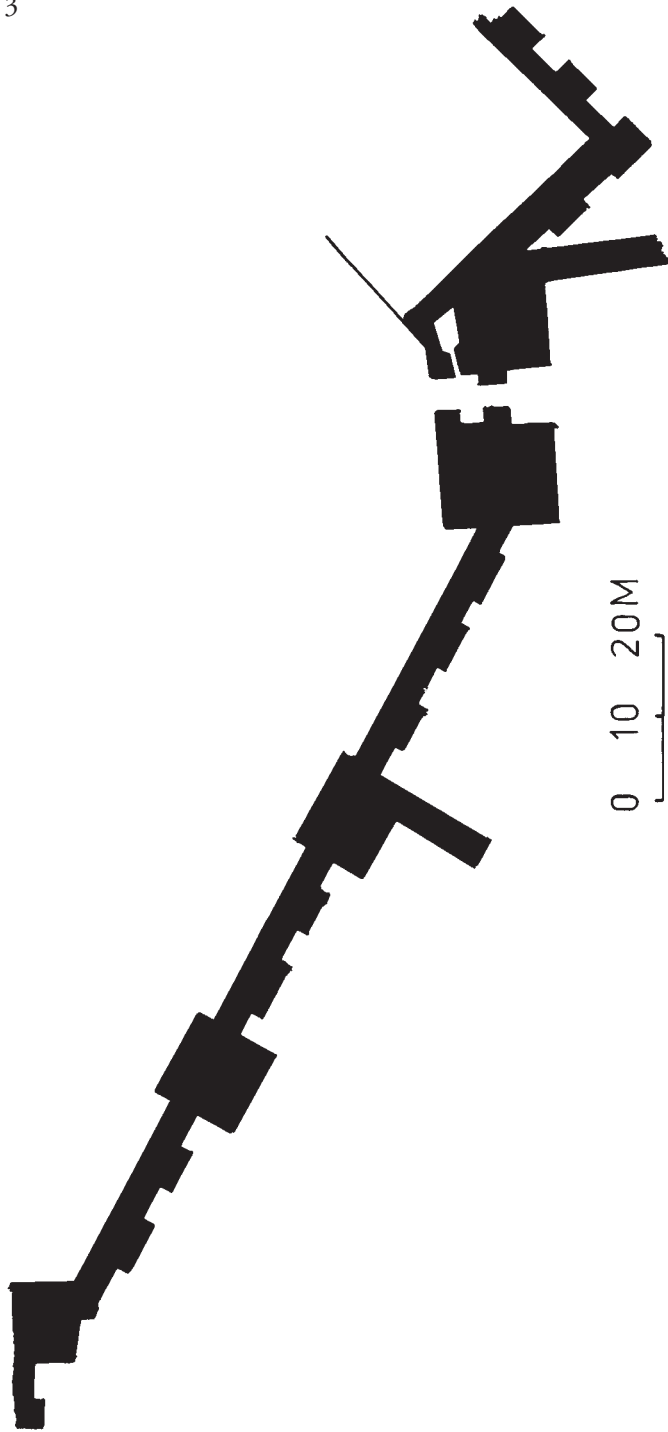


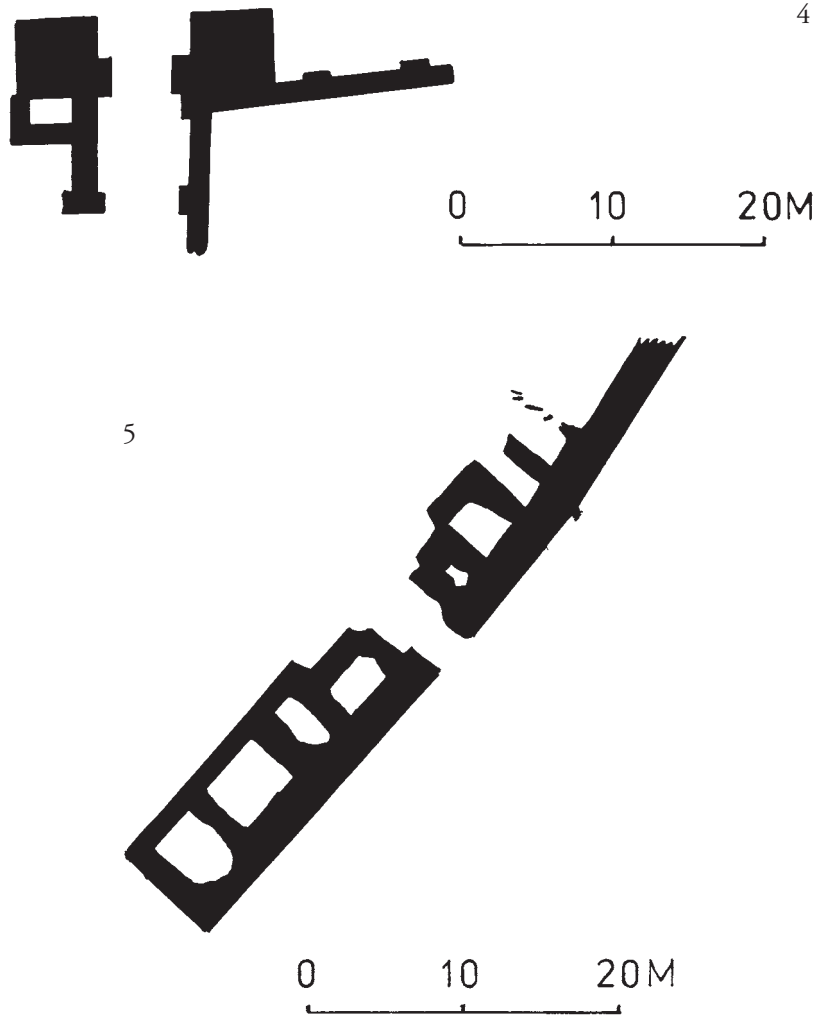
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**Fig. IV. The gates with internal chambers. The later phase.**

1 Kale Hodar. The northern gate. According to W. Kleiss, *Planaufnahmen urartäischer Burgen und Neufunde urartäischer Anlagen in Iranisch-Azerbaidjan im Jahre 1973*, *Archäologische Mitteilungen aus Iran* 7, 1974, 94-98.

2 Werachram. The gate of the citadel. According to W. Kleiss, *Planaufnahmen Urartäischer Burgen und Neufunde urartäischer Anlagen in Iranisch-Azerbaidjan im Jahre 1973*, *Archäologische Mitteilungen aus Iran* 7, 1974, 79-114.

3 Karmir Blur. The main gate. According to T. B. Forbes, *Urartian Architecture*, British Archaeological Reports International Series, Oxford 1983, 12.

4 Bastam. The northern gate. According to T. B. Forbes, *Urartian Architecture*, British Archaeological Reports International Series, Oxford 1983, 33.

5 Pir Çavuş. The middle gate. According to W. Kleiss, S. Kroll, *Vermessene Urartäische Plätze in Iran (West-Azerbeidjan) und Neufunde (Stand der Forschung 1978)*, *Archäologische Mitteilungen aus Iran* 12, 1979, 183-245.