The Gelveri-1 “underground city” (Aksaray - Turkey)

Tymur Bobrovskyy[1], Igor Grek[2]

Riassunto

La “città sotterranea” di Gelveri-1 (Aksaray - Turchia)

La “città sotterranea” di Gelveri si trova in Cappadocia (Turchia centrale), nel territorio della provincia di Aksaray, presso il villaggio di Güzelyurt. Si tratta di un ben noto complesso di grotte artificiali (cavità), già sinteticamente descritto in passato da diversi studiosi, in cui è presente anche una chiesa rupestre con resti di pittura di epoca bizantina.
L’insediamento è stato recentemente indagato più in dettaglio, con la realizzazione di un rilievo topografico più realistico, ed uno studio sulla cronologia delle possibili fasi evolutive, riportati in questo lavoro. La conclusione di questi studi, in linea con le precedenti ipotesi, conferma che si tratta di un rifugio sotterraneo, ma dimostra che è stato realizzato gradualmente partendo, in origine, da diversi rifugi elementari, separati, con ingressi indipendenti, per evolversi successivamente in una complessa struttura labirintica.
Infatti, in un secondo tempo, le singole unità sono state messe in comunicazione con un cunicolo scavato a fronti contrapposti, dunque, partendo da entrambi i rifugi uno verso l’altro. In seguito il complesso è stato ulteriormente ampliato con un nuovo ramo sottostante (parte 3), scavato dall’interno stesso della parte 2, e non dall’esterno. Questa area presenta due anomalie: la prima riguarda la realizzazione di un dispositivo di chiusura che difende un cunicolo cieco, interpretabile come una via di fuga che, nelle intenzioni, doveva raggiungere l’esterno, interrotta però in fase di scavo. La seconda è relativa alla presenza di tre pozzi nella stessa camera, che fanno pensare alla esistenza di un ulteriore complesso sottostante (potenziale parte 4), attualmente non accessibile.
All’interno dei diversi vani vi sono magazzini, fori per la ventilazione e pozzi per l’acqua (oltre ad almeno due latrine) che avrebbero permesso un soggiorno prolungato in caso di attacco da parte di bande di razziatori. Inoltre, tutta la struttura era protetta da dispositivi di difesa (porte-macina, cunicoli a gomito, pozzi-trappola e vie di fuga) disposti su fronti progressivi che, benché oggi molti risultino scomparsi o in parte distrutti, in origine avrebbero permesso una certa libertà di movimento dei difensori utile per portare rinforzi nei punti sottoposti maggiormente ad attacco, oppure la loro fuga all’esterno, in punti defilati. Benché, a causa di crolli e riempimenti, manchino alcune parti del reticolo, riteniamo che tale organizzazione risulti del tutto simile a quella riscontrata in ciascuno dei numerosi rifugi sotterranei presenti in tutta la Cappadocia, inserendo il complesso di Gelveri in un più ampio e comune contesto di stile di vita della popolazione dell’intera regione.

Parole chiave: grotte artificiali, Güzelyurt, Gelveri, rifugi sotterranei, porte-macina mobili.

Abstract

The “underground city” of Gelveri is located in the province of Aksaray, in the village of Güzelyurt. This is one of the most popular complex of artificial caves in Cappadocia, but so far not analyzed in detail. The following article illustrates our recent studies on the relative chronology of the occurrence of this underground complex. The structure of the underground settlement is described on the basis of the analysis of the designation of individual fragments, the remains of defensive devices and traces of tool on the walls. In this work the planimetry and extended-profile of the underground complex are published. The article substantiates that this complex was formed gradually: from several separate simple shelters to the complex labyrinth structure.

Key words: Artificial caves, Güzelyurt, Gelveri, underground shelters, millstone moving doors.

Introduction

The “underground city”[1] of Gelveri-1 is located in Güzelyurt[2], one of the districts centers of the province of Aksaray (central Turkey), about 45 km southeast of the homonym capital town, at an altitude of 1,500 m a.s.l. on the plateau, on the right bank of the Ihlara valley (figs. 1, 2).
This well-known site is mentioned by almost all scholars dealing with underground structures in Cappadocia and its schematic planings are presented in various publications (Yörükoğlu et al., 1989, pp. 62-63; Gülyaz & Yenipınar, 2007, pp. 90-92; Bixio, 2012, pp. 38-42).

[1] In Cappadocia most structures excavated in the subsoil are improperly called, in Turkish, *yeraltı şehirleri*, that is, “underground cities”. Indeed, the generic term of “underground settlements” or, when it is the case, “underground shelters” are more correct.
[2] Gelveri is the ancient Greek name of the present Güzelyurt.

[1] Ukrainian National Committee of ICOMOS, Kiev (bobrovskij@ukr.net)
[2] Speleo club «Poisk», Odessa (grekigor@mail.ru)

Fig. 1 - The area of Turkey where Cappadocia is located (drawing courtesy R. Bixio).
Fig. 1 - L’area della Turchia in cui è collocata la Cappadocia (grafica g.c. R. Bixio).

The Italian speleologists have interpreted this complex as an “underground shelter”, equipped with multiple defense lines, inserted in the context of the rock-cut settlement (Bixio, 2012, p. 41).
In our turn, we would like to analyze the functional designation of the various premises of this complex to try to clarify its development phases, taking into account our on-site observations and a detailed planimetry, more realistic of the previous schematic one.

Description

The underground shelter of Gelveri-1 is located in the historical part of the settlement of Güzelyurt, at the edge of Cevizli Sokak which leads to a small courtyard surrounded by north, east and south by stepped rocks (terraced cliff) where several artificial cavities are located. On the western side there are the ruins of a rock-cut church with traces of polychrome paintings

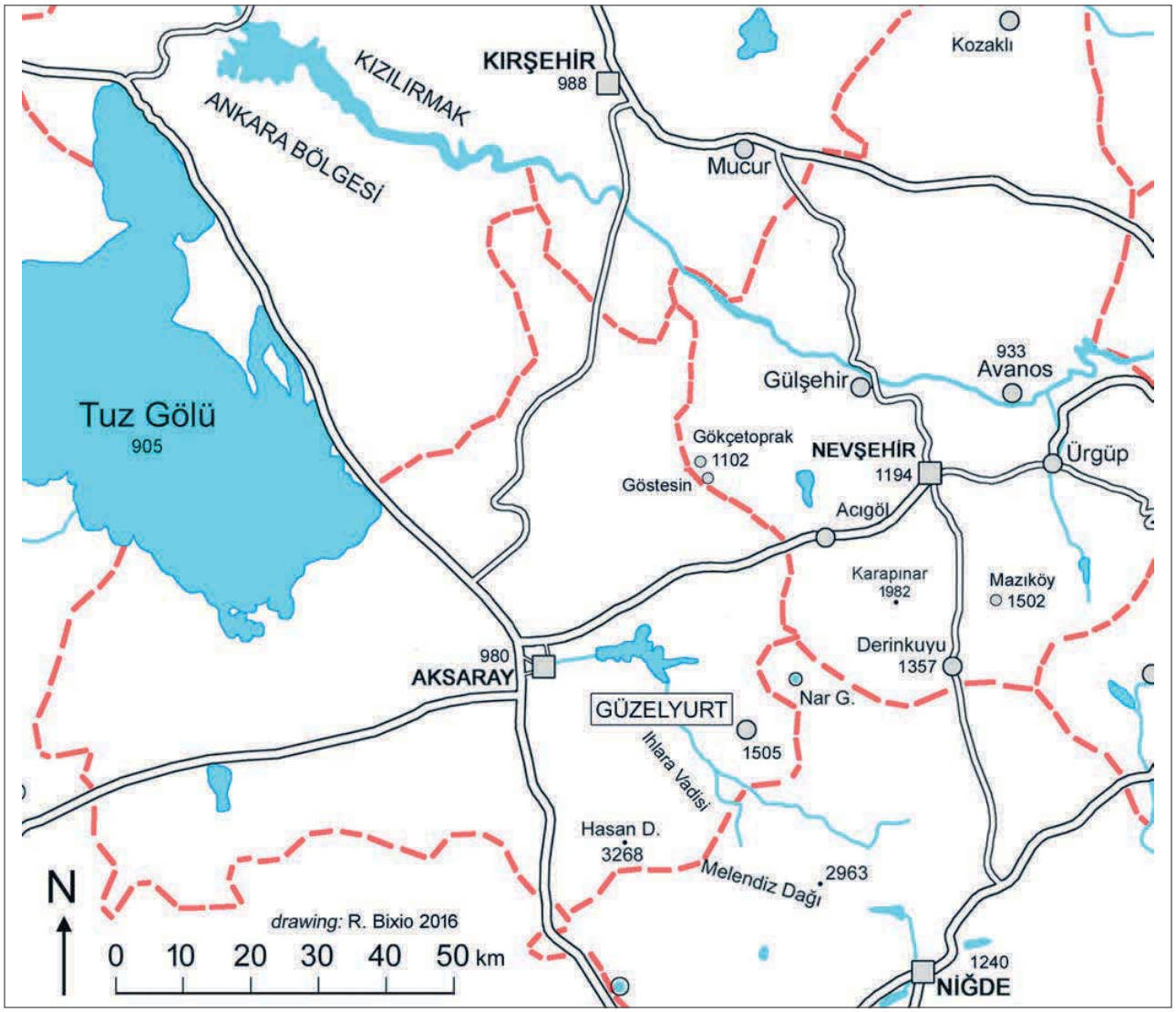

Fig. 2 - Localization of the Güzelyurt / Gelveri site in Cappadocia (drawing courtesy R. Bixio).
Fig. 2 - Localizzazione del sito di Güzelyurt / Gelveri in Cappadocia (grafica g.c. R. Bixio).

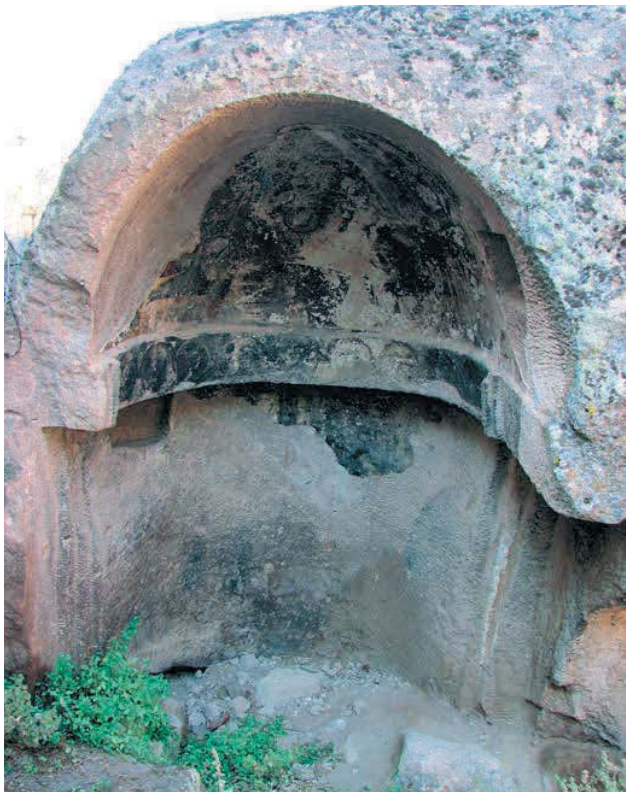

Fig. 3 - Traces of polychrome painting of Byzantine time on the ruins of the rock-cut church (photo T. Bobrovskyy).
Fig. 3 - Tracce di dipinti policromi di epoca bizantina nelle rovine della chiesa rupestre (foto T. Bobrovskyy).

of the Byzantine period; its apse is cut off due to the collapse of the vault (fig. 3). Various graves are visible in the naos floor. In a wall there are also remains of an arcosolium tomb.
The living rooms overlook the rocky wall of the eastern side of the courtyard with rectangular doors and small windows (fig. 4). In a masonry room, in the southern corner of the courtyard, there is a wide passage with descending stone steps: this is the modern entrance to the underground structure, currently equipped for public visits (figs. 5 and 6, point 1).
The complex looks like a complicated labyrinth of underground excavations (rooms and passages). First, it should be noted that the previous explorers had focused their attention on the description of the layout of the tunnels and rooms of the complex, while significant morphological characteristics of various parts of the network were ignored. Our observations allow us to say that this subterranean complex is made up of several units, initially excavated separately and joined afterwards. In fact, each unit had its own entry, now collapsed: this fact is demonstrated by the position of the round stone doors (millstone-doors) at the junction points of the rooms 8 and 14, respectively with the tunnels 9 and 16 (fig. 5), which in the current configuration of the underground settlement that monoliths have lost their defensive function.
The integrity of the defensive system of the complex is also affected by the breakthrough between rooms 2 and 8 (point 26), leaving the system made up of the shaft 3/tunnel 4/shaft 5 without any sense (fig. 5), in

Fig. 4 - Outside view of the farm excavated in the cliff (photo N. Moldavskaya).
Fig. 4 - Vista esterna della fattoria scavata nella falesia (foto N. Moldavskaya).

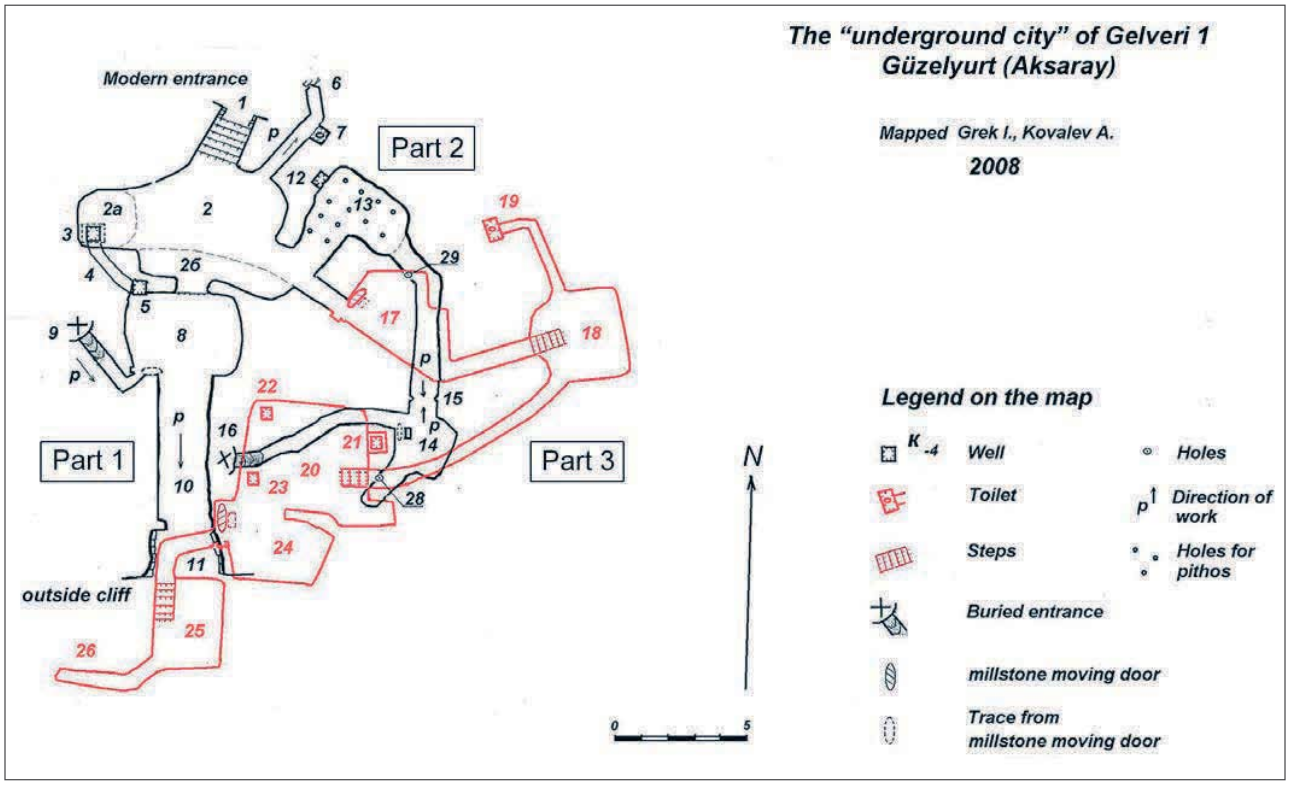

Fig. 5 - Plan of the underground settlement of Gelveri-1 (mapped I. Grek, A. Kovalev).
Fig. 5 - Pianta dell'insediamento rupestre di Gelveri-1 (rilievo I. Grek, A. Kovalev).

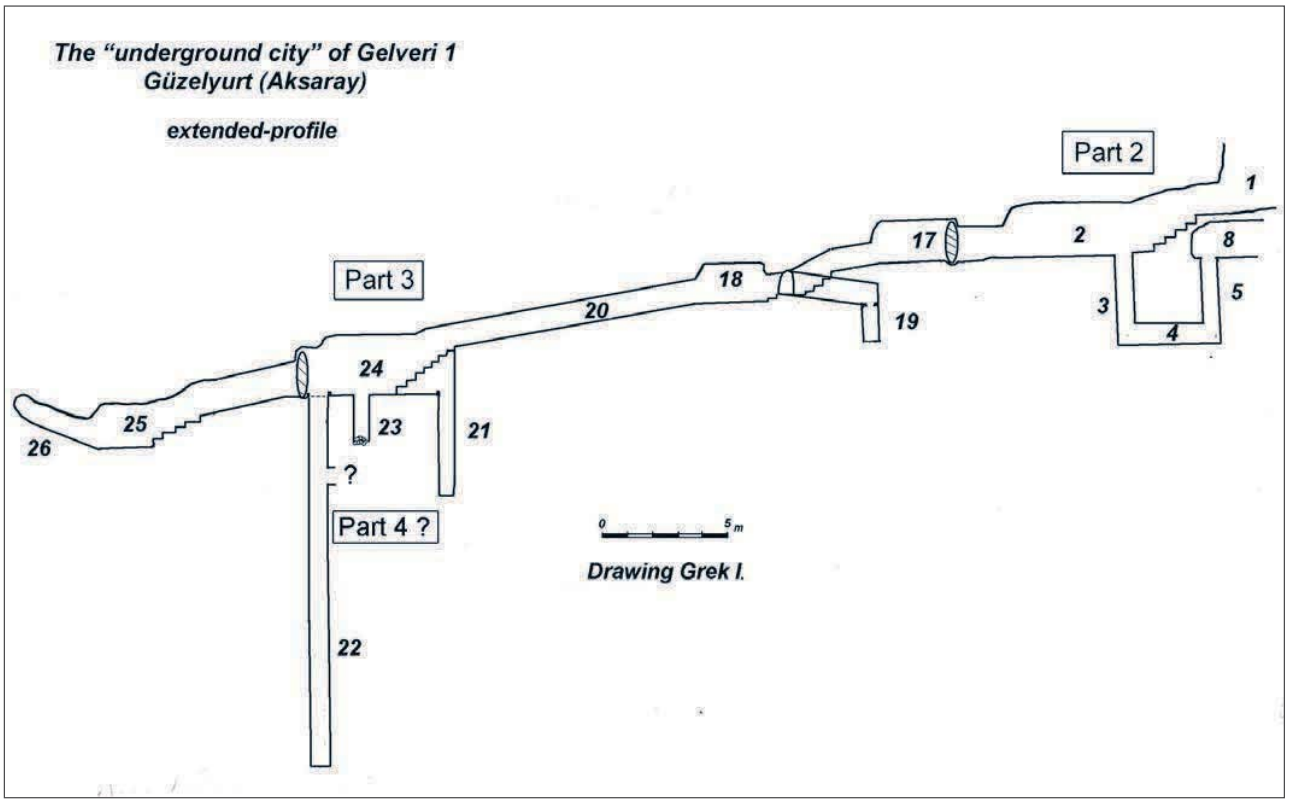

Fig. 6 - Extended profile of the underground settlement of Gelveri-1 (drawing I. Grek).
Fig. 6 - Sezione rettificata dell'insediamento sotterraneo di Gelveri-1 (grafica I. Grek).

Fig. 7 - Traces of excavation tools on the ceiling showing the different stages of the development of the underground system (photo M. Shirokov).
Fig. 7 - Tracce sul soffitto degli utensili di scavo che mostrano le differenti fasi di sviluppo del sistema sotterraneo (foto M. Shirokov).

addition to the fact that the modern entrance 1 is devoid of any trace of ancient locking devices.
By examining the individual parts of this complex, their development can be followed quite easily by detecting the signs of the excavation directions still traceable on the rock, the analysis of the configuration of the various premises, and so on.

Part 1

This part is localized in the south-east sector of the settlement, at its top level (fig. 5: points 14/16/28). Initially, this area was a single chamber shelter, where a winding tunnel was entered, inclined from entrance 16 (now collapsed), to room 14. The tunnel was blocked with a millstone-door. In addition, the short blind tunnel 28, excavated from room 14 southward, might be a unfinished attempt to connect with another part of the underground settlement, or it could be a so-called "tail", i.e. an emergency exit (unfinished) designed for evacuation in case of the block of the main entrance.

Part 2

This part, located in the western area of the complex (fig. 5: points 8/9/10), has a structure similar to the previous part 1.
A winding tunnel leads from entrance 9, now collapsed, to room 8, whose mouth used to be blocked by a millstone-door which has now disappeared (but its traces are visible on the surface of the rock wall of the room). As in the previous case, room 8 was a shelter, but with a much more developed structure. It is not impossible that, originally, the tunnel 10 would lead from room 8 to a vertical cliff in the nearby gorge, which would serve as a point of observation. At present, the passage 10, enlarged later, leads to room 11,

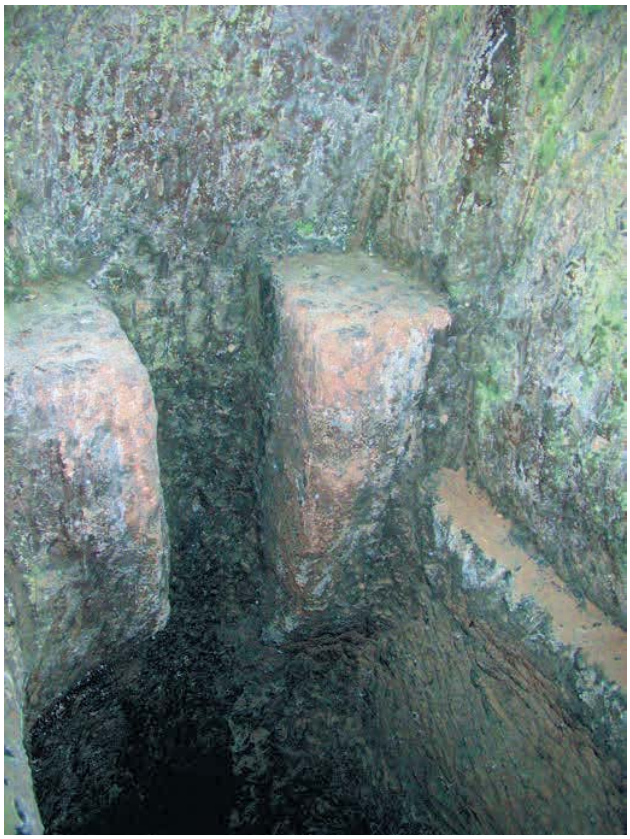

Fig 8 - The toilet on the lower level of the underground system (photo. G. Starostin).
Fig. 8 - La latrina nel livello inferiore del sistema sotterraneo (foto G. Starostin).

whose vault and side walls are covered with stone ashlars; the room faces outwards with a wide opening on the vertical cliff, which it looks like a kind of natural balcony (fig. 5: point 11).
Unlike the previous one, the shelter in part 2 was further developed. Room 2a had already been excavated in the phase after the realization of chamber 8. The passage between the two chambers was protected by an additional defensive system constituted by the two shaft 3 and 5, connected by the narrow tunnel 4 (figs. 5, 6). Similar defensive structures are known to have been documented in other Cappadocia complexes, for example, in the underground settlement of Yallı Damı (Yörükoğlu et al., 1989, pp. 36-37). At present room 2a is considered to be a part of the larger room 2, but the traces on the floor and on the vault of the premise indicate that the initial size was not so large (fig. 7).
So room 2a was later enlarged to the present size of the wider chamber 2, from which the room 13, used as a warehouse, has been dug northeastward. In this room there are pits for vessels on the floor and in a niche in the wall the well 12 opens (fig. 5). Considering the presence of a parapet around the edge of the mouth and a slot to place a windlass above it, the well was undoubtedly used to supply water.
In addition, in room 2, a blind tunnel extends north-

Fig. 9 - Closing device (millstone-door and support pillar), partially destroyed, in room 24 (photo A. Kovalev).
Fig. 9 - Dispositivo di chiusura (porta-macina e pilastro di sostegno,) parzialmente distrutto, nella camera 24 (foto A. Kovalev).

wards. At its end (point 6) a small hole on the edge is visible. Probably this tunnel was a "tail" (emergency exit), perhaps communicating, originally, with a collapsed room.
On the side wall of the tunnel there is a niche (point 7) containing a sanitary facility (figs. 5, 8). The presence of the warehouse, well and latrine in part 2 shows that this shelter (starting from point 9) was designed to withstand long lasting sieges.
Later, the two shelters of the mentioned part 1 and part 2, were put into communication with tunnel 15, excavated between rooms 13 and 14 (fig. 5). This tunnel has a precise point of junction that shows the traces of the opposite excavation directions of the cavity.
Let us note that the conjunction of independent shelters in one complex through the creation of "horizontal connections" can be observed in many other underground settlements in Cappadocia, for example in Derinkuyu and Göstesin (fig. 2) (Bixio, 2012, pp. 103-109, 117-123).
Consequently, it is possible to identify a succession of defensive devices that allowed the defenders several maneuvering options: the escape, if the enemies had conquered a sector of the complex, or the possibility to move within the refuge itself to provide for the defense of other sectors under attack.

Part 3

After that, the development of the underground settlement was continuing.
Consequently, the additional part 3, identified by points 17 to 26, was created (fig. 5).
The excavation was not started from the surface, but from one of the internal premises of the shelter. A passage was excavated from room 2, to the south-east, to

Fig. 10 - The well 22 with the lifting pole (photo K. Chuyeva).
Fig. 10 - Il pozzo idrico 22 con il palo per il sollevamento (photo E. Chuyeva).

room 17, whose entrance was defended by a millstone-door (fig. 5).
It is possible that room 17, originally, was created as the safest defense line for part 2 (last defense). Subsequently, room 17 was developed as a multifunctional, more complex shelter consisting of several rooms (points 17, 18, 20, 24, 25) connected by tunnels.
In this lower sector we can find elements similar to those of the upper residential level: the water wells 21 and 22, the latrine 19, the "tail" unfinished in the tunnel 26 (figs. 5, 6).
The duplication of the functional elements in this part demonstrates that the rooms of the upper shelter by that time had become vulnerable, for instance, probably, because of a breach or due to a collapse at the point where the entrance 1 of the underground settlement is now located.
One should attribute the presence of a stone door at the exit from room 24 (fig. 9) to interesting peculiarities of this part of the refuge. We note that the door separates the room 25 and the blind tunnel 26, which has no independent exit on the surface (fig. 5). That is why its placing seems senseless at first sight. The room, blocked with a stone door from the outside, has an analogue in the underground settlement of Gaziemir, open to tourists, where guides interpret such room as a prison.

Fig. 11 - The well 22 (photo. E. Chuyeva).
Fig. 11 - Il pozzo idrico 22 (foto E. Chuyeva).

On the other hand, the tunnel 26 ends near the surface, and it results that the excavation has followed the drilling of a pilot-hole, the traces of which indirectly support the hypothesis of designating the tunnel 26 as a "tail".
Beforehand, pilot-holes for determining the direction of excavation have been identified in several other shelters in Cappadocia (in the complexes of Mazıköy, Derinkuyu, etc. - fig. 2).
One should note that Italian speleologists also consider the possibility that the tunnel 26 has been started to create a specific passage to evacuate the settlement (literally an "escape way"), then it was suspended (Bixio, 2012, p. 41).
Another peculiarity of this part of the settlement is the presence of three shaft in room 20, two of which (points 21 and 22) were undoubtedly used for water supply (wells), given the presence of a parapet on the edge of the mouth of wells and slots for the housing of a windlass above them (fig. 10).
The presence of two wells in one room requires an explanation, since it is a unique, or at least very rare event in the Cappadocia shelters.
Let us pay attention to the fact that under the floor of room 20 obviously there are the premises of another shelter, now inaccessible, probably used originally to have an independent exit on the surface (a potential part 4).
The communication shaft 23, which connected parts 3 and 4, collapsed and was buried by stones. Probably, during the excavation of part 4, well 22 was opened (fig. 11). As this circumstance worsened the strategic function of the well 22, probably the extra well 21 was made in room 20.
There are certainly other possible interpretations of the group of wells in chamber 20. It can be assumed, for example, that the northern part of room 20 has been excavated independently from well 22 and that initially it was a small chamber, working as last defensive line for part 4 premises, subsequently connected with the premises of part 3.
In any case, the three wells in chamber 20, joining different levels, characterize it as an important nodal element.
This kind of premises has been found in a number of permanent shelters in Cappadocia: in particular, premises with a church in the Mazıköy complex, a room with a well in the Sivasa S-1 system, in the village of Gökçetoprak (fig. 2) (Gülyaz & Yenipınar, 2007, p. 68; Bixio, 2012, p. 183).
It is remarkable that the vertically drilled holes leading to the premises of the upper settlement have been found in two points of the part 3, in the vault of the tunnel between the rooms 13 and 14 (hole 29), and in the vault of the room 14 (hole 28).
Their presence can be explained by the need for ventilation of the lower branch before the communication shaft 23 was realized and the breakthrough with the well 22 was produced. After these events, there was no need for a specially equipped ventilation of room 20.

Conclusions

Most of the defensive devices of the underground complex described here are at present destroyed: in room 8 there is no more the millstone-door and its support pillar; the support pillars of the rooms 17 and 24 have been destroyed, and the same stone door in room 17 has been broken; the wells 12 and 21, and the communication shaft 23 has collapsed.
All these circumstances are the evidence that the underground complex of Gelveri-1 has undergone a phase of intentional destruction of defense devices. Signs of similar destruction can be found in a number of other underground settlements: for example, the many breakthroughs that, in the complex of Mazıköy, allow you to get around the stone doors without moving them, can be attributed to that same event.
Finally, even later, the complex underwent changes related to the adjustment of the refuge to the various household needs of the inhabitants of the local farms on the surface.
In particular, such adjustments are attributable to some interventions, such as: the widening of the southern wall of room 2; the realization of a stairway entry, in the point 1, that has replaced the collapse of the outer rock wall; the addition of a new door between the chamber 2 and the chamber 8; the widening of tunnel 10, etc.
Thus, our observations on the structure examined, as a whole support the conclusions that were proposed by our Italian colleagues, who have identified in this site a shelter with several defensive lines.
However, we believe that there are some rather compelling reasons to consider not only the specific features of

the structure layout, but also to identify the various stages of its complex development. Consequently, in the case of the underground shelter of Gelveri-1 we can follow the phases that have transformed its primitive form into a complex labyrinthine system.
Unfortunately, we do not have any information about the dates concerning this complex; moreover, at present, we can only document a part of a larger system yet inaccessible for complete examination.
However, a number of elements of this complex and, in particular, even the principle upon which its evolution is based, similar to those of other Cappadocia shelters, allow us to consider the "underground city" of Gelveri-1 in a much wider context.

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