PAPERS AND MONOGRAPHS OF THE FINNISH INSTITUTE AT ATHENS VOL. XVI

THESPROTIA EXPEDITION II
ENVIRONMENT AND SETTLEMENT PATTERNS

Edited by Björn Forsén and Esko Tikkala

ISSN 1237-2684
ISBN 978-952-67211-2-5

Printed in Finland by Ekenäs Tryckeri

Cover: Megalo Karvounari seen from the northeast. Courtesy of the 32nd Ephorate for Prehistoric and Classical Antiquities

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Contents

Further Observations on the Hellenistic Fortifications in the Kokytos Valley

Mikko Suha

The northern part of the Kokytos valley is home to four ancient fortified sites, the Castle of Paramythia, Elea, Agios Donatos and Kioteza, all of which are situated on the western foothills of the Paramythia range. Of these, the two small sites, Agios Donatos and Kioteza, remained virtually unknown until recently (Fig. 1). No archaeological excavation had previously been conducted on either site, and only short references to them could be found in the literature. N.G.L. Hammond was the first to refer briefly to Agios Donatos in 1967, whereas S. Dakaris described both Agios Donatos and Kioteza in 1972.[1]

Both fortresses have recently been examined and excavated by the Thesprotia Expedition: Agios Donatos in 2005-2008 and Kioteza in 2006 and 2008. My previous article on Agios Donatos[2] was based on the data available in 2006, but since then the site has yielded more information. Furthermore, even the unexplored neighbouring fort Kioteza has had trenches opened up within its perimeter, thus justifying this second article, which mainly concentrates on the structural remains and architectural features of the fortifications and not so much on the actual excavation process or the mixed strata found during the excavations.[3]

Agios Donatos

Drawing on data gathered during the two initial years of work we concluded that the fortification walls were built at some stage between the last decades of the fourth and mid-third century BC, most likely during the first quarter of the third century, i.e. the time of Pyrrhus. The archaeological record on site was affected by the later Roman re-use of the site.

Since the previous study two features of the fortifications have been examined in more detail: the large tower at the eastern end of the enceinte, and the straight-angle corner located at the south-eastern sector of the enceinte (Fig. 2).

The tower

A massive quadrangular tower dominates the eastern approach of the fortress, providing defense on the side where access is easiest. The most striking feature of the tower is the fact that it has an inner chamber at ground level. The tower measures some 7.30 x 6.50 m in width and depth respectively, with a chamber measuring approximately 5.50 x 4.40

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[1] Hammond 1967, 71; Dakaris 1972, 138-139.

[2] Suha 2009.

[3] I wish to thank Björn Forsén for all the support he has given me, as well as for the possibility to study these fortifications as a member of the Thesprotia Expedition. Figs. 2, 3, 10 right and 11 right are after a general map made by J., T. and A. Okkonen, Figs. 12, 13 and 18 after a general map made by J. and T. Okkonen. Fig. 14 is taken by T. Turmo. All the other illustrations are by the author.

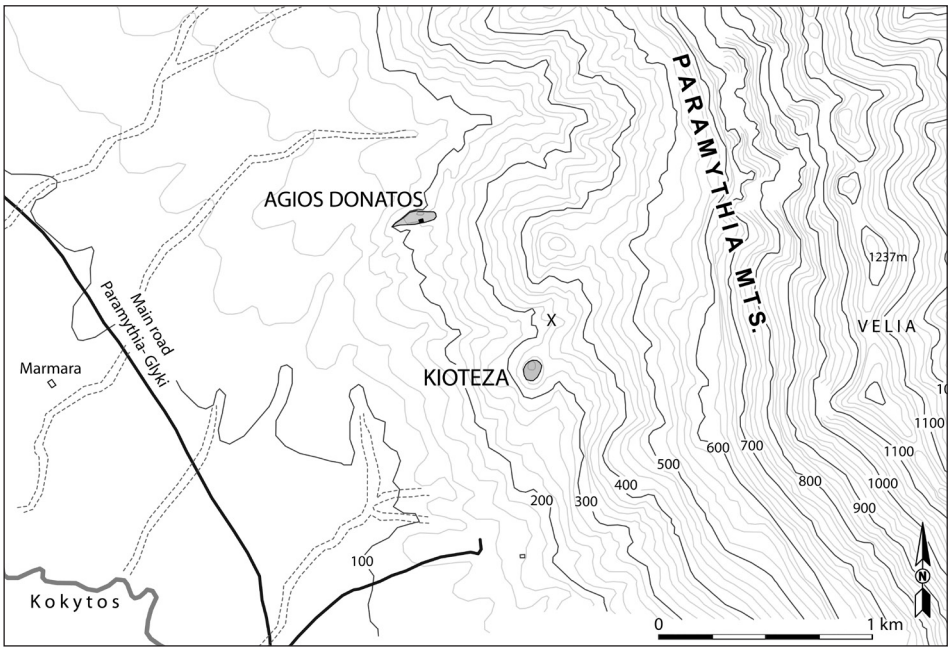

Fig. 1. General map of the area showing the location of Agios Donatos and Kioteza. The high pass over the Paramythia Range, Velia, is also marked. X indicates remains of a Roman (?) water pipe line in connection to a spring.

m[4], yielding a total floor area of 24.2 m². A doorway, 0.95 m wide, is built in the south-western corner. The walls of the tower consist of two faces of polygonal masonry[5], with a thickness of 1.02-1.07 m. Unlike the thick curtain walls[6] of the fort, the tower walls only have a very narrow space in between the two faces, which suggests that there never was any filling in between.

After the season of 2006, which concentrated on the tower for the first time[7], the excavation of the tower was resumed in 2007. The large fallen blocks which had previously hindered excavation near the eastern wall of the tower were removed using a tractor with a back-hoe. As a result the area excavated inside the tower was more than doubled in size, completely exposing the southern wall and approximately half of the eastern wall and a part of the western wall down to their foundations (Fig. 3), thus yielding more information on the structure of the tower. When the tower had collapsed it had tumbled towards the south-east, with the blocks from the northern wall filling the chamber. Approximately one third of the chamber still remains unexcavated as the remaining rock tumble near the northern wall makes any further excavation difficult.

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[4] The measurements in the first article differed slightly from these, being somewhat smaller. The measurements in this article are more correct, however, as the dimensions of the chamber after two field seasons of excavation could be examined more thoroughly.

[5] Polygonal meaning blocks with more than four sides on the facing, meeting at obtuse angles. Polygonal blocks can be of varying shapes, whereas ashlar blocks are always quadrangular and even-sided. See Scranton 1941, 16-17, 45; Winter 1971, 84.

[6] Curtain walls are the actual defensive walls of the fortress.

[7] Suha 2009.

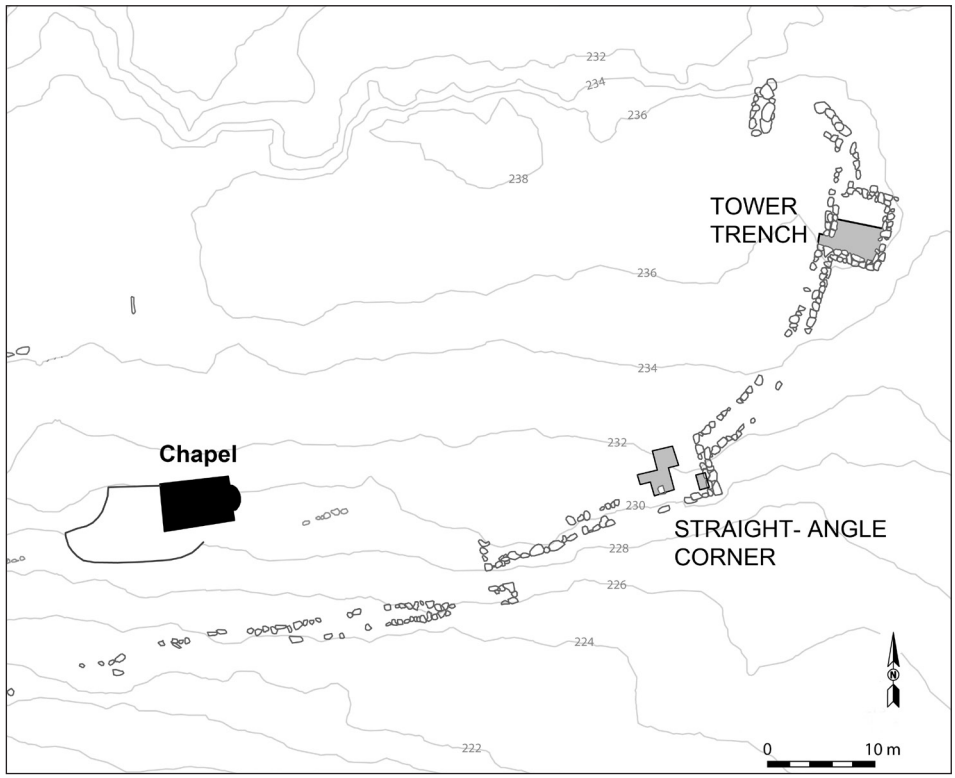

Fig. 2. The fortifications of Agios Donatos and the excavated areas mentioned in the text.

All of the walls in the tower were built using bulging polygonal blocks quarried on site. Similar stones were used in both the inner and outer face, suggesting that the tower was built with a ground-floor chamber right from the start.[8] The excavation revealed that the southern wall today is standing to a height of 2.80 m, far higher than was anticipated. The southern wall consists of especially large and irregular blocks; their sizes ranged from 0.82 x 0.22 up to huge 1.36 x 0.90 m in width and height respectively. The thickness of the blocks was more difficult to ascertain, but it seems to fall into a 40-50 cm category. Four of the blocks used are cut in a manner called *keying*[9].

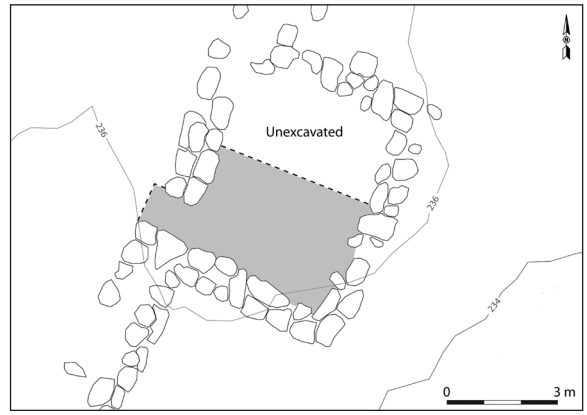

Fig. 3. Plan of the tower. Excavated area highlighted with gray.

[8] If the tower had been built with a solid ground floor, there would not have been any inner face.

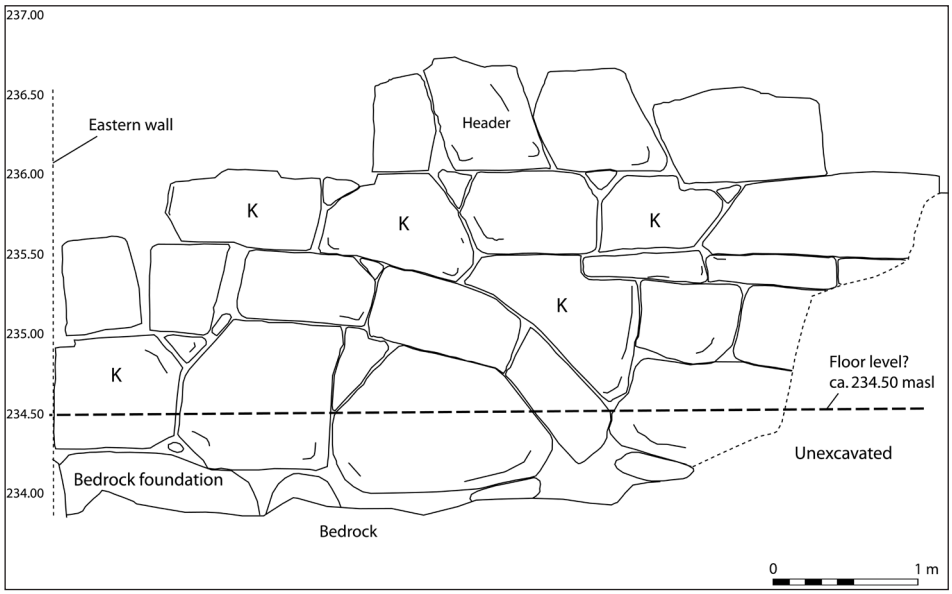

Fig. 4. South wall, south-facing elevation with the assumed original floor level at 234.50 masl. Note the frequency of triangular plugs and keyed blocks (K).

Between many of the blocks, small triangular *plug* stones of ca. 0.2 x 0.2 m range have been placed in order to make the courses more even.[10] One *header* block is preserved in the uppermost part of the preserved wall (Fig. 4). Header blocks were laid crosswise into the wall in order to bond the wall faces together.[11]

The eastern wall, on the other hand, is badly destroyed and some of it still remains obscured by tumbled blocks despite the clearing efforts. Approximately half of its length was exposed up to a height of some 1.4 m. Keying and several triangular plugs are discernible in this wall also. The plugs are slightly larger than the ones found in the southern wall, up to a 0.3 or even 0.4 m range. Within the exposed stretch of the wall there are two header blocks, both in different masonry courses (Fig. 5).

The western wall still stands up to a height of 2.4 m, but the upper part has shifted inwards when the tower collapsed, especially right next to the doorway. As a result the remaining wall leaned dangerously into the chamber. Thus, as a precaution it was only excavated down to bedrock in the extreme northern corner of the trench, furthest away from the doorway, where the wall still retained its original position. The blocks used in the western wall are somewhat more quadrangular than in the other walls. One keyed block is visible, as well as two triangular plugs.

The walls of the tower, like the whole fortress, are founded directly on bedrock. However, the bedrock is fairly uneven. In places it consists of sharp, narrow ridges up to 40-

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[9] Lawrence 1979, 238. Keying involved using somewhat L-shaped blocks in the wall. Such blocks supported the wall in an incline, acting as hooking blocks against the direction of the slope.

[10] Lawrence 1979, 238. Triangular plugs standing on their apexes were sometimes used as filling stones between large irregular blocks. Small plugs were usually placed at the top of the course, but sometimes a larger plug could be placed filling the entire course. Nevertheless, such plugs were always placed with their apex pointing downwards.

[11] Karlsson 1992, 68-69.

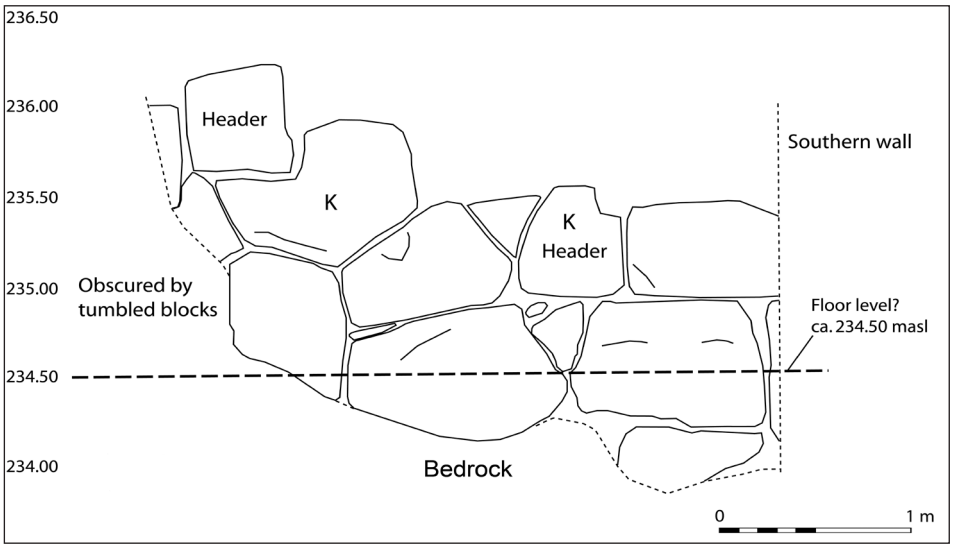

Fig. 5. Eastern wall with the assumed original floor level at 234.50 masl. Header blocks and keyed blocks (K) are also marked.

50 cm high, as was evident near the southern and eastern walls of the tower. The southern wall is built on top of the sharp bedrock outcrops at a height of 233.84-234.02 masl. But at the northwestern part of the trench, approximately in the middle of the chamber and close to the western wall the bedrock is smooth and level. Here the bedrock is on a considerably higher level, with the lowest parts at 234.51 and the highest at 234.74 masl (Fig. 6).

It seems unlikely that such sharp, relatively high bedrock outcrops as found close to the southern and eastern walls would have been utilized as a floor level. Instead one would rather think that they were covered with an earthen floor, filling the space between the ridges and covering them. Indeed, the excavation revealed that the soil in the lowermost 80-90 cm was of a dark, somewhat looser matrix with relatively many black glazed sherds and no Roman material. On the other hand, the layer above this stratum consisted of reddish, somewhat clayey soil with considerable amounts of Roman and only a few pre-Roman finds.

The floor of the ground-level chamber was seemingly left uneven. The smooth rock surface in the middle of the chamber at the altitude of 234.58-234.74 masl was left jutting out of the floor, whereas the earthen floor elsewhere in the chamber seems to have been located at 234.50-234.55 masl, just high enough to cover the sharp bedrock outcrops. In this case the largest blocks in the southern and eastern walls would have been half covered by the soil, which would have added to the stability of the walls (Figs. 4 and 5).

Whatever the case, it seems that the later Roman period re-use of the tower involved building a new concrete or *cocciopesto*[12] floor roughly 10-15 cm higher than the Hellenistic floor, at approximately 234.60-234.65 masl. Strangely enough, it appears that

[12] Adam 1994, 232. According to Adam the Roman floor building technique consisting of four layers is known as *opus signinum* or *cocciopesto* in Italian. The lowest layer (statumen) consisted of dry laid pebbles, followed by rudus, which consisted of lime mortar intermixed with gravel. On top of these was laid a layer called nucleus, which in turn consisted of lime mortar with broken tiles mixed within. The actual floor surface was only laid on

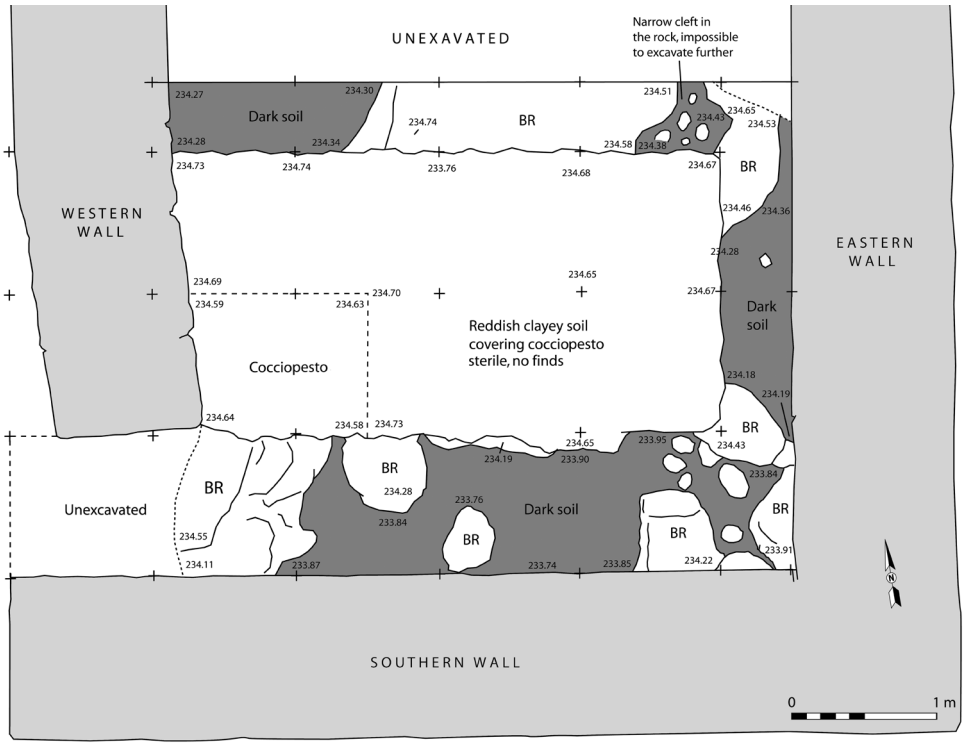

Fig. 6. Final plan of the tower trench. In the middle is a hard layer of *cocciopesto*, which turned out to be impossible to penetrate. Near the edges it was possible to reach bedrock (covered thinly by dark soil). Bedrock outcrops are marked with BR.

even the Romans left the floor uneven, with the previously mentioned smooth bedrock outcrop remaining some 10-15 cm higher than the floor. It also seems that the *cocciopesto* was only poured in the center of the chamber, so that close to the walls the earthen floor prevailed. Close to the southern wall, the concrete was thinnest and we managed to chip away the floor and excavate up to a meter deeper, but in the center of the chamber where the material was thicker it prevented all further excavation.

Keying was commonly used in walls built of regularly shaped blocks, such as ashlar or trapezoidal. Occasionally polygonal, roughly L-shaped blocks were used to anchor the regular masonry courses against the direction of the slope, adding to the stability of the wall descending a hill. The use of both keyed blocks and triangular plugs seems to have been frequent in the Peloponnese during the early Hellenistic period.[13] At Agios Donatos all the blocks used in the tower walls are polygonal and thus irregular. Therefore the keying of blocks played no significant role in anchoring the walls against the slopes on which they were built. Only in the southern wall is keying consistently used

top of these. At Agios Donatos all the observed floor foundations were of the second, rudus layer, with white limestone gravel mixed within lime mortar.

[13] In western Arcadia at least three enceintes have such features visible: The small fort at Gortys, as well as in Paleokastro and Agios Nikolaos near Vlachorafti. All are connected with the Macedonian occupation of Peloponnese, more precisely from the late fourth to the early third centuries BC. See Martin 1947, 144-147; Charneux and Ginouves 1956, 528-532, 541-542.

against the direction of the slope, with the L-shaped blocks' lower parts on the uphill side and higher levels on the downhill sides. In both the eastern and western walls, the appearance of blocks with keying is dictated by the shape of the particular blocks at hand rather than a conscious effort to strengthen the walls against the incline of the slopes. Plugs were used in the inside faces of walls whenever required, also due to the shape of individual blocks. On the outside faces, such plugs do not seem to have been as frequent, most likely because they might be knocked off and thus endanger the stability of the wall.

The southern wall has no remains of arrow slits or other apertures despite standing to a considerable height. If the original floor level was at approximately 234.50 m, the wall would still reach a height of 1.4 to 1.95 m above the floor level. No arrow slits would have been built higher than that. Neither does the eastern wall seem to have had any apertures, although the now disappeared upper masonry courses might have contained them. If the eastern wall had no apertures, one is inclined to think that the lowest chamber of the tower was used purely for storage or living quarters and not for defensive purposes. This would be consistent with Winter's observation that the ground-floor chambers in the fourth century or early Hellenistic towers had no active military role.[14]

The straight-angle corner

According to Hammond and Dakaris the fort had two towers as well as two right-angle turns of direction in the wall.[15] Two right-angle turns are indeed visible in the southeastern corner of the enceinte: Approximately 25 m south-west of the tower the curtain wall makes a 90 degree angle constituting the first jog of the *indented trace*.[16] The second jog, through which the southeastern gateway is built, is some 22 m further west.[17] The first corner has remains of a peculiar structure, which is worth looking into in detail. Could this structure have been interpreted as the second tower by Dakaris?[18]

The curved curtain wall running between the tower and the first jog of the indented trace varies between 1.9 and 2.4 m in thickness, being narrower close to the tower and thicker next to the corner. As the eastern curtain reaches the flank of the indent, the thickness of the wall abruptly changes from 2.4 to approximately 1.0-1.15 m (see Fig. 2). A few meters westward from the corner the curtain has collapsed. After some 8 m the inner face of the southern curtain comes into view; between this point and the corner the trace of the southern inner wall has disappeared. Where it was possible to measure, the thickness of the southern curtain varies between 1.9 and 2.1 m.

The curtain walls are built of an interior and an exterior face of polygonal masonry, between which there is a filling of compacted rubble and soil. The variation in the

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[14] Winter 1971, 180.

[15] Dakaris 1972, 138; Hammond 1967, 71. Hammond describes seeing remains of two towers in the northeastern corner of the enceinte. One tower is obvious, but the other one could not be found. Most likely he interpreted the large blocks of the western wall of the northeastern gateway as being the second tower. Dakaris, on the other hand, when describing the fortifications on the southern edge, speaks of two towers there.

[16] Lawrence 1979, 349; Scranton 1941, 150, 153. An indented trace consists of long sections of wall known as faces, and, at right angles to faces, shorter walls known as flanks or jogs. The alteration of faces and flanks sometimes for a considerable length creates a somewhat saw-tooth ground plan. It could be used as an inexpensive enfilading device instead of much more expensive towers.

[17] In Suha 2009, 122, I erroneously claimed that the face of the first jog would have been as long as 40 m.

[18] See note 15. Perhaps even Hammond spoke of this as a second tower, if he actually meant the eastern end of the enceinte rather than specifically the northeastern corner. The description is rather vague, after all.

thickness of the curtains can be explained by the swelling of the wall's earthen fill due to rainwater seeping into the structure. When the filling swells, it pushes the masonry further outward, eventually causing it to collapse.[19] On the other hand, the narrow wall in the corner consists of two faces with no filling in between, in this respect resembling the structure of the tower.

The present ground level inside the corner is approximately 3 m above that of the present ground level outside the fortress, too low for having been topped only with mere battlements. The interior wall face in the eastern, or flank, side is clearly visible all along its course. On the southern, or face, side the interior wall has disappeared, with only the lowermost blocks of the exterior face visible. However, the facing of the southernmost block of the eastern interior wall, closest to the corner, has been cut smooth in its southernmost 10-15 cm whereas the facing on the rest of the block remains slightly uneven and bulging. This smooth area of the block most likely indicates the location of the southern interior wall face. The southern wall seems to have had a thickness similar to that of the eastern wall, i.e. between 1.0 and 1.1 m.

Immediately after removing a few cm of topsoil in a trench in the very corner, a continuous layer of rubble was exposed all over the trench at an elevation of 231.31-231.53 masl (Fig. 7). These roughly fist-to-head-sized stones were loosely laid, with practically no soil in between. I am inclined to think that this is the original structure of the corner; large, heavy blocks making up the outside facing were carefully laid for support, while the space between the outer wall and the natural bedrock slope was filled in with loose stones in order to form a level surface in the interior. It was common practice to construct such features; the loose fill with no soil would have let the water seep through quickly, in this way not endangering the stability of the corner.[20]

In the northeastern corner of the trench one could see that all the remaining blocks of the interior wall face were laid directly on top of the filling, indicating that this masonry course in situ was the lowermost course of the wall (Figs. 7 and 8). To stabilize the structure, a header block was built to extend underneath the second block of the inside wall face, which, besides the header, was supported only by the rubble fill (Fig. 8). In the southern wall, the lowest blocks belonging to the inside face would have been located in the next masonry course, which however has disappeared. The actual floor level in the corner would most likely have been situated at least 10 to 40 cm above the level visible today, at approximately 231.60-232.00 masl. Thus, the fill and the blocks remaining today would originally have been hidden from view.

The same multitude of large, loose stones was found immediately below the topsoil also in another trench some 4 to 6 m further to the west. However, this trench was mostly covered by *cocciopesto* [21] floor which was poured directly on top of the rubble fill, hindering any further excavation in the area. In the southern part of the trench, some 4.12 m from the corner a large polygonal block was discovered *in situ* (Fig. 9). The block had been laid with its long side in a parallel course to the eastern wall, but it was difficult to expose the block completely as it also was partly covered by *cocciopesto*. At the location where the block was found, the ground slopes down toward the south, as there has been a landslide causing considerable damage to the curtain wall. Most of the curtain as well

[19] Hammond 1967, 715.
[20] Lawrence 1979, 217.
[21] See note 12.

Fig. 7. The straight-angle corner, view towards southeast. The loose rubble filling and the lowermost inner face blocks of the narrow corner wall are visible. The block adjacent to the flag has traces of the adjoining wall.

Fig. 8. The straight-angle corner, detail view towards southeast. The upper blocks are laid directly on top of the filling. A header, marked by arrows, is visible in the lower course. Around the block and in the foreground is the rubble fill. Note the large hollows around the rubble.

as everything behind it had tumbled downhill, eradicating all traces of curtains in the area (Fig. 9). The top of the newly found block was located at ca. 230.15 masl, which is approximately 1.20 m below the level of the first trench and up to 1.5 m below the assumed floor level.

There are two possibilities why this block was found where it was. Firstly, it could indicate where the narrow wall in the corner changed into a thick curtain wall (Fig. 10). The block could also have been a header in the interior wall face, as it is located where the interior face of the curtain wall would have stood. If there was a similar block located in the exterior wall face, now disappeared, they could have formed a cross-wall within the curtain. Cross-walls were used to divide the curtain into independent compartments, so that if one compartment should suffer a collapse, it would not have endangered the entire curtain. In Hellenistic fortifications, cross-walls dividing the fill into regular compartments were sometimes systematically used.[22] However, it cannot be ascertained today whether this was the case, as the walls in the area are so badly destroyed.

What kind of structure could these features indicate? In the corner there is a clear reduction in the total wall thickness. To the east and west of the corner the curtains are approximately 2 m thick, whereas the walls at the corner are only half of that. The corner structure has not been an actual tower as it does not protrude from the walls, yet its structural features do bear close resemblance to one.

The features of the corner could be explained in two ways. Firstly they could be interpreted as indicating the use of *ikria*, meaning scaffolding or a boarded platform. The

Fig. 9. The straight-angle corner, view towards south. To the left is the rubble fill; to the right, pointed by the arrow, is the large block. Dashed line indicates the location of the inside faces of walls. The cocciopesto floor, poured directly on top of the original rubble fill, is visible underneath the north arrow. The landslide is visible on the right-hand side.

[22] Karlsson 1992, 74; Winter 1971, 135- 136, n. 36. According to Winter, compartmenting was never used systematically in polygonal walls. See however Bogdani 2006, 51, fig. 7, where a series of cross-walls can be seen crossing a polygonal curtain at Çuka e Aitoit.

term was used in theatre to describe movable, wooden props. The third-century author Philo of Byzantion (*Parasceuastica et poliorcetica* 1.15.36) used the term in fortress-building, to describe planking used as a wall-walk or on stretches between the wall-walks and towers. In times of danger this planking could be removed to isolate the towers and to hinder the enemy movements on curtains.[23]

Typically a curtain wall consisted of the actual wall topped with thinner breastworks or a parapet over the outer side, protecting the wall-walk or *parodos* on which the guards patrolled. Ideally the parodos should have allowed two guards with their kit to pass each other unhindered. Most commonly the curtain walls were between 2.5 and 3.5 m thick, while the parapet was usually one block or some 0.6 to 0.75 m thick. That would have left an area of some 1.75 to 2.90 m as the width of the wall-walk.[24]

At Agios Donatos the thickness of the curtain walls varies between 1.9 and 3.2 m. The narrowest walls are located near the eastern edge of the enceinte, while towards the west they gradually become thicker. If we assume some 0.6 m as the thickness of the parapet, there would have been space for wall-walks with clearances of some 1.7 to 2.6 m. Clearly this would not have worked in this corner, however, as the thickness of the walls here is only around 1 m, leaving a mere 0.4-0.5 m wide stretch of the wall to walk on. The solution would have been to build the missing 1 m thickness of the wall-walk on wooden scaffolding or *ikria* anchored into the wall. The joists could have been built into the wall, leaving the ground floor in the corner free of any obstructions.[25] (Fig. 10.)

But why reduce the thickness of the curtain in this corner in the first place, as a thinner wall would have been more vulnerable and thus potentially dangerous for the inhabitants? The obvious answer is the need to protect the south-eastern gateway, located some 22 m to the west. The thin walls in the corner would only have made sense if they were pierced with arrow slits, perhaps up to two but at least one slit per side. Above these ground-floor slits another defensive feature, the parapet, would have added to the defensive value of the corner. The parapet would have consisted of either a series of crenellations, or more likely an *epalxis*, a high screen wall pierced by a series of apertures at regular intervals.[26] This would have allowed more defensive fire to be directed at the approaches to the gate than would have been the case if the corner was built using normal curtain thickness. No slits could have been built through a two-meter thick wall; and even if that had been possible, the fields of fire from such huge and thus excessively deep apertures would have been severely restricted.

The loose rubble fill in the corner gives some indication that the ground level inside the jog would have been located at least some 3 to 4 m higher than the ground level on the outside. Most of the perimeter of Agios Donatos is built similarly, along a slope with the inner face sitting at least a couple of meters above the lowest course of the outer

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[23] Karlsson 1996, 88-89; Lawrence 1979, 347-348; Winter 1971, 143- 146. Typically the ikria consisted of stone buttresses or spurs built into the back of the curtain wall. The wooden parodos then stretched between the spurs. The first safely dated example can be found at Gela in Sicily, dated to around 282-280 BC.

[24] Lawrence 1979, 345; Winter 1971, 127.

[25] As the corner is so small in size, there was no need for stone buttresses to support the structure. Also, the scaffolding would not have been removable, but a permanent fixture.

[26] Winter 1971, 139-140. As no evidence of either kind of parapets on site was found, it is not certain which of the two was used at Agios Donatos. I personally am inclined to think that a continuous screen wall would have been the more likely choice.

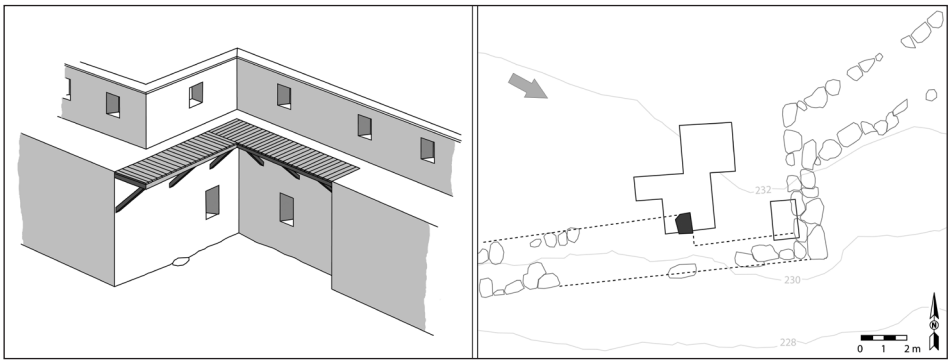

Fig. 10. The corner and the nearby curtains as an open space. The ikria would have covered the stretch with narrower wall in the corner. Also included in the drawing are the trenches excavated in 2008. The large block found is marked with a dark colour.

wall. Thus it was necessary to build only the outer face fairly high, as the inside face already sat higher up the slope. This was an ingenious way of saving labour and at the same time adding to the total height of the defenses.

Let us assume that the average height of the curtains of Agios Donatos would have been some 6 m. On the uphill side the wall-walk could have been located at the height of 4 m and thus at least 6 to 7 m above the outer ground level. The wall-walk would have been protected by a parapet which most likely would have been a continuous screen wall approximately 2 m high. Because the slope still descended fairly steeply even below the outer wall, it would not have been difficult for the curtains to reach heights of more than 10 m, a height safe from escalade attempts using ladders.[27] Using this estimate, there would have been ample unobstructed room in the corner, as the lowest supports of the scaffolding would have been located well above a man's head and the plank walkway at least some 4 m above the floor. The lower-storey slits would have been located at an approximate height of 4 to 5 m from the outer ground level, and thus they would have been relatively safe (Fig. 10).

An almost exactly matching parallel to such a construction can be found in Kydna, a Lycian fortress dated to the 280s BC. The fortress has very thin curtains, only 0.95-1.25 m thick, all around the enceinte. The *parodos* on top of the curtains was very narrow, only 72 to 90 cm wide, mostly constructed on cantilevered paving stones which can still be seen protruding some 20-30 cm from the inside wall.[28] However, in the northern sector, close to the main gate and tower 5, the wall-walk was built exclusively on planking resting on wooden scaffolding. Besides several towers the enceinte has five bastions, which consist of only three narrow walls and no roof. Most importantly, these bastions have apertures also in their lower levels, across the one-meter thick wall. The bastions protrude approximately 4.2 to 5.1 m, enabling the placement of a single slit per side. The arrow slits are 64-80 cm wide in the inside, whereas on the outside face the width of the aperture is ca. 20 cm.[29]

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[27] Kern 1999, 12.
[28] Adam 1982, 123-124; 165.
[29] Bastions 3, 7, 9, 11 and 13 lack inside walls; they are completely open to the inside. See Adam 1982, 69, fig. 34; 158, fig. 99; 159-161.

Another parallel for the use of thin curtains and towers with ground-storey chambers is the smaller fort at Gortys in the Peloponnese. The curtain walls at the western end are thin, only around 1.25 m, which would have necessitated the use of planking as the wall-walk.[30]

Much later the idea of multi-storey curtain walls was used to a great extent at Side and Perge, both of which are considerably later structures than Agios Donatos.[31] In Side and Perge the multi-storey curtains were not limited only to bastions or similar short stretches, but instead the curtains themselves were galleried. The curtain wall was thick and solid up to a height of ca. 3-4 m, then a row of vaulted galleries enabled the placement of small catapults, on top of which the *parodos* was located.[32]

The second possible interpretation of the features in the corner is a somewhat tower-like enclosed structure, essentially a tower which would not have protruded from the curtain wall except on the flank side. The large block found would in this case indicate where the western wall of the chamber was located (Fig. 11).

Using the measurements at hand, it is possible to hypothesize a square chamber in the corner. If the walls were approximately 1.0-1.1 m thick on all four sides, both the width and length of the chamber would have been 4.12 m, yielding a total floor area of 17 m². A second floor of similar proportions would probably have had a wooden floor on the wall-walk level. If this was the case, the upper floor would cover the entire chamber rather than just skirting around the walls like a mere *ikria*. Such an enclosed space would have enabled the defenders to use it more effectively, as a sort of guard-house. Moreover, such a space protected from the elements would even have made it possible to place a few catapults of the smallest caliber within.

It is obviously impossible to say whether there were any additional floors on top of the two considered here, but I would think that this tower's height did not exceed the height of the adjacent curtain walls and their *parodoi*.

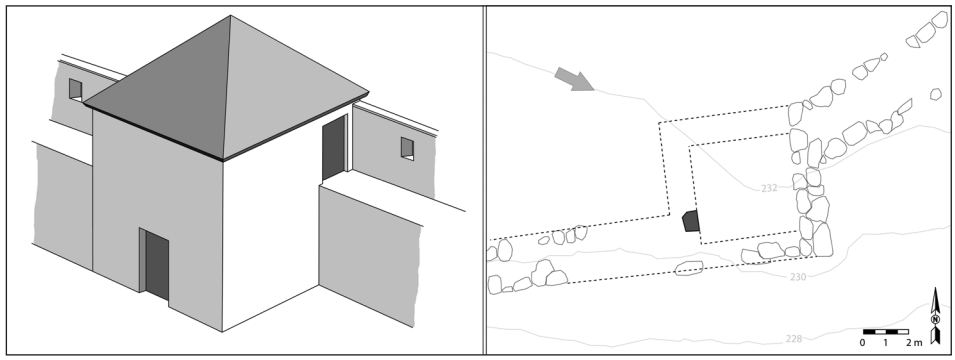

Fig. 11. The reconstruction with a 17 m² chamber and an upper storey of similar proportions. The large block is marked with dark colour. The roof shape and the location of doors are hypothetical. Drawing not to scale.

[30] Martin 1947, 116, 147. Martin dated the small fort to the second half of the third century BC.

[31] Karlsson 1996, 90, note 16; McNicoll 1997, 127-131, 143-148; Winter 1971, 142. Both Side and Perge were products of the second and first centuries BC.

[32] Adam 1982, 39; 40, fig. 11; 41, fig. 13; Karlsson 1996, 90.

Kioteza

Some 970 m south-southeast of Agios Donatos a neighbouring fortress, Kioteza, is built on a prominent limestone peak on the same foothills of the Paramythia range as Agios Donatos. However, Kioteza is much more defensible than the latter, being situated on a lone peak at some 350-370 masl, circa 220 m higher than Agios Donatos. Steep unassailable cliffs protect the western side of the fort, while approach is possible from the eastern, mountain side.

According to Dakaris the fortified area of Kioteza covers some 0.4 ha, 250 to 300 m in circumference, with fortifications on the northeastern side, while very steep cliffs protect all other sides, requiring no walling. The fortifications consist of a wall approximately 140 m in length and a gateway, adjacent to which the wall still stands to a height of 2.5 m. The wall he describes as being isodomic, i.e. built in ashlar masonry.[33]

In 2006 the fortifications were cleared of vegetation, whereafter we produced the first detailed topographical map of the site, revealing new details of the walls (Fig. 12). The fortress is in an extremely deteriorated state. Throughout the enceinte a single layer of stones is all that is left of the walls, except in two distinct places where up to five courses of masonry remain (Fig. 13). When the wall remains and the fallen blocks lower down on the slopes were examined, it became apparent that the prevailing masonry in the fort was in fact irregular polygonal instead of ashlar as purported by Dakaris. The blocks were probably quarried at the site, using whatever shape of rock happened to be extracted.

In the eastern corner of the enceinte stands a ruined tower, which Dakaris does not mention at all in his description.[34] The northwestern corner is still standing up to 2 m high, consisting of large squarish blocks. The blocks in the northern corner have faintly visible traces of vertical drafting in their exterior corners[35] (Fig. 14). From the tower the curtain wall runs in a northwesterly course for 20 m, terminating in a crosswise wall running south-southwest to north-northeast. This eastern curtain wall is very badly preserved, with only a fraction of the inside face visible. The crosswise wall is also in a very poor state, although up to four masonry courses are visible. It may indicate the more likely site of a gateway.

Northwest of the cross-wall there is an obscure stretch of some 8 m with tumbled blocks and a short stretch of very steep, uneven bedrock visible on the surface. Northwest of this, the outer wall can finally be traced well enough as the blocks have remained *in situ*. After running in a northwesterly course for some 5 m, the wall gently curves towards the west, running uphill for some 17 m until it comes across a huge boulder. This feature appears natural, consisting of several huge rocks standing in a precarious pile measuring some 6 x 3 m. However, it seems that the builders utilized this formation as a part of the curtain. The cliff here, let alone further uphill, is extremely steep, thus requiring no formidable barrier. The inside face of this western curtain is well preserved near the bend, with some 11 m preserved *in situ*.

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[33] Dakaris 1972, 138.

[34] Dakaris 1972, 138. Perhaps he thought that this structure was the gateway?

[35] Hammond 1967, 715; Lawrence 1979, 241-243. Vertical drafting was frequently used in the outer corners of towers and walls: each corner block had a sharp, exact corner with some 5-10 cm of both faces cut smooth, yet the rest of the block remained bulging and uneven. Such a feature was most likely utilized as a guide, to help the builders maintain the verticality of the walls during construction. In Epirus the use of drafted corners is particularly common.

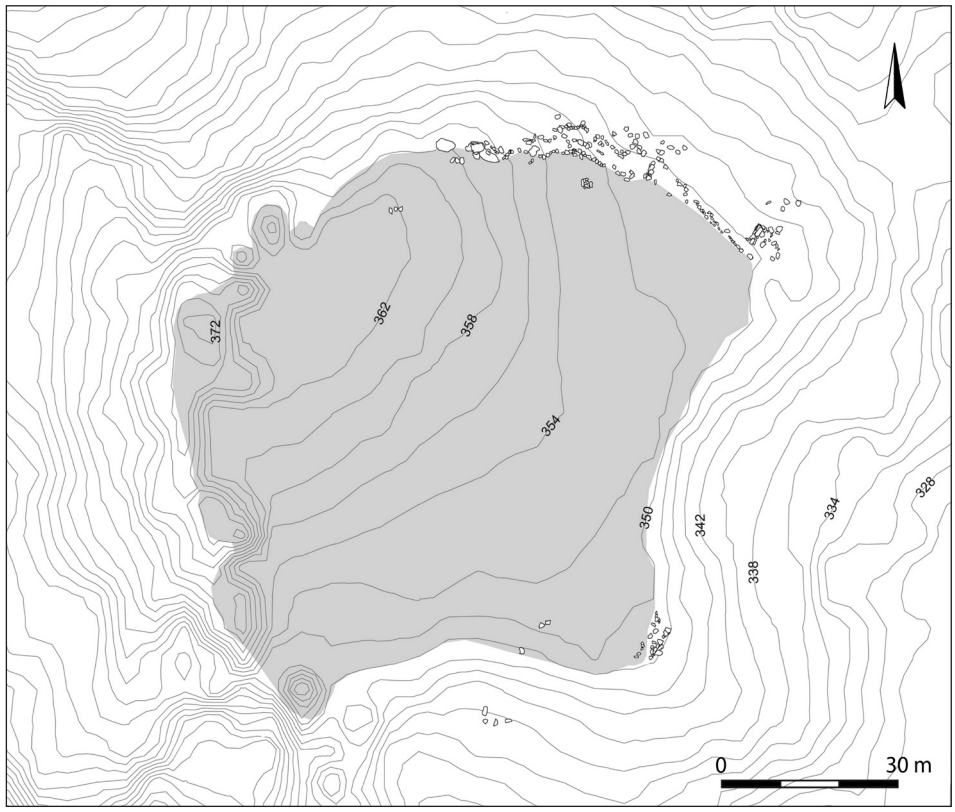

Fig. 12. Topographical map of Kioteza by Jari and Tuula Okkonen 2006. Marked are the hilltop (shaded area) and the possible remains of walls on site.

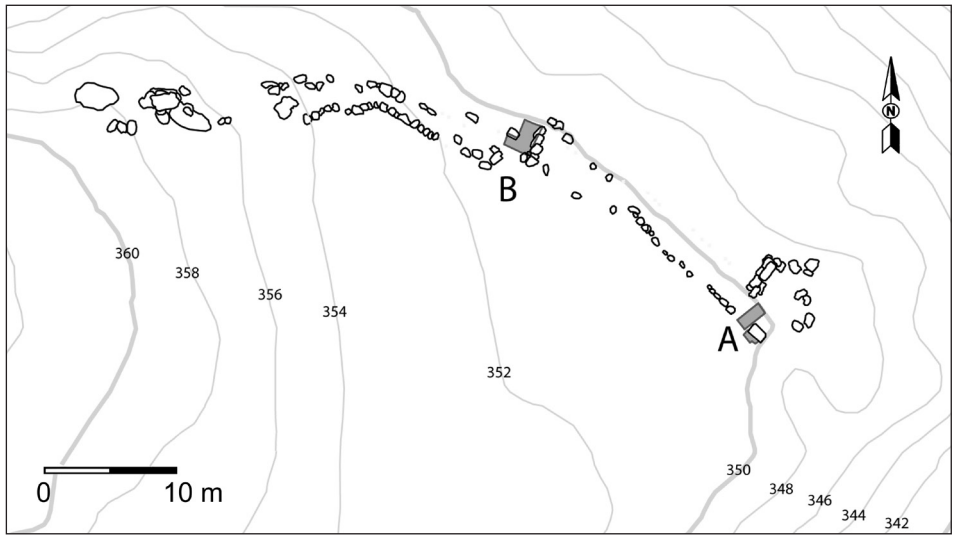

Fig. 13. Map showing the present condition of the fortifications at Kioteza together with trenches A and B. Contours at 2 m. After Okkonen 2006.

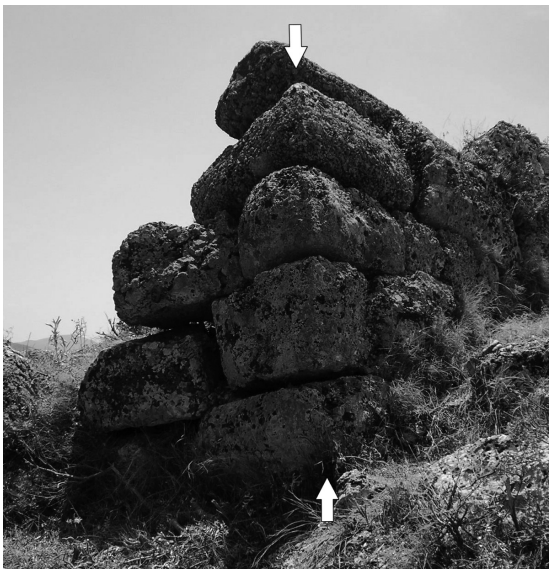

Fig. 14. The exterior corner of the tower, seen from the north. Note the faintly visible traces of drafting along the vertical edges of the blocks, indicated by arrows.

The fortifications are built on the northeastern side of the hill. There the approach is easiest due to a wide but low saddle connecting the hillock to the other foothills of the Paramythia range. The walls are built just above the 350 m contour line in the northeastern sector, where the lowest and the most even plateau on site is situated. This easily habitable plateau is covered with soil and vegetation, whereas the rising landscape towards the west and west-southwest consists solely of bare, uneven bedrock reaching at most a height of up to 372 to 374 masl. The southern hillside is steep, but not as steep as the others, probably allowing ascent from that side. To counter that possibility, there might have been a wall on the southern side also, but currently there are no clear indications of it. Only one single polygonal block was noticed on this side of the hill. Perhaps Dakaris included this

Fig. 15. The tower and trench A seen from within the fortress towards northeast. The outer face of the curtain can be seen to the left and the best-preserved exterior corner of the tower is visible in the upper part of the picture. The large block in the foreground is from the original southern wall of the tower, fallen on its side. The stone filling of the base can be seen in the trench.

Fig. 16. The gateway seen from the outside, towards south-southeast. The better preserved eastern wall is on the left, whereas the western wall consists of only one fallen block, whose original position is indicated by a dashed line. The gate corridor in the middle is blocked by loose stones probably originating from the filling of the adjacent curtains.

possible southern wall in his description. He claims that the fortifications cover a stretch of 140 m, whereas we were only able to find some 60 m of fortifications on site.[36]

Two trenches were opened in the fort: trench B next to the spot where a gateway might have been located, and trench A close to the best-preserved structural feature in the fort, the outer corner of the tower (see Fig. 13). After removing the topsoil in trench A we hit a layer of roughly head-sized rocks with somewhat clayey brownish soil in between. One layer was removed in case it was just some sort of collapse layer, but even the following layer was still the same, although now there were more stones and less soil. Adjacent to the trench a large stone was lying at a strange angle, indicating that it had fallen over at some time. When excavated, it was possible to find the even stretch of bedrock where the stone had originally lain. In its original position the block probably formed the corner of the doorway and the back wall of the tower (Fig. 15).

Thus, the tower seems to have had a solid foundation, filled with rubble and compacted earth. Probably the fill was not much higher than that which is visible today. The base of the tower at Kioteza greatly resembles the structure found in the straight-angle corner at Agios Donatos.

In trench B, on the other hand, it was possible to excavate deeper, on the uphill side up to 70 cm, whereas on the downhill side the bedrock was quickly reached. The fortifications are badly preserved, but they still consist of up to four stone courses on the eastern side of the probable gate (Fig. 16). On the western side there were no preserved

[36] See Fig. 12 (general map). On the southern side, on the edge of the darker-coloured hilltop, there is indeed room for an additional 80 m wall, incidentally on the 350 masl contour line. However, as stated, we were unable to find any substantial remains there.

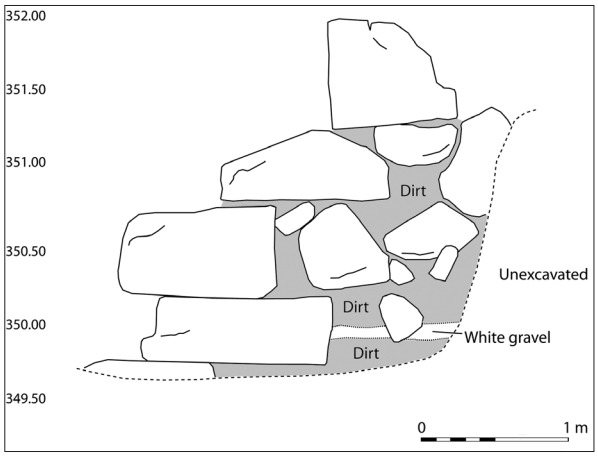

Fig. 17. Elevation of the badly destroyed eastern wall of the gate, seen from the east.

wall stones visible except for one, which had fallen on its façade side when material from above had pushed it over. However, it was possible to see where the block had once stood. The bedrock on site had been leveled to receive the block, which most likely originally formed the corner of the gate corridor and the outer face of the curtain. The trench yielded several irregular loose stones of larger than head caliber, tumbled from above, as well as a small number of very badly corroded large iron nails and a few rounded pottery sherds. No datable material was found. The soil was of the same brownish clayey substance as could be seen all over the lower terrace as well as in trench A.

One noteworthy feature was encountered: a thin layer of whitish gravel layer at 350.00 masl. The brownish clayey soil was discernible both above and below the gravel layer (Fig. 17). The gravel was rounded, white limestone and the layer was fairly compact. Most likely it represents the original road surface in the gateway. If not, it could also have been the filling of the nearby curtains, fallen here when the walls collapsed.

Proposed reconstruction of Kioteza

Only slight traces of the fortifications at Kioteza are preserved today, with most of the blocks of the walls fallen downhill and disappeared. The archaeological examination confirmed some theories of structural features. The following is my proposed reconstruction of the enceinte (Fig. 18).

In the southeastern corner stood a square tower measuring 6 x 6 m, protruding some 3 m from the adjacent curtain. To the south and southeast of the tower the natural cliffs were so steep and high that no walls were necessary. The tower and especially its corners were built of more regular, quadrangular blocks than were used in other parts of the enceinte. The tower had a chamber at the inside ground level, while the base of the tower consisted of a massive outer wall and a loose rubble fill as a floor foundation. This would have left the chamber floor some 2 m higher than the ground level outside the tower, much in the same manner as is visible in the straight-angle corner of Agios Donatos. There is no indication as to the thickness of the walls, but drawing on analogy with Agios Donatos the walls of the chamber could have been ca. 1.0-1.1 m thick. Using those dimensions the chamber would have had a floor area of approximately 24-25 m². It is also possible that this structure was an open-topped bastion, resembling the ones found in Kydna.

Starting from the tower, the eastern half of the curtain wall, some 3.1 m thick, ran some 20 m towards the northwest, more or less following the 350 masl contour line. The scanty remains suggest that the curtains were built of polygonal blocks. In the

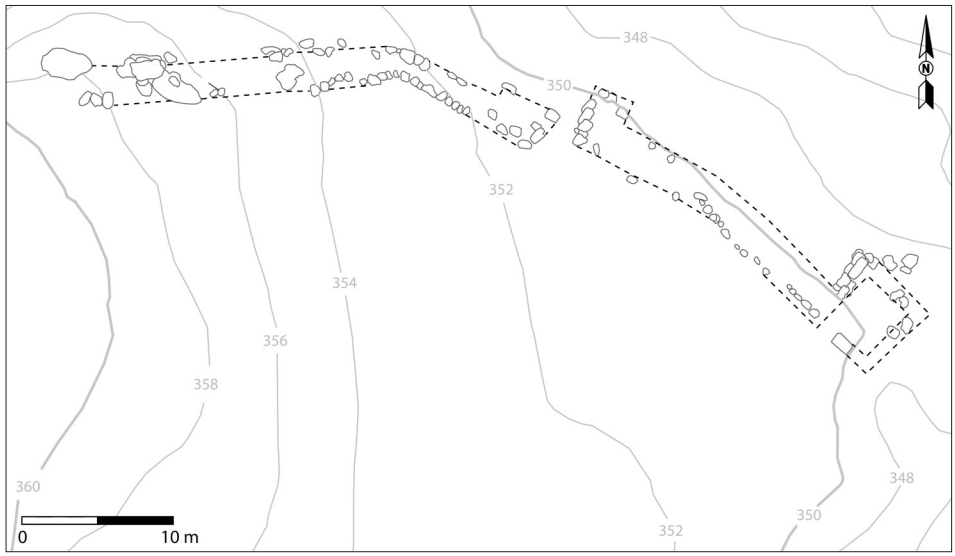

Fig. 18. The reconstruction proposal with the trace of the walls drawn in dashed line.

northwestern end, the last 3 m of the curtain formed a protruding bastion, 4 m thick, guarding the main gate of the fort. After the gateway the western curtain continued to run in a northwesterly direction for ten more meters, after which it gently turned towards the west. The first 4.5 m stretch of the curtain immediately adjacent to the gate was 3.1 m thick, forming a bastion guarding the right side of the gate.[37] After the thick section of the wall the width of the curtain narrowed down to 2.1 m.

The gateway of Kioteza was some 1.15-1.20 m wide, which would most likely have allowed a single-leaved gate. The 2 m long gate corridor was splayed, being narrower on the outside and widening slightly towards the interior end.[38] Such a gate arrangement is relatively common, and the closest clear parallels are found in Kalivo, located near Butrint in Albania.[39] On the left side, the curtain wall protruded 2 m further than the right side wall, an unusual but not totally unheard-of arrangement.[40] Usually the gate was situated in such a way that the protective protruding wall was built on its right side, so that the enemy approaching the gate would have been subjected to the defenders' fire on their unshielded right-hand side.[41] Perhaps in Kioteza the approach to the gate led past the western bastion, enabling the defenders to shoot not only at the enemy's right and left sides but also at their faces when approaching the gate.

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[37] Similar thickening of wall on the left side of the gateway is visible in the northwestern gate (Gate A) of the large enceinte of Gortys in Arcadia, although there the thickening was added on the inside of the curtain. In many respects the gate bears resemblance to the northeastern gate of Gortys, although on a greatly reduced scale. See Martin 1947, 99, 101, n. 4.

[38] Exact dimensions of the gate corridor are obviously impossible to ascertain due to the present state of the ruin, and obtaining them would require a larger-scale excavation of the site.

[39] In Kalivo a splayed gateway, 1.6 m wide on the outside and 2.3 m on the inside, also has internal bastions on both sides of the gate. The curtain wall has a normal thickness of 3.0 m, but near the gate its thickness increases to 4.5 m, thus elongating the gate corridor by some 1.5 m. See Crowson 2004, 1 and fig. 5.2.

[40] See for instance the "Scaean Gate" in Butrint.

[41] Winter 1971, 210.

Questions of dating

The two trenches excavated in 2008 yielded no datable material which could help in dating the fortifications at Kioteza. Looking at the walls themselves, the task of dating is no less challenging. Due to the extremely poor state of preservation of Kioteza, it is difficult to say with absolute certainty which kind of masonry prevailed in its construction. Some hints can be obtained by looking at the remains today. Dakaris described the masonry in the fort as *isodomic* or ashlar.[42] Most likely he came to this conclusion by looking at the best preserved portion of the enceinte, the northwestern corner of the tower. There the blocks indeed are rectangular, reminiscent of ashlar. If so, Kioteza would be earlier than Agios Donatos.[43]

However, the masonry seems to be different elsewhere along the enceinte. Those fallen curtain blocks which could be seen around the area were predominantly irregular, polygonal, rather than ashlar. In the eastern wall of the gateway, the second spot where the wall still stands to some height, the masonry is polygonal with traces of, now disappeared, triangular plugs having been located between the larger blocks. This clearly resembles the masonry found in the inner faces of the tower walls at Agios Donatos. On the other hand, the corner of the tower was built of large, somewhat quadrangular blocks to increase the stability of the structure, much in the same manner as is seen at the indent of Agios Donatos. In both locations the corners are also drafted, most likely to enable the builders to check the verticality of walls with a plumb line during construction.[44]

In light of the evidence its has become apparent that Agios Donatos' walls were built at some time between the last decades of the fourth century and circa 250 BC, most likely during the first quarter of the third century, i.e. the time of Pyrrhus. The archaeological record at Agios Donatos is affected by the later Roman occupation of the site, during which the tower was re-used in some way, and in the process it was mostly cleaned of older material. Not all of the material was cleaned out, however, as the lowermost layer was built upon by the Romans. Underneath the Roman floor, the dark soil between the crags of bedrock contained no Roman finds. Elsewhere in the fortress the preservation of older material was more random, as material has flowed downhill whenever the fortifications collapsed.

The eastern jog of the indented trace bears evidence of some structure closely resembling the tower of the fortress, yet it cannot be considered a pure tower as it only protrudes on one side from the enceinte. Possibly the corner was built with a multi-storey curtain wall, or perhaps the corner did indeed have a somewhat tower-like structure, an enclosed square chamber guarding the approach to the southern gate.

Kioteza, on the other hand, is more difficult to interpret as the site only bears the scantiest of traces of fortifications or other occupation. The site is clearly man-made, with fortifications protecting the easiest approaches. Dakaris suggested that the fortifications were slightly older than those of Agios Donatos because of the ashlar masonry. However, the gate yields traces of polygonal masonry highly reminiscent of the masonry used in

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[42] Dakaris 1972, 138.

[43] Hammond 1967, 711-716. According to Hammond the traditional way of dating polygonal walls earlier than ashlar walls does not seem to apply in Epirus. On the contrary, in Epirus ashlar walls are earlier than polygonal ones, many of which can be dated to the fourth and third centuries BC.

[44] Hammond (1967, 584) noted that the use of drafting was particularly common in Epirus. He was inclined to think that the use of drafting was characteristic of the last stages of Pyrrhus' reign, i.e. the 280s-270s BC.

the well-preserved inner faces of the tower walls in Agios Donatos. Also, the structure in the foundations of the tower of Kioteza is similar to that in the straight-angle jog of Agios Donatos: the corners are built of large, slightly quadrangular blocks with drafted corners, behind which is a filling of loose stone rubble through which the rainwater can quickly seep.

Of course, such stylistic features are not trustworthy means of dating the two forts. It was possible to date Agios Donatos by using the scanty archaeological evidence found on site. Kioteza is still more problematic, but nevertheless I would suggest that the fort should be considered roughly contemporaneous with Agios Donatos, that is, dated to the last decades of the fourth down to the mid-third century BC. Why the two forts were built so close to each other still remains unclear.

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