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PAAVO ROOS

The stadion of Labraunda

Abstract*
The stadion of Labraunda is situated south-west of the sanctuary, above the Sacred Way down to Mylasa. As the terrain is not well suited for a stadion the ends had to be elongated by the addition of built-up 'towers'; nevertheless the racecourse was rather short at 172 metres. It is situated on a slight slope, and in the middle of the northern side there are cuttings in the rock that may have been used for spectators; otherwise there are no provisions for such. There is a line of starting blocks at either end, more or less in their original place, although few of the blocks are exactly *in situ* and some of them are missing. They are large blocks and have one single continuous groove for the toes of the runner and square holes that separate the lanes. Evidently the number of lanes was 14, and each line was 1.38 m wide. There is nothing that can give an exact date of the establishment, but the outline of the wall structure as well as the historical evidence suggest the Hecatomnid period and the festival programme of Mausolus in the middle of the 4th century BC.

Keywords: Labraunda, Caria, stadion, starting block, Mausolus

Introduction

The stadion of Labraunda is a roughly level area, situated about 200 m south-west of the temple terrace as the crow flies (*Figs. 1–3*).[1] During the first excavation campaigns (1948–1953) the path from the village and the sacred road to the site crossed the stadion near its western end, and so the excavators walked across it without discovering its true nature. Only in 1960, during the cleaning campaign, did the architect Olle Joneborg realize that it was a racecourse with a rock-cut spectators' area along part of its side (*Fig. 2*).[2] The nature of the 'towers' with the starting blocks with a single groove was not completely understood until 1972[3] – it must be noted that up to then no starting blocks with a single groove had ever been found in a stadion anywhere. The only blocks with a single groove were those of the gymnasion in Delphi, and there the groove was interrupted rather than a continuous one.[4] In the more than 40 years that have passed since 1972, the establishment has been the object of study several times. No excavation has, however, been made in the stadion, but such an undertaking would probably not add much to our knowledge, even if an excavation of the west tower yielded finds of some kind. Nevertheless, the starting blocks of the east tower could have been turned round and perhaps another block added to the line (see *Fig. 47*) instead of a mere scratching of the surface so far performed to ascertain the existence of a groove or post-hole.

General outline

The stadion consists of a rough field aligned in an almost E-W direction, 189 m long with the aid of the built-up 'towers' at either end (*Fig. 1*). It is situated about 20 m lower than the temple terrace and divided from it by rather rough terrain. The eastern end is 2 m higher than the western. The field

* I would like to express my thanks to the publication committee of Labraunda that let me undertake the publication of the stadion after Olle Joneborg's discovery of it. Measurements and information were kindly provided by Thomas Thieme and Olivier Henry, members of the subsequent excavation team. With the exception of the area plan *Fig. 1* and the original of Joneborg's stadion plan *Fig. 2* all drawings are made by me; all photographs are also taken by me.

[1] Not to the north and above the temple as is erroneously given in Bean 1971, 66.
[2] *Labraunda* I:2, 20.
[3] First mentioned in Roos 1977.
[4] Jannoray 1953, pl. VII.

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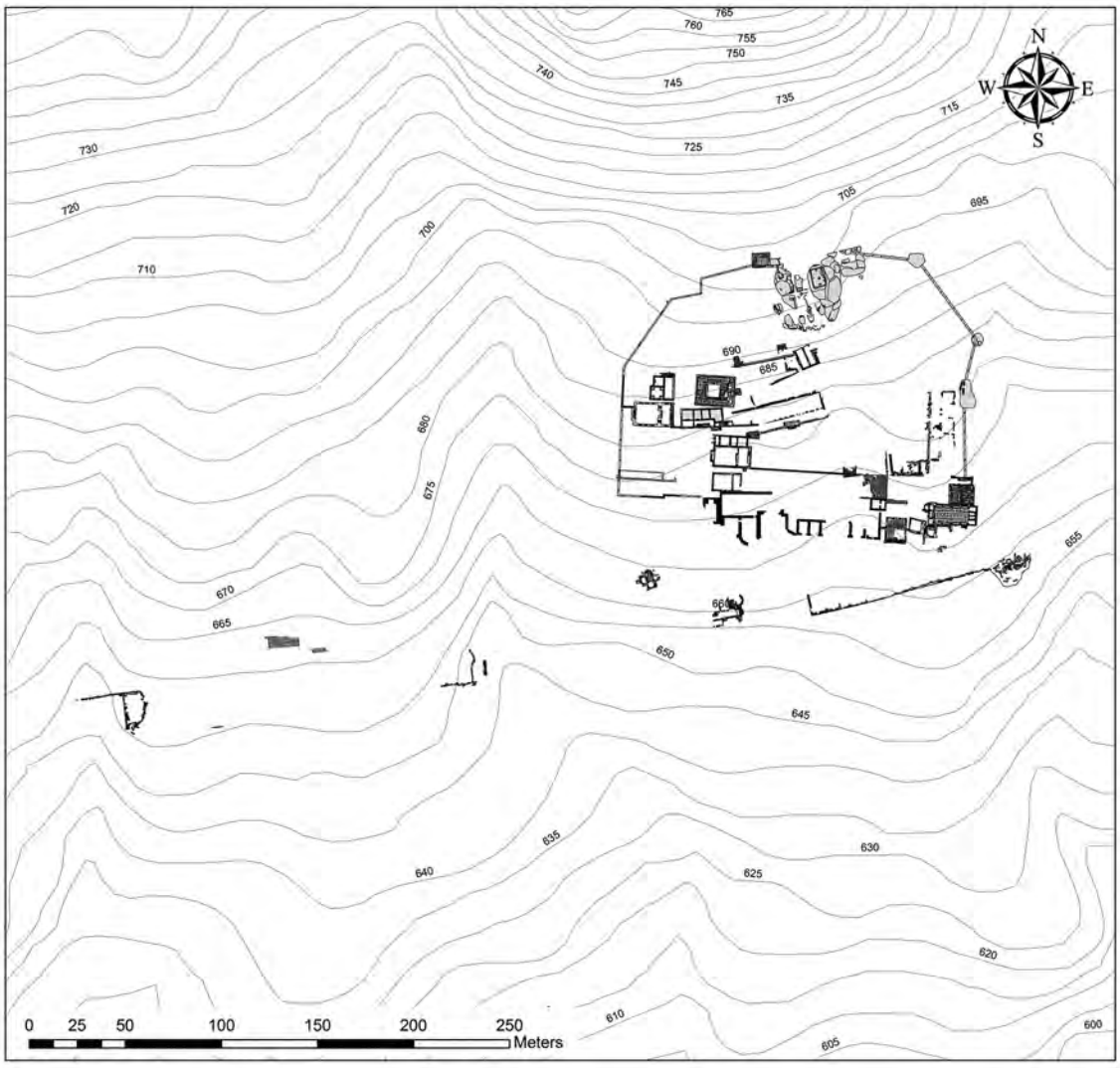

Fig. 1. Plan of the sanctuary by Axel Frejman.

is situated higher than the surrounding ground at all parts except the eastern part of the north side, where the higher ground slopes down to it. Part of this is rock and has been used for various purposes (see below). The width of the field is now about 34 m, but it is unclear how wide it was originally. Its western part is now a pasture, and the eastern part, with the exception of the easternmost end, forms the village cemetery. In some places the course is interrupted by a wooden or stone fence (*Fig. 35*), trees grow on it, and nowhere a complete view of the field can be obtained. Thus it is understandable that the identification of the site as an ancient stadion was not immediately apparent.

On the northern side the field is divided from the surrounding ground only near the western end, where the field is higher; on the southern side a part of the centre of the border is marked by a line of big stones (*Fig. 5*).

Generally stadia are situated in a horseshoe-shaped valley such as at Magnesia on the Maeander or Philadelphia, or on flat ground with a built-up structure around it, as at Aphrodisias or Perge. But there are also establishments situated along a slope, with an asymmetrical ground level in cross section. The stadion at Delphi is the best known example of this,[5] and in Asia Minor as well as Labraunda there are also the stadia at Aigai, Arycanda, Cibyra, Blaundos, and possibly Orthosia, although the state of preservation does not always allow a check of the issue[6] This may lead to the construction

[5] Aupert 1979, 172.

[6] Hardly any of them is properly studied. For Arycanda see Bean 1978, 138; Bayburtluoğlu 1980, 27f.; for Blaundos see *Blaundos* 125f. In Orthosia the identification as a stadion is uncertain and the establishment may be an agora instead, see Debord & Varinlioğlu 2010, 271–297.

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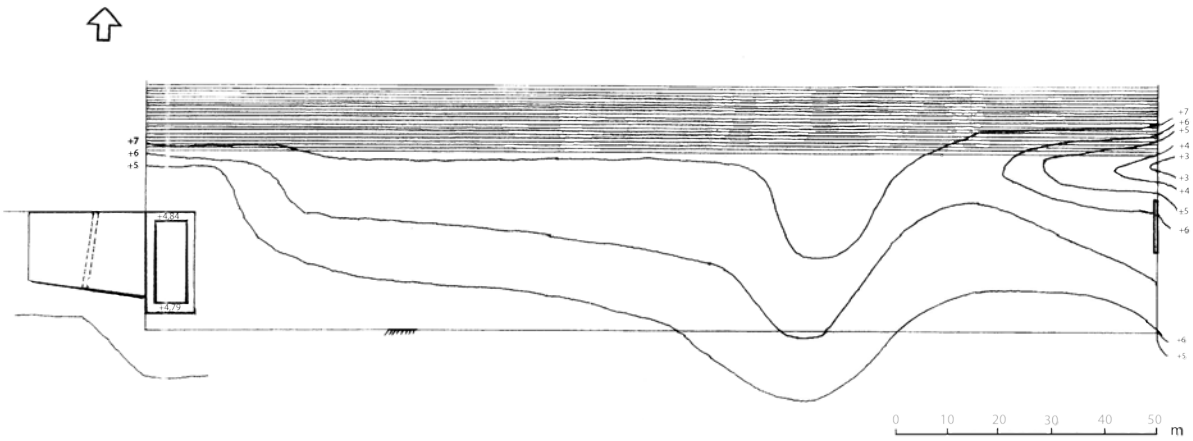

Fig. 2. Olle Joneborg's 1960 plan of the stadion. The dotted lines are added to show the position of the tunnel.

of vaulted substructures under the lower side as in Aigai and possibly Orthosia. As for the tiers of seats for spectators they may be entirely lacking on the lower side or be fewer on that side than on the upper. The number of rows varies greatly in different establishments, and of course there are many stadia where no rows can be listed. In Labraunda it can be said with certainty that there were none on the south side unless they were built up, whereas the sloping rock in the middle of the north side provided room for spectators (*Figs. 6–7*).

The racecourse

The field is, as was stated above, 189 m long and 34 m wide. The area used for running is of course less. As for the width, the arrangement of the starting blocks shows that the area used by the runners was barely 20 m wide, which means that there was a considerable space between the running lanes and the sides of the course, evidently more on the northern side. As for the length of the course there are starting blocks at both

Fig. 3. View of the stadion area seen from the sanctuary (i.e. from NE).

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Fig. 4. The racecourse from the west.

Fig. 5. The racecourse from the south.

ends with the original distance of 172 m between them, with a further 8 m beyond the east end of the course and 9 m beyond at the west (see below).[7]

Cuttings along the north side

Normally a stadion has, for the convenience of the spectators, either its location in a valley with the sloping sides serving as places for the spectators, more or less artificially created slopes, or, especially in the Roman period, a built-up construction around the course or at least on one side. But there are also examples of sloping rock forming one or both sides of the stadion, where more or less regular cuttings have been made in the rock. Of course there is always the question whether that was the main object of the cutting: it may also have been made simply for quarrying, and if so the blocks obtained were probably used for the stadion itself.[8] We find such establishments with rock cuttings at Alinda and the hippodrome at Anazarbos.[9] At Alinda there are regular cuttings on both sides of the stadion, about 0.75 m wide and 0.39 m high, which would give a sitting spectator as much room as a normal marble seat in a stadion or theatre. In the hippodrome of Anazarbos there is an area on the south side with rock-cut ledges 0.50 m wide and 0.45 m high, but there are also others which are only 0.15 m wide. At Ephesus there is an area of several rock-cut ledges on the south side of the stadion, but their width is only 0.20–0.30 m and the height even less, so it would be difficult to use it for the seating (or standing) of spectators.[10] At the older stadion at Isthmia, which does not have other seats, steps cut in the rock may have served as seats.[11] Similarly the stadion at Nemea, which has a small amount of formal seating, has several ledges forming rows of seats cut into the bedrock in the sphendone.[12] In some case there is evidence that there was a superstructure with spectators' seats as at Alinda.[13]

In Labraunda there is a sloping rock on the middle of the northern side, where ledges have been cut as for spectators (*Figs. 6–7*). About a dozen ledges can be counted, about 0.20–0.25 m high and about twice as wide.[14] Their original extent is not clear but they may be observed for a length of 27 m at the most. It may be noted that there is a space of 14 m between the lowest preserved ledge and the blocks marking the north side of the racecourse.

Fig. 6. Cuttings along the slope from the south.

[7] That means that it is one of the shortest racecourses, slightly below the average length, see Zschietzschmann 1960, 7; Romano 1981, 265.
[8] See Hellström 1991, 248; Roos 1977, 24; 2011, 264.
[9] See Roos 1994, 184, figs. 6–7; Ruggendorfer 2011, 219, Abb. 7.
[10] See Roos 2012, 53, fig. 4.
[11] *Isthmia* II, 48: "At the curved end, however, where the rocky ground rose steeply toward the west, there is a series of four very irregular steps, too narrow to have served as seats; they were probably intended primarily as stairs, but may also have accommodated spectators standing up."
[12] Miller 2001, 25f., figs. 21, 41–42.
[13] See the representation of the stadion visible in the 'Panorama d'Alinda' by Jean-Nicolas Huyot from about 1820 reproduced in Robert & Robert 1983, 7, fig. 5; Ruggendorfer 2011, 212f. Nothing of it is visible now.
[14] See Roos 2011, 265, fig. 11.

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Fig. 7. Cuttings along the slope from the east.

The towers

Since the area is not quite long enough for a racecourse due to the rough terrain, it had to be built up with tower-like bastions at the ends so that the level area could accommodate the 600 Greek feet of a normal stadion.[15] The height varies considerably between the ends and also between the three sides of the same end. The difference is moreover enhanced by the fact that the continuation of the west tower is not the ground level itself but a track much more level with the racecourse called *köprü* (the bridge) by the locals.

Fig. 9. The east tower from NE.

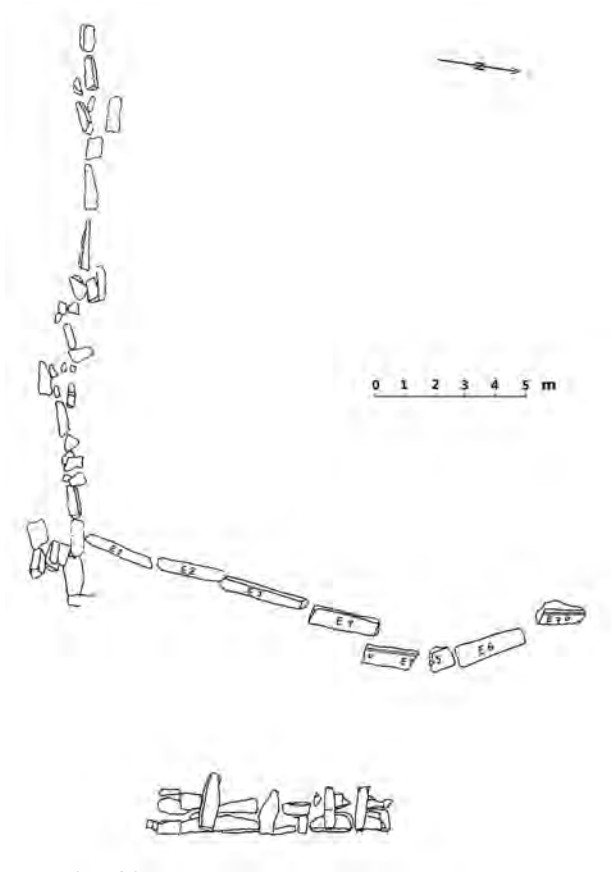

Fig. 8. Plan of the east tower.

EAST TOWER

The remains of the eastern end of the stadion hardly deserve the denomination tower compared with the west tower (*Fig. 8*). Of its northern side nothing is visible (*Fig. 47*), and the southern side is hardly more than a single line of rather irregular blocks (*Fig. 9*). Only on the eastern side part of a wall is preserved (*Figs. 9–11*). Its length is about 8 m, rather less than half of what the original length can be supposed to have been. It reaches about 2.50 m from the original south-eastern corner. It consists of isodomic ashlar blocks with a maximum height of seven courses. The courses are about 0.50 m high and consist of headers and stretchers, with a considerable variation in size. Some of the stretchers are two m or even more, whereas the headers measure only 0.40 m or less. Many blocks are lying on the ground below the wall, especially near the corner (*Fig. 12*). Some of them measure 2 x 0.50 x 0.56 m or even more.

The line of blocks forming the southern side is much less regular. It is about 20 m long, which means that it includes a preserved part of the south border of the racecourse itself. It does not quite reach what was the south-east corner of the

[15] Cf. the similar feature in the north end of the stadion at Sicyon, Skalet 1928, fig. 16; Harris 1960, 28, pl. IV, *a*; Romano 1981, 184f., figs. 141–146.

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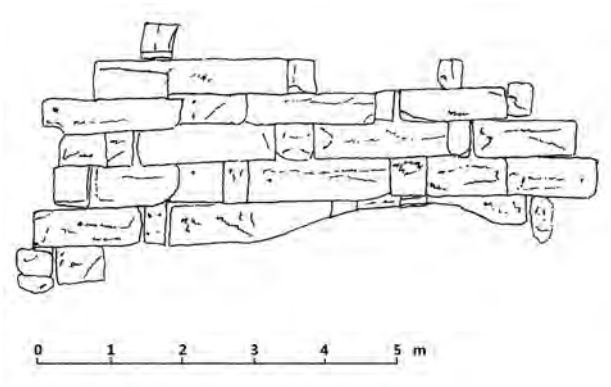

Fig. 10. Eastern side of the east tower.

tower; the last three metres are missing. Few of the blocks are regular ashlar blocks, hardly any being longer than 1.25 m and many much smaller. Most of them are lying in a straight-ish line, but near the corner there are some blocks that have tumbled down and the original position of which is unknown.

Fig. 11. The eastern wall of the east tower from SE.

Fig. 12. Blocks below the east wall.

WEST TOWER

The west tower is well preserved in most parts, and the western side displays a complete width of 19.30 m (*Figs. 15* and *20*). Only a few blocks are missing near the south-west corner. Some blocks are lying west of the tower, but their original position is uncertain (*Fig. 13*). The wall consists of isodomic ashlar blocks with a height of about 0.60 m. The pattern is headers and stretchers, the headers being remarkably narrow, most of them much less than 0.50 m. The stretchers vary in length from 1.50 to 2.50 m. Since the ground west of the tower slopes there is a considerable difference of the visible height of the ends: in the northern end only four courses are visible, whereas in the south corner no fewer than nine courses can be seen (*Fig. 14*). Some blocks on the ground below the wall may have belonged to a parapet as shown on Joneborg's plan (see *Fig. 2*).

On the northern side the north-east corner is not much higher than the ground outside it, but the ground level descends along its length, so that to the west the height is a few courses more (*Figs. 16* and *22*). The structure consists of isodomic

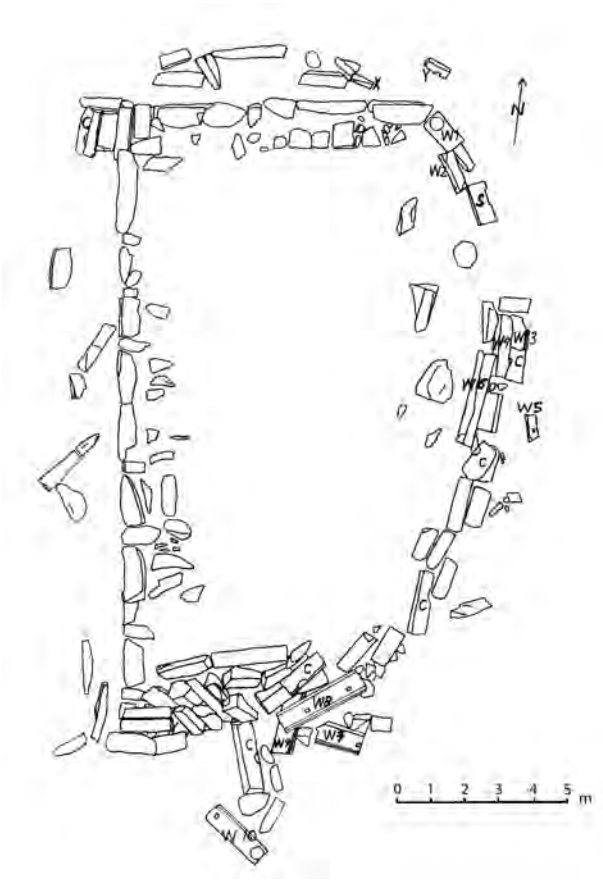

Fig. 13. Plan of the west tower. The blocks outside the edge on the north and west sides are on a lower level (see Figs. 16, 20–21); on the south side there is a slope downwards (see Fig. 18).

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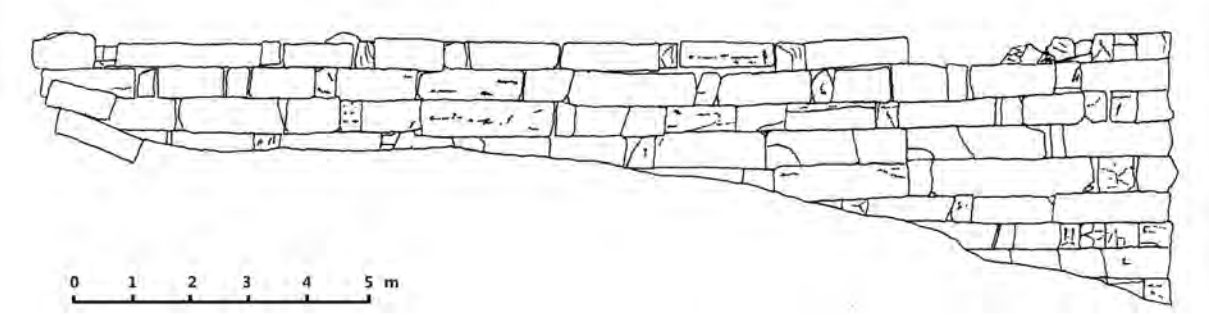

Fig. 14. Western side of the west tower.

ashlar masonry with not quite regular courses of barely 0.50 m in height, four in the east and six in the west. The longest stretchers are 2 m long but most are much shorter; of headers there are few. The blocks continue into the north face of the *köprü* (*Fig. 21*). It may be noted that there is an almost 2 m long block to the left on the topmost course as if it had been part of a parapet, and there are some similar blocks on the ground below the wall that might indeed have belonged to a parapet (*Fig. 20*).

Of the south side only the west corner is preserved to a width of one stretcher's length, about 2 m (*Figs. 17–18*). Only at the bottom the length of two stretchers can be measured. The height is the same nine courses as the west side. The header ends are two side by side, meaning that there are double stretchers on the west side, and in the same way two header ends can be seen side by side on the western side.[16] The corner block at the top has been moved towards the west.

The plan of the tower is now not quite regular since the blocks along the eastern and the southern sides have tumbled down somewhat (*Fig. 13*); the eastern side, consisting of starting blocks, was of course originally straight. There are not many bigger blocks in the interior of the tower, and what the top of the surface looked like is not known.

Fig. 15. The west tower from the west.

Fig. 16. The west tower from the north.

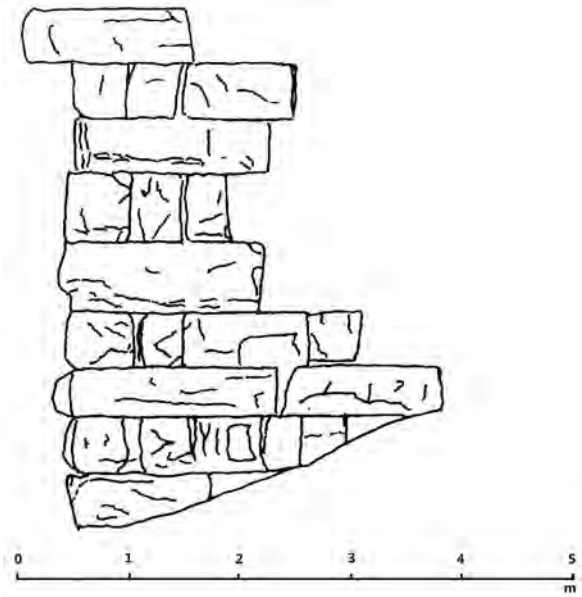

Fig. 17. Southern side of the west tower.

[16] Similar cases can be seen in the fortification wall corners in Labraunda, see Karlsson 2011, 224, fig. 10, 231, fig. 23; Karlsson *et al.* 2011, 22 n. 5.

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Fig. 18. The west tower from the south. In the centre some of the starting blocks are visible.

Fig. 20. The west tower and the köprü from NW.

The *köprü*

Whereas at the eastern end of the stadion nothing is visible beyond the east tower, at the western end the course continues towards the west about two metres lower than the surface of the tower on the northern side and still more on the southern. Its width is exactly the same as that of the tower, i.e. 19.30 m. It is situated higher that the surrounding terrain for the first part and is constructed of well-cut blocks to a maximum height of 4.65 m (*Figs. 20–21*). Since there is a tunnel through it in the lowest point (see below) it gives the impression of a bridge across a brook, and it is called *köprü*, bridge, by the inhabitants. Further to the west it is level with the terrain, and the transition is not discernible. The existence of the tunnel is quite intelligible for the flow of water on the slope, the question is why so much trouble has been taken for constructing the *köprü* against the tower, instead of just letting the tower wall continue down to ground level. It leads nowhere towards the west, there is no connection between its surface and the lower ground at its sides, and there is no access to the tower from it. It is true that it is now possible to ascend to the higher level by means of a few big ashlar blocks in the north-east corner acting as irregular steps (*Fig. 22*), but they are obliquely placed and certainly not *in situ* and can hardly have formed an access to the tower in antiquity – on the contrary the topmost of them, a block with the measurements 0.97 x 0.55 x 0.50 m, is certainly the missing corner-block of the upper course of the tower; the visible height difference was thus originally greater.

Fig. 21. The north side of the köprü and the tunnel opening from NE.

The northern side forms a continuation of the north side of the west tower, built of big ashlar blocks, some of them 0.75 m high (*Fig. 23*). Few of them can be reckoned as headers. The maximum number of courses is seven at the tunnel opening, which has its bottom 4.65 m below the top of the *köprü* (*Fig. 24*).

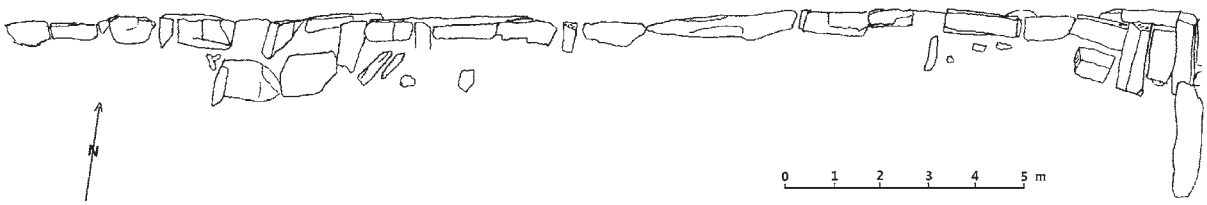

Fig. 19. Plan of the north side of the köprü.

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Fig. 22. Irregular steps leading from the west tower to the köprü.

Fig. 24. The north tunnel opening.

The southern side of the *köprü* is far less conspicuous. There is hardly any wall visible at any point, and only around the tunnel opening there are some ashlar blocks visible for a distance of three metres at the most. The tunnel opening is exactly in line with the southern side of the tower. In Joneborg's plan from 1960 the southern side is marked as a clearly visible oblique line, making the *köprü* gradually narrower towards the west (*Fig. 2*). There are a few just-visible blocks emerging from the ground, which may belong to such a line.

In the eastern part of the *köprü* there are some big blocks, the biggest one measuring 1.80 x 0.50 x 0.45 m on the surface less than 2 m from the wall of the tower (*Fig. 20*). They may be part of a possible parapet.

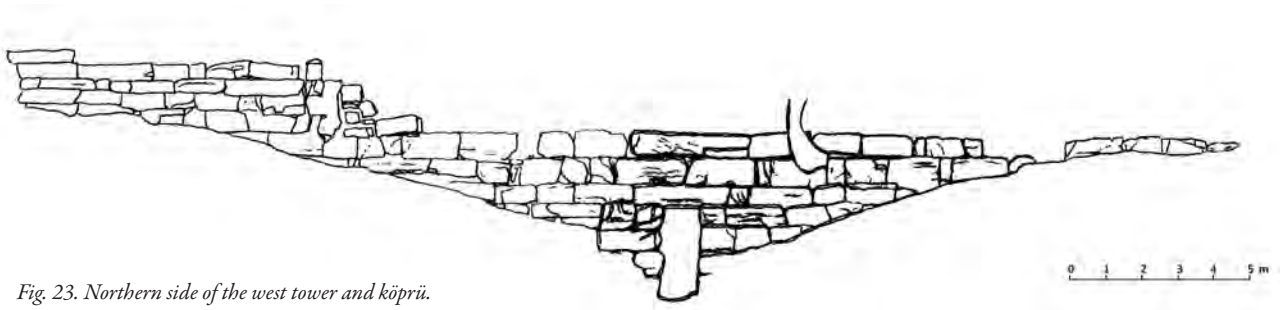

Fig. 23. Northern side of the west tower and köprü.

The tunnel

That the *köprü* would have a tunnel under it for letting the water pass is natural; if not, a pond would be inevitable in certain seasons. So it is not the existence of the tunnel that is unexpected, it is the existence of the *köprü* itself. The tunnel is more well-built than might be expected, with walls consisting of large blocks similar to those in the towers and the north side of the *köprü*. Their size varies, the biggest stretchers being 2.50 m long or 0.80 m high, whereas other blocks are much smaller. The maximum number of courses is five at the northern end, whereas there are only three courses at the southern end. There is no significant difference between the two sides of the tunnel (*Figs. 26–27*). The roof consists of large, wide blocks, the height of which is difficult to report. As a rule they are laid on top of the wall blocks, but the lintel blocks in both openings are cut to be inserted into the wall blocks (*Figs. 27–28*), and this might be true also for some other blocks where this detail could not be observed.

The tunnel is obliquely cut, the south end being nearly 5 m further from the corner of the tower than the north one (see *Fig. 2*). Since the *köprü* crosses a rather steep slope, the tunnel also slopes. Its bottom is 4.70 m lower than the *köprü* on the north side and another 0.90 m lower on the south side, and consists of rough earth. The top is 2.10 m below the *köprü* on the north side and about 2 m lower on the south side; however, its ceiling is not sloping but is lowered stepwise in three offsets (*Figs. 26–27*). The height is 2.60 m at the north end but only 1.45 m at the south. The width is about 1.10 m. The southern end is marked by an east jamb consisting of blocks about 0.40 m wide and a west jamb consisting of blocks about 0.55 m wide, continued by some irregular blocks (*Fig. 26*).

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Fig. 25 and 26. The south tunnel opening (above and below).

Fig. 27. The north tunnel opening.

Fig. 30. Tunnel interior seen from the south.

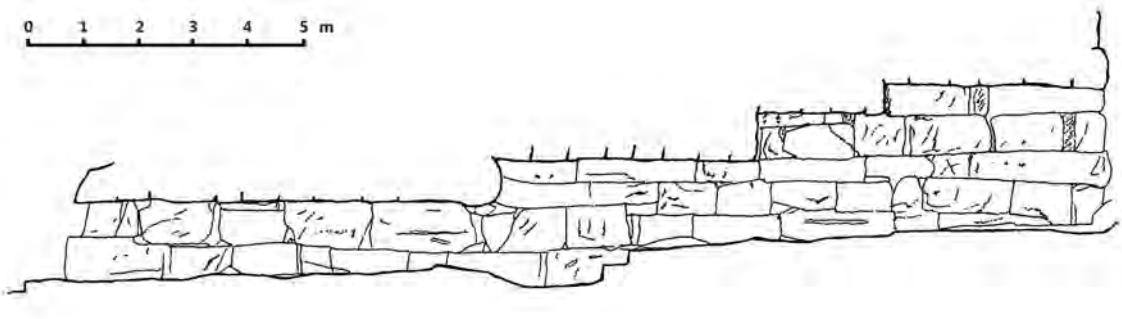

Fig. 28. Western wall of the tunnel.

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Fig. 31. Tunnel interior seen from the north.

The starting blocks

The characteristic feature of an ancient stadion is – apart from the racecourse itself and occasionally arrangements for spectators – the presence of devices for starting the runners. Visitors to the principal stadia in Greece, such as Olympia, Delphi, Nemea and others, are used to seeing lines of starting blocks or slabs with two parallel grooves for the toes of the runners and holes for posts to keep the runners apart (*Fig. 34*). In Asia Minor we rarely encounter anything of this kind. In spite of the remnants of numerous stadia, not a single two-grooved slab has been found. Priene, Miletus, and Didyma have square blocks with holes but no grooves.[17] Slabs with a single groove are rather rare in Greece, and apart from those in the gymnasium in Delphi, which have been known of for a long time,[18] they have been found only as earlier devices in the stadia in Isthmia and Delphi.[19]

In Asia Minor slabs with one single groove are – apart from Labraunda – found from the stadion in Ephesus, but not *in situ* but reused and built into the fortification wall in the top of the Ayasoluk hill.[20]

The lines of starting blocks at Labraunda, *balbides*, are preserved at both ends of the field.[21] Almost all of the blocks seem to be extant but none of them is quite *in situ*. At the eastern end the three first blocks from the south seem to have rolled about 120° towards the east, which means that the top side with the groove is almost facing downwards (*Figs. 35–36*). Those at the northern end of the line have sunk considerably with the collapse of the northern wall, of which there are now no traces. At the western end the first blocks from the north have probably moved very little from their original position,

[17] See *Milet* 2:1, 7, Abb. 5; Zschietzschmann 1960, Abb. 10; Schede 1964, 89, Abb. 102; Valavanis 1999, 64–72. In Greece a line of similar blocks is found at the agora at Athens, Shear 1975, 363f., pl. 82d; Romano 1981, 237 n. 1; Valavanis 1999, 63f.

[18] See Jannoray 1953.

[19] *Isthmia* II, 51, pls. 24, 95; Aupert 1979, 173, fig. 106; Romano 1977, 29; Roos 1981, 110. They were found later and were not known when the stadion at Labraunda was discovered. The stadion at Nemea was also thought to have had starting blocks with a single groove due to the find of a reused block, Romano 1977, 27f., fig. 1, pl. 17. It turned out to belong to a rather special type, Romano 1981, 181, so Nemea had to be eliminated from the list, Miller 2001, 541f., n. 601.

[20] Roos 1981.

[21] Labraunda is the only stadion in Asia Minor with preserved starting blocks at both ends, see Hellström 2007, 143; in fact there is no other stadion in Asia Minor that has starting blocks with grooves preserved in the racecourse.

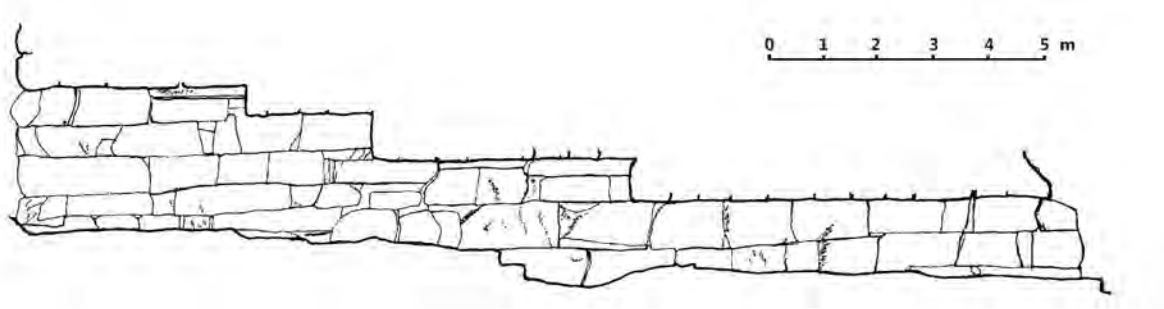

Fig. 29. Eastern wall of the tunnel.

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Fig. 32. The west tower from the east.

Fig. 33. The west tower, northern part from the east with blocks W1-2 and S.

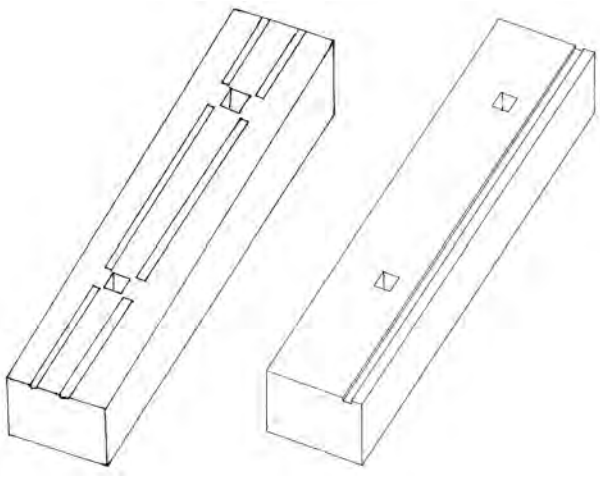

Fig. 34. Starting block at Labraunda (right) compared with a normal block in Greece (left), which, however, would seldom be so thick.

whereas those to the south have rolled down towards the south with the collapse of the southern wall (*Fig. 41*). Those in the middle of the western line are certainly not far from their original position but have been moved in a quite unaccountable way, and it is far from certain what position in the line every single block had or how many of them are missing, a difficulty enhanced by the existence of fragments off-line, see below.

The starting blocks are enumerated in the following list. The common feature is that the blocks, being of gneiss, are much bigger than the slabs of other material found in other places, and are also thicker. The longest are almost 3 m long. The width range is 0.59–0.70 m and the thickness range is 0.32–0.41 m (*Fig. 34*).[22] The single groove has a rectangular section, not triangular as can be seen in the slabs in the other places. It is 0.06 m wide and 0.02 m deep. It is placed 0.07 m from the front. At regular intervals of 1.38 m, measured from centre to centre, is a square hole. A comparison with other stadia shows that the distance between the holes can vary significantly, with that in Olympia being rather narrow and those in Epidauros and Halieis remarkably wide.[23] The stadion at Delphi is an almost-exact match for Labraunda at 1.37 m.[24] The holes are 0.11 m square and 0.16 m deep. The size is greater than in other places, where we often meet figures like 0.07 m. As for the depth in other sites the hole may often be as in Labraunda or even pierce through the block, but may also be very shallow.[25] The holes are placed 0.26 m from the front. The groove continues and is not interrupted by the hole as in other places, both in one-groove and two-groove slabs; only the older starting block of the older stadion at Nemea has a continuous groove.[26] At the gymnasium at Delphi the interruption is so long that the groove occupies only half of the distance between the posts.[27] Some of the blocks at Labraunda have only one hole whereas others have two, and it can

[22] Both measurements are more than the average in other stadia. The width is usually 0.40–0.55 m and the thickness about 0.24 m, although both much thinner and much thicker may be found.

[23] Romano 1981, 212f. It is remarkable how much the distance between the holes at Olympia can differ from one slab to another in the same line, see *Olympiabericht* VIII, Taf. 9.

[24] Aupert 1979, 40; Romano 1981, 213.

[25] It is possible that that the holes have become shallower as the blocks have worn down, e.g. at Ephesus, Roos 1981, 112, n. 11. In some cases with soft stone like poros the hole has been lined with lead, see *Isthmia* II, 139, n. 1 Romano 1993, 28–29, fig. 18a, 32. Lead in the holes is also reported at Epidauros, Kavvadias 1900, 112.

[26] Romano 1977, 27; for this special block see Miller 2001, 241f. and above, n. 19. At the later stadion at Nemea the starting blocks with two grooves have the strange feature that one groove is continuous whereas the other is interrupted by the post-holes, see Miller 1976, 196, pl. 42d. Grooves may also be interrupted at the joints of the blocks, Romano 1981, 32, 36.

[27] Jannoray 1953, pl. VII.

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be observed that the distance between two holes in adjacent blocks is slightly shorter than between those cut in the same block; the blocks have thus been placed with a slight interval between them.Unfortunately I cannot offer parallels to this feature from other places.

The first and the last block of the line have a circular hole cut in the surface near the end of the block (*Figs. 35*, *39* and *42*). Its diameter varies from 0.38 m to 0.41 m for the three preserved specimens. The depth varies from 0.02 m to 0.08 m, due less to the holes themselves than to the fact that the surface around them is uneven. Seemingly the grooves do not continue in front of these holes. No doubt they were intended for the placing of columns, probably unfluted stone columns of the same type as other specimens in Labraunda. Whether they carried something or were only meant for marking the end of the line of starting blocks is not clear.[28]

The extant blocks are enumerated in the following list, giving their size (length – width – thickness), position, and details. The list starts from the left when facing the racecourse in both cases, i.e. at the eastern end from the south and at the western end from the north. The measurement given from the end of a block to a hole is measured to its edge, not to its centre. All measurements are given in metres.

Eastern end:

E1 (*Fig. 35*) 2.45 – 0.68 – 0.38, reaching to the blocks forming the southern side of the racecourse. N-S direction, face downwards and towards east. Circular hole, 0.40 in diameter, at the southern end, 0.10 from the front and 0.08 from the south, 0.09 deep. Groove and one hole, 0.63 from the north. The groove reaches to the circular hole and becomes then gradually shallower.

E2 2.22 – 0.61 – 0.40. N-S direction, mostly under the ground, face downwards and towards east. Groove and two holes, 0.65 from the south and 0.12 from the north.

E3 (*Fig. 36*) 2.78 – 0.62 – 0.41. N-S direction, face downwards and towards east. Groove and two holes, 0.14 and 1.52 from the north.

E4 2.29 – 0.60 – 0.40. N-S direction, face downwards. The groove can be attested in the middle of the block, but not the hole that must exist.

E5 (*Fig. 37*) 2.33 – 0.59 – 0.38 together, broken into two parts through the northern hole. N-S and NE-SW direction, face upwards. Groove and two holes, 0.16 from the south and 0.65 from the north.

Fig. 35. Starting block E1 from the east. NB the stone wall across the racecourse.

Fig. 36. Starting block E3 from the east.

Fig. 37. The two pieces of starting block E5 from the east.

E6 2.37 – 0.60 – 0.41. N-S direction, face downwards. Part of groove attested. One hole, 0.61 from the south, second hole must exist but cannot be checked.

E7 (*Fig. 38*) 1.68 – 0.62 – 0.41, broken at the northern end. N-S direction, face obliquely upwards with the northern end in the ground. Groove and one hole, 0.95 from the south.

[28] Similar holes are found at the end of the starting line at Epidauros, but in separate blocks, see below, n. 30.

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Fig. 38. Starting block E7 from the east.

Fig. 39. Starting block W1 from the south.

Fig. 40. Starting block W4 from the west.

The starting blocks of the eastern end seem to be clear enough although two of them are turned round and cannot be checked properly. It is a pity that the last blocks in the line are missing, but certainly no block is missing in the middle of the line and the existing ones are lying in the right order although not *in situ*. The complete length of the existing blocks is 16.12 m, and probably the missing ones are two in number.

Western end:

W1 (*Fig. 39*) 1.13 – 0.70 – 0.36. N-S direction, face upwards. No groove at all. Circular hole, 0.41 in diameter, 0.09 from the front and 0.05 from the north, 0.03–0.07 deep, shallower at the front.

W2 1.31 – 0.59 – 0.32. N-S direction, face towards west. Groove and one hole, 0.17 from the south.

W3 0.99 – 0.60 – 0.36. N-S direction, face upwards. Ends not parallel; the length is 0.03 shorter at the front. The difference may have been even greater, but the ends are not intact at the sides. Groove but no holes.

W4 (*Fig. 40*) 1.87 – 0.60 – 0.32 (the width may even be slightly more). N-S direction, face towards west. Groove and one hole, 0.70 from the south.

W5 Fragment of a block 0.93 – 0.36 – 0.39; neither the length nor the width is the original one, perhaps not even the thickness. N-S direction, face upwards. Southern end broken and most of the face lost, identified as a starting block only by the fact that the bottom of a hole with the max. depth of 0.07 is preserved, 0.52 from the north.

W6 2.87 – 0.63 – 0.35. N-S direction, face towards east. No groove visible, one hole 1.22 from the south, second hole must exist but is not visible.

W7 (*Fig. 41*) 1.45 – 0.64 – 0.34. NW-SE direction, face upwards, slightly towards S. Groove and two holes, reaching exactly to the ends of the block, which is broken at the north end.

W8 (*Fig. 41*) 2.71 – 0.65 – 0.39. NE-SW direction, face upwards, slightly towards SE. Groove and two holes, 0.45 from the north and 0.77 from the south.

W9 (*Fig. 41*) 1.60 – 0.59 – 0.34. N-S direction, face upwards, its northern end lying under block W8. Groove and one hole, 1.04 from the south.

W10 (*Fig. 42*) 1.99 – 0.61 – 0.37. NW-SE direction, face upwards, slightly towards SW. Circular hole, 0.41 in diameter, 0.03 from the front and immediately at the end, 0.02–0.08 deep. Groove and one hole, 0.19 from the north. How far towards the south the groove continues cannot be ascertained, since the surface is considerably defaced or damaged at the southern end; the depth of the circular hole sinks to 0.02 at the end.

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Compared with the clear and obvious line of starting blocks of the eastern end, those of the western end are something of a mess (*Fig. 46*). It is true that both end-blocks are preserved, but blocks are missing in the middle of the line, and it is far from clear which or how many. Furthermore, the order of the blocks is not quite certain since one block is lying on top of another. The order may be deduced from the location of the holes, but if a block is broken at the end it can still not be quite certain. The complete length of the enumerated blocks is 16.85 m, so evidently a few blocks must also be missing here.

To complicate the matter there are a few fragments that may have belonged to the line of starting blocks or at least have been intended for it. Two of them that were found after the survey are situated north of the north wall of the west tower, near the wall and on a lower level. That they were situated in the line of starting blocks and were dislocated together with the other blocks in the partial collapse of the tower is hardly probable. They may have been replaced by other blocks and placed on the north wall, even though we have no proof that any blocks were changed or replaced. They could of course also have been broken during fabrication and discarded and used for other purposes. If so, they may or may not have all the characteristics of a starting block; we do not know in which order details like post-hole or groove were cut. It is difficult to imagine a block with the post-hole found at this place to be intended for another purpose, but we do not know if it ever reached its purpose. Anyhow, it is meaningless to try to fit them into the starting line even if it were possible to find a position where the location of the hole would fit. In fact block W5 is also rather uncertain in this respect but I have chosen to include it in the line – anyhow it can hardly have been a replaced block found in this position, as opposed to the following blocks.

X. A broken block situated north of the northern end of the western starting blocks, just outside the racecourse and at a lower level (*Fig. 43*).[29] Its pres. L. is 0.76, pres. W. 0.40, and its H. 0.38. Its left side surface is intact, its upper surface intact and smooth, its back side intact and rough, its right and front sides are broken. No groove is visible, but it ought to have been exactly in line with the break. A square hole, 0.12 x 0.12 is situated exactly at the front edge, 0.56 from the left and 0.21 from the back. Its depth is probably 0.17, but the stone is broken at this place, and the hole goes straight through it.

Y. Another broken block also situated north of the northern end of the western starting blocks at the same level as block X, about 3 m east of it and near starting block W1 (*Fig. 44*). It measures 0.40 x 0.40 and has an intact short end and a very

Fig. 41. Starting block W8 from the south with W9 under it and W7 in front.

Fig. 42. Starting block W10 from SW.

Fig. 43. Block X from the north.

[29] Of course it is hasardous to give an exact position of blocks of this size since you cannot be sure that they are located on the same place from year to year – or are to be found at all.

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Fig. 44. Block Y from SW.

Fig. 45. Blocks C east of the west tower.

irregularly broken other end. There is a hole measuring 0.12 x 0.12, situated 0.25 from the short end and the same distance from what was the back side. There is no groove, but the block is damaged where the groove should have been, and perhaps the damage was the reason for the cancelled execution.

Other blocks

At Labraunda the circular holes cut in the end blocks of the start block line *(Figs. 35*, *39* and *42*) with a diameter of 0.38–0.41 m and a depth of 0.02–0.08 m (see above) are cut in the same block as the first and last part of the groove and thus form part of the list of starting blocks. At other stadia they may be cut in separate blocks. At Epidauros there are square slabs at the ends of the line with shallow circular depressions with a diameter of 0.45 m.[30] The unfluted columns at Epidauros that were intended to be inserted in these slabs are 0.40 m in diameter and are still partly preserved, standing *in situ* or lying on the ground. Their original height is unknown.

Near the south end of block W2 is a block, marked S on the plan (visible on *Fig. 33*). It lies in a NW-SE alignment and is probably approximately *in situ*. It is 1.25 m long, *c.* 0.56 m wide and 0.60 m high, but it is rather rough, at least compared with the starting blocks. Its NE side has a roughly rectangular but irregular cutting through its whole height, 0.47 m wide and 0.08 m deep. It is not placed symmetrically to the block but nearer its NW end, 0.29 m. Its exact purpose is unknown, but there are similar blocks in the same position in front of the starting line in other stadia. Evidently they have some connection with starting devices. A check on other stadia shows that varying and much more complicated devices exist in association with other starting lines.[31] They are supposed to connect with a starting device, a *hysplex*, and probably this much simpler block

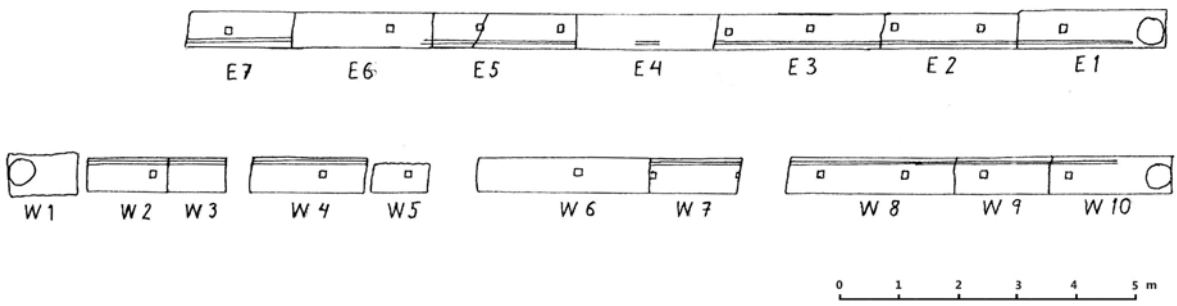

Fig. 46. Tentative reconstruction of the lines of starting blocks.

[30] Patrucco 1976, 64f.

[31] Epidauros, Nemea, Isthmia, Halieis, and the Corinthian agora, Broneer 1972, 205; Miller 1976, 198, n. 48, pl. 16d and 2004, 40f.; Romano 1981, 211 and 1993, 32; Valavanis 1999, 9–19.

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belongs to the same category. A thorough check on more or less similar blocks associated with starting lines shows that the greatest likeness is represented by lying blocks forming bases for a *hysplex* as is shown for example in Rhodes.[32] It is easier, however, to suggest that it was originally standing in the actual position, probably with another similar block in front of the other end of the starting line. It is difficult to give a good parallel, and probably it did not form part of the original starting device (see below).

A strange feature is formed by a number of blocks around the west tower. They are ashlar blocks with a half-moon-shaped cutting in one long side, about 0.35 m long and 0.15 m wide. The depth may reach the whole thickness of the block or only part of it. The blocks in question are found among the blocks forming the eastern and southern sides of the west tower (*Fig. 45*) and are marked with a C on the plan (*Fig. 13*). Five of them can be counted, some of them long blocks, others considerably shorter. It is noteworthy that one of them forms the second step of the secondary staircase in the NW corner of the tower, a block, the original position of which is unknown (*Fig. 22*). What the purpose of these cuttings may have been I do not know.

Function

An ancient stadion was an oblong field with the starting place and the finish at the ends. The races consisted of one, two or several courses. In a single-course race, a stadion, the start was at one end and the finish at the other; in a double-course race, *diaulos*, the start and the finish were at the same end, and the same was the case with a longer race of 12 or 20 or 24 courses, *dolichos*. How the turns were performed is the subject of much discussion – did each runner have his own lane during the whole race, or did they turn around a common post at the ends of the course? Since the runners did not turn within their own lanes like modern swimmers but more probably around a post, they would be liable to collide with the runner in the adjacent lane if every lane was used. But since the number of lanes was normally about 12–16, it is not improbable that only every second lane was used – we have no information if the number of participants in a heat of a *diaulos* race was so great that they could not have been accommodated in every second lane. Of course it is not certain that the same pattern was used in a *diaulos* race and a *dolichos* – the *dolichos* runners may have used a common turning-post and have run together while the *diaulos* runners kept their own lanes. In fact a recent find from the stadion at Nemea, a socket for a turning-post,

Fig. 47. East tower from NW with the starting blocks and the end.

has provided a valuable indication to the solution: there were races where the runners turned around a common turning-post. So at last we have evidence that at least the *dolichos* runners turned around a common post.[33]

How many lanes did the stadion provide? In those cases where a figure can be given there is a great variety – Olympia had as many as 20 but others had considerably fewer: Epidauros with eleven and Nemea with 13, for example. So looking for parallels is of no use. Let us instead look for the available space – as blocks E1 and W1 touch the blocks that form the side of the field we can deduce that the whole available space was used. It is indeed a pity that the north side of the east tower is not preserved and neither the last starting block of the line nor the side of the field exist. At the west tower the end blocks of the starting line are both preserved, but the last one on the south side can give no clue owing to its lost position. We know that the western wall of the west tower is 19.30 m wide and we might expect the eastern wall, the starting line, to be so too. In the two cases where one post-hole is cut in the same block as the circular hole, the middle of the post-hole is 1.75 m from the end of the block, i.e. 3.50 m for both ends. That would leave 15.80 m for the distance between the first and the last post-hole. The width of eleven lanes would be 15.18 m and that of twelve lanes would be 16.56 m, too little and too much, respectively. Neither would fit exactly, but since we do not know whether the block with the circular hole reached the southern wall of the tower nor whether the southern side was parallel with the northern or the eastern side was longer than 19.30 m, the exact situation of the south-east corner of the west tower is unknown and the number of lanes will be an unsupported guess. However I feel inclined to suggest that

[32] See Valavanis 1999, 77, fig. 53.

[33] Miller 1977, 26 and 1980, 159. There is also the evidence from the starting line at Halieis which is not straight but has a wide "V" design, which is interpreted as means to allow the starting runners to be equidistant to a common post, Romano 1981, 48, 269, where other examples are also shown.

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there were twelve lanes between the post-holes in addition to the two in the end blocks, although the required length would then be 16.56 m plus 3.50 m and thus longer than the 19.30 m of the western side of the tower. So the suggestion is 14 lanes.[34]

As the lines of starting blocks are similar at both ends there is technically nothing to show which end was the finish, but it is taken for granted that since there was a starting line at both ends, the finish was always in the same end and the start was in different ends in the stadion race and the *diaulos*. For a stadion connected with a sanctuary it seems natural that a *diaulos* race is run away from the sanctuary and back, not the other way round; the stadion race would then also be towards the sanctuary. For establishments like Olympia it seems easy to decide which was the finish end. For Labraunda it is more complicated since the eastern end is nearer the sanctuary but is not easy to attain from there due to the rough terrain, at least the way the terrain looks nowadays. From which side was the stadion approached? The spectators arriving from Mylasa would approach the western end from the south, the visitors already in the sanctuary would probably approach the western end from the north. The finish might have been at that end.

Another criterion for deciding the location of the finish is the available space after the finish line. Since the runners must have a sufficient distance for slowing down if they dare keep their top speed right until the finish line, a certain space is needed at least in one end, which would then be the end used for the finish in every race.[35] But how much is a sufficient space? At Labraunda the distance is eight metres at the eastern end and nine metres at the western end, both of which seem to be too little.[36] But there may also be a difference concerning how the space is ended. If the question is about a precipice a much longer distance would be needed than if it is a wall against which the runner can put his hands. The eight metres at the eastern end at Labraunda with nothing for a support is certainly too little. The difference with nine metres seems to be small, but we do not know for certain how the tower ended. There are indications that there may have been a line of blocks in the form of a parapet along the western end of the tower; if so, the nine metres may have been sufficient even though it is not felt so.[37]

The date of the stadion

There are no direct indications for the date of the stadion. There are no references to its establishment, nor do we have any references to the events that took place in it. However, since many of the important buildings in the sanctuary date from the Hecatomnid period we must pose the question whether this date may apply to the stadion also, or whether there is any reason to doubt its belonging to the period. The answer is that there is nothing in the material that does not fit the Hecatomnid period, and the big ashlar gneiss blocks have many parallels in the Hecatomnid walls in and around Labraunda, as well as their details (visible in *Fig. 18*).[38] It must also be noted that the few extant cases of starting blocks with a single groove are from an early date,[39] and one of them is the only specimen with a continuous groove not interrupted by the square holes.[40] There are no finds to confirm a date and also no clamp holes or similar details.

A possible clue to the date of the establishment of the stadion is a local inscription that is interpreted as mentioning the fact that Mausolos augmented the number of days to a festival.[41] Although the exact interpretation is open to doubt[42] the augmentation is clear, and although there is no evidence that it included athletics it is a possible occasion for their establishment and thus also for the establishment of the stadion.

Similarly as for the establishment date of the stadion, the end of its function has also to be considered. Certainly it was not in use for sports into the Christian era and may of course have come out of use long before that. The sources for athletics during Late Antiquity are usually rather scanty and do not furnish us with clues here either.

For a facility which may have been in use for several centuries the question naturally arises whether there were changes in appearance so that the establishment displayed different stages, as at other sites where stadion I, II and III or even IV may be distinguished. We can find few if any changes that may represent new stages in the structure, but of course the

[34] With the block S and a *hysplex* positioned in front of the line of starting blocks the number would of course be restricted, see Romano 1981, 212f.; Valavanis 1999, 19.

[35] If the course ends with a precipice as at Sicyon or a row of pillars as at Delphi it would seem clear that the finish is at the other end, see Harris 1960, 33. In the case of Delphi it does not, however, seem clear, see Aupert 1979, 66f., who considers the 6.50 m distance to the pillars to be sufficient. Of course there is also the possibility that the race finished before the starting line, see Romano 1981, 107 and 1993, 28, n. 59.

[36] An interesting description of an anonymous Athenian runner in the Isthmian games besprinkling the spectators with oil as he tumbled into the packed crowd after finishing his race, Bacchylides 10, indicates that the distance to the spectators at the end was not long enough although there was certainly no hindrance for moving the crowd backwards from the racecourse.

[37] In fact one has often the impression as a spectator of modern sport competitions that the space after the finish is not sufficient for a secure deceleration, e.g. in downhill skiing or ski jumping.

[38] See above, n. 16. They are not so exact, however, as in Karlsson 2011, 222: "At the corners there are double headers in every second course".

[39] Romano 1977, 29f.; 1981, 206.

[40] The older stadion in Nemea, see above, n. 26.

[41] *Labraunda* III:2, 81f.; Roos 2011, 265.

[42] See Piejko 1990, 147; Hellström 2011, 150.

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existence of a few of the blocks at or near the western line of starting blocks may show that some pieces were changed at an unknown date, even though it is not the only explanation for their existence since they could also be pieces discarded due to damage incurred during the cutting. As for the remains of the stadion they are considerable; of course the regular blocks were good for reuse for different purposes, but for the stone houses on the site blocks could certainly be found nearer at hand in the sanctuary – and usually of a more convenient size too. So blocks from the stadion would not be expected to turn up in buildings or constructions in the vicinity of the sanctuary. However, there are examples of blocks that existed at the start of the excavations in the 1980s but are disposed or missing now; e.g. the enlargement of the path westwards along the *köprü* has resulted in the disappearance of some of the westernmost blocks of the northern wall.

One cannot, however, overlook the existence of block S. Since it is very probable that it has something to do with a *hysplex* construction the question arises whether it is contemporary with the original construction with the *balbides* or not. It is a difficult question since we do not know its original location. If it were contemporary it would be hard to consider its present location as the original one since it disturbs the line of *balbides*. It is easier to suggest that it is a later addition to the starting line as at other establishments.[43]

On the stadia at Caria

The remains of ancient stadia in Asia Minor are numerous,[44] and Caria is one of the areas where they are most frequent, as can be seen from the map. Here is not the place to give a survey of these establishments: it is hoped that such a survey will be accomplished in the near future and will take into account not only the visible or vanishing remains of stadia but also the ancient literary and epigraphical testimonia of both remains and the existence of competitions that require stadion establishments.

As for the numerous remains of ancient stadia in Caria[45] a glance on the map shows that most of them are situated in the northern and western parts whereas there are very few situated in the south and east.[46] Most of them are found in connection with cities, but there are also those connected with sanctuaries such as that at the temple-place in Didyma and the one at Triopion on the Cnidus peninsula, where nothing is to be seen now. Their appearance varies greatly; we have on one hand the elaborate constructions with well-preserved tiers of spectators' seating such as Aphrodisias and on the other hand the cases where only a depression in the ground indicates an establishment as in Antiochia on Maeander; at sites like Myndos not even this much is to be seen. Separate benches of the kind usually found in stadia are seen in many places, but of course their existence is no proof of the existence of a stadion, as they may also have belonged to a theatre. On the other hand, remains of starting blocks are found only at Labraunda, although the constructions at Priene and Miletus also attest to a starting device. At Heraclea Salbace it is to be regretted that Laborde, after seeing the stadion and praising its well-preserved starting device,[47] did not describe what was to be seen and that no later visitor did so either.[48] I have previously lamented this fact and also the loss of the establishment;[49] the latter loss was reversed in later years when part of the stadion was uncovered by the villagers. No fewer than 13 tiers of well-preserved spectators' seats near the sphendone are visible;[50] of the starting slabs or starting devices unfortunately nothing has yet been found.

As for comparison objects for the stadion of Labraunda there are hardly any that can be reckoned as a near parallel in any way. For the situation in the terrain, Orthosia may possibly offer a parallel but not in any details.[51] As it is, the stadion of Labraunda is so far a solitary example of its kind.

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[43] For the disturbance of the original starting line through the introduction of similar blocks see Valavanis 1999, 8f.
[44] See the map in Roos 2012, 50, fig. 1.
[45] For the difficulty in deciding which establishments should be reckoned as existing, see Roos 1994, 179f.
[46] In fact the density of stadia in the Maeander area is remarkable, especially if one reckons also the northern side of the river, which strictly does not belong to Caria – besides Miletus, Didyma, Antiochia, Heraclea Salbace, Aphrodisias, and possibly Orthosia on the south side, we have Ephesus, Priene, Magnesia, Tralles, Nyssa, Tripolis, and Laodicea on the north side.
[47] Laborde 1838, 100.
[48] Half a century later it was reported as "still very distinct", Sitlington Sterrett 1888, 16; Robert & Robert 1954 only reproduce Laborde's illustration as pl. 24, 1 without mentioning whether there was still anything preserved.
[49] Roos 1994, 182f.; 2012, 53f.
[50] See Hild 2013, Abb. 42.
[51] Marchese 1986, 235, pl. 97 and 1989, 153, pls. 53–54; its identification as a stadion is, however, very dubious; see n. 6 above.

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