A SURVEY OF THE STOAS OF THE ASKLEPIEION IN MESSENE

メッセネ, アスクレピオス神域のストア遺構の概要

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Messene was an important Hellenistic city in Peloponnesos and well known because it was described by Pausanias. The Asklepieion was located in the city center and was the main sanctuary in Messene. The Doric peripteral Temple of Asklepios was built in a square court which was enclosed by Corinthian stoas. The authors had an opportunity to participate in fieldwork to survey and study the architectural remains of the surrounding stoas. The objective of the present paper is to describe generally the present condition of the stoas and to make clear the dimensions of the buildings as a first step of their architectural study.

Keywords: classical architecture, stoa, Messene, Asklepieion, Corinthian order

古典建築、ストア、メッセネ、アスクレピオス神域、コリント式オーダー

1. Preface

The ancient city of Messene, one of the most important classical sites in Greece, is located around 17 km north of Kalamata, Peloponnesos. According to *Description of Greece* by the Roman traveler and geographer Pausanias, Messene was founded in 369 B.C. by Epaminondas from Thebes after he had beaten the Spartans near Leuktra.¹

It was in the 1950s that the Greek archaeologist Prof. Orlandos began to excavate the site in a scientific way, and shed light on most of the building complex of the Asklepieion (the Sanctuary of Asklepios). However, the final report of this excavation was not published.² In 1987, the Society of Messenian Archaeological Studies, directed by Prof. P. Themelis of the University of Crete, started reinvestigating the Asklepieion and performing some other new excavations extensively at the site of the Theater, Stadium, housing quarter, etc. in the city area.³

The authors, as members of the Architectural Mission of Kumamoto University to Ancient Messene (leader: J. Ito), joined the fieldwork and have been continuing architectural surveys since 1997. After working on the grave monuments in the Gymnasium complex for three years, they surveyed the surrounding stoas of the Asklepieion for one or two months in each season of 2001 and 2002.⁴ The objectives of the present study are: firstly, to make a document of architectural remains of the stoas as were excavated; secondly, to analyze them and reconstruct the upper structure which was destroyed; and thirdly to make a comparative study with other buildings in the history of Greek architecture. In this paper, the authors describe the present condition of the stoas and summarize their characteristics as the first step of our study.⁵

Drawings were made for plans, elevations, and sections of the stoas. Some important blocks were also measured and drawn. For measurement work, an electronic total station was used to lay basic lines along the outer and inner colonnades and walls. Handy 5-m steel tapes were also used to measure offsets from the basic lines. For the elevations, initial drafts were drawn by photogrammetry and then detailed drawings were added. The plans, elevations and sections were drawn in 1:50 scale (Fig. 2) and the blocks in 1:10 scale (Fig. 5).

2. Outline of the Asklepieion

The Asklepieion is situated to the south of the agora in the center of Messene, abutting to the streets on its north and east side. It was naturally the main religious center of the town, but at the same time, it also had a role as the political center with its annexed Ekklesiasterion (the assembly hall) and Bouleuterion (the council hall). The Gymnasium complex was ca. 250 m to the south of the Asklepieion and the Theater ca. 200 m toward the northwest. In the middle of the Asklepieion, the Temple of Asklepios was built in Doric order with an altar in front of it. Many bases for statues and five semicircular exedrae were also placed along the colonnades of the temple and the surrounding stoas. All of these were enclosed by Corinthian stoas on four sides, which formed a square court. Behind the east stoa were the best preserved buildings of this site: the Ekklesiasterion, the East Propylon and the Bouleuterion. The west stoa had eight smaller rooms, the northernmost of which was the cult room for Artemis. Behind the north stoa was the Sevasteion which was divided symmetrically into two identical parts around the axis of the North Propylon, which opened onto the street

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Fig. 1 The plan of the Asklepion and the main dimensions

Fig. 2 The northwest corner of the Asklepion

Fig. 3 Whole view from the northeast

Fig. 4 View of the North Stoa from the northeast

to the north. There was a staircase on each wing of the Sevasteion to access the north stoa. There was a Hellenistic bath building behind the south stoa, separated from the Asklepieion (Fig. 1, 3).

The site of the Asklepieion slopes southward gently. The floor of the Sevasteion, which is adjacent to the north stoa, is ca. 2.5 m higher than that of the stoas. The east stoa was constructed on a bed of rock which is now partially exposed at the southeast corner. On the other hand, the west part of the south stoa was constructed on a terrace supported by foundations of poros. The axis of the Asklepieion was oriented 20 degrees clockwise from the east-west geographical line, following the direction of the street network which is supposed to have been based on the gridiron or Hippodamian system.⁶

The four stoas have double colonnades. The outer colonnades of the north and south stoas are approximately 52 m long, and those of the east and west stoas 47 m. The four colonnades make precise right angles.⁷ All the crepis blocks of the outer colonnades are preserved in situ. The stylobate blocks remain only near the corners, and the plinths only on the northeast and northwest corners (Fig. 4). The column, architrave and frieze blocks are of poros, and those of the euthynteria, stylobate, toichobate and walls are of limestone. According to P. Themelis, the excavator, the whole building of the Asklepieion dates from 215/4 B.C.⁸

3. Architectural remains in situ

1) Euthynteria, stylobate, crepis, plinth and floor

The lower part of the outer colonnades consisted of euthynteria, crepis and stylobate (Fig. 4). Drains were set all along the euthynteria. The stylobate averages 0.202 m in height, and most of the blocks are missing except for some of the corners. On the crepis, all the blocks are preserved except one in the middle of the north stoa. Plinth blocks were laid on the stylobate to erect Corinthian columns. The plinth blocks of the outer colonnades are 0.860 m (av.) across and 0.185 m (av.) high, whereas those of the inner colonnades are circular with a diameter of 0.900 m (av.) and a height of 0.265 m (av.). All the blocks for the lower part of the colonnades were of limestone. The floor of the stoas is covered by mud as it was when excavated. However, it seems to have been floored with pebbles and stucco, as a layer of pebbles can be observed a few centimeters beneath the present surface. The floor is slightly sloped toward the outer colonnades. The identical inclination of the floor at each stoa indicates that the floor was constructed to be sloped from the beginning.

2) Drains

Drains were built all along the outer colonnades (Figs. 4, 9). The blocks were of limestone and measured ca. 0.70 m in width and 1 - 1.7 m in length. Channels, ca. 0.50 m wide and ca. 0.10 m deep, were grooved on the top. The drains were sloped from the northeast corner toward the southwest. Drained water ran from the fountain house on the east end of the north stoa through an underground pipe to the northeast corner of the outer colonnades, where it came out and was divided into two flows. One ran towards the west then to the south, the other towards the south then to the west, joining again at the southwest corner. Then the water was drained out of the Asklepieion through a small tunnel. There were 16 ellipsoidal basins on the drains to keep the channels clean, four on each side with intervals of ca. 13 m at the north and south stoa and ca. 11.5 m at the east and west stoa. The basins were 0.76 m long, 0.46 m wide and 0.33 m deep.

3) Back walls

The back wall of the north stoa is preserved in very good condition up to the floor level of the Sevasteion (Fig. 4). The wall consisted of toichobate, orthostate and its crowning course, and the main part which was finished roughly as bedding for stucco. All the wall blocks were of limestone. The orthostate blocks were seemingly joined with clamps, since many holes of breakage on the top of the orthostate would indicate that iron clamps were taken from the joints. On the other hand, the blocks of the main part were joined only with stucco. The wall of the east stoa is

preserved mainly along the Ekklesiasterion. The north end is preserved ca. 6 m high, which was the highest place of the seats, and the south end is ca. 1 m high. The wall of the east stoa is approximately 1 m thick and ca. 0.30 m thicker than the other walls, because it is also a sustaining wall for the seats of the Ekklesiasterion. For the rest of the section, the wall of the east stoa is preserved well up to the height of the orthostate. Most of the back wall of the south stoa was also preserved very well to the height of the orthostate except at its west part. However, peculiarly, the upper parts of the walls are completely gone in contrast to the good condition of the orthostate. At the south stoa, it is clearly observed that the orthostate of the south wall was formed with two rows of vertical blocks on its outer and inner sides, and had three buttresses at intervals of 17.5 m to support the wall. There was no room behind the south stoa. At the west stoa, there were 8 rooms at the back. However, the back wall of the west stoa is gone.

Traces of stucco can often be observed on the back walls from place to place. They are observable on the edges of the anta blocks at the entrance of the Bouleuterion, along the edges of the crowning course of the orthostate at the north stoa, on the corner of the North Propylon, and particularly on the wall of the fountain house at the east end of the north stoa. Thus, all the walls of the stoas higher than the orthostate must have been stuccoed. It is an open question as to whether these walls were painted or not.

On the top of the northeast corner of the wall, a shallow cut (depth = ca. 45 cm, height = ca. 45 cm, width = ca. 45 cm) is observed. It seems to be a trace of a square hole for bedding of the diagonal crossbeam of the stoa. However, it seems to be too shallow to place the end of a long beam, and further study will be needed.

4. Dislocated Blocks

More than two hundred architectural blocks of the stoas remain in and around the Asklepieion. 33 blocks were measured and drawn in our survey. Almost all the blocks are poros, and plinth blocks and sima blocks are of limestone. The blocks were deteriorated or weathered to some extent due to the softness of the poros. The measured dimensions inevitably include some errors caused by this deterioration and weathering. It is noteworthy that some parts of entablature of the east and west stoa were found as they fell down probably due to an earthquake. They are left as they were found, and it is expected that the original surfaces of the entablature will be exposed intact in the near future. Its details will be described later. The column drums indicate that the columns had only 20 flutes. This number of flutes is unique, because usual Corinthian columns had 24 flutes. It is noteworthy too that the columns were not only fluted but also reeded on the lower part.⁹

1) Columns

Drums

Detailed investigation of the column drums shows that there were five types for the number and place of reeded flutes. A-type had 20 reeded flutes all around the column drum. B-type had also 20 reeded flutes all around but only on the lower part of the drum. C-type had 20 normal flutes all around without reeded flutes. D-type had 9 normal and 11 reeded flutes; i.e., the column was fluted normally half way round and reeded on the other side. E-type is a variation of D-type, and only the lower part was fluted and reeded as D-type. The types are shown in a chart as follows.

	normal flutes	reeded flutes	Position of reeded flutes
A-type	0	20	All the way round the column
B-type	0	20	All the way round the lower part
C-type	20	0	(No reeded flutes)
D-type	9	11	half way round the column
E-type	9	11	half way round the lower part

Fig. 5 Column base (B09, A-type)

Fig. 6 Inner plinth and base (B04, A-type)

Fig. 7 Architrave-frieze block

Fig. 8 Corinthian capital

Table 1 Measurements of the Stoa (Plan)

Elements		(m)	number of data
Length of stoa (inside of wall)	North	71.957	
	South	72.087	
	East	66.953	
	West	67.184	
Axial length of colonnade	South, North	53.309	
	East, West	48.174	
Length of stylobate at outer colonnade	South, North	52.409	
	East, West	47.274	
Length of crepis at outer colonnade	South, North	51.941	2
	East, West	46.806	2
Axial spacing at outer colonnade	South, North	2.423	
	East, West	2.409	
Depth of stoa between edge of stylobate and inside of wall	North	9.774	6
	South	9.776	3
	East	9.843	6
	West	9.664	5
Distance from edge of stylobate to inner column axis	North	5.278	12
	South	5.103	1
	East	5.244	10
	West	5.272	6
Width of crepis		0.234	30
Width of plinth		0.860	13
Setback from edge of stylobate to plinth		0.020	12
Distance from edge of stylobate to centre of plinth		0.450	

Table 2 Measurements of the Stoa (Elevation)

Elements of outer colonnades	(m)	number of data
Height of crepis	0.216	2
Height of stylobate	0.202	27
Height of plinth	0.185	7
Diameter of base	0.808	1
Height of base	0.220	3
Lower diameter of column	0.626	4
Upper diameter of column	0.533	2
Height of capital	0.457	2
Thickness of architrave (bottom)	0.578	front (2)
Thickness of frieze (top)	0.707	back (3)
Height of architrave & frieze (front)	0.755	2
Height of architrave & frieze (backer)	0.521	3
Axial distance between bull-heads	0.485	17
Height of cornice	0.292	4
Height of sima	0.163	1

Elements of inner colonnades	(m)	number of data
Diameter of plinth	0.900	32
Height of plinth	0.265	15
Diameter of base	0.851	1
Height of base	0.224	5
Lower diameter of column	0.667	7
Upper diameter of column	0.548	3
Height of capital	0.602	4

With these results, it is reasonable to think that there were two kinds of columns with reeded flutes on the lower parts. One is the column with 20 reeded flutes all around, and the other with 9 normal flutes half way round and 11 reeded flutes on the other half.

Bases

20 base blocks were found: 17 on the round plinths of the inner colonnades and 3 left on the ground. 2 of them were measured and drawn in our survey (Fig. 5). All the column bases were combined and carved with lower parts of column shafts (Fig. 6). There are two types of base blocks, which can be named A-type and D-type corresponding to the types of the column drums which were described above. 12 A-type blocks and 4 D-type blocks were found, and the rest are unknown. The A-type is larger with 20 reeded flutes all around, and D-type is smaller with 9 normal and 11 reeded flutes. The shaft diameter of A-type blocks is 0.710 m (av.) and that of D-type 0.626 m (av.). The diameter of the lower torus of A-type block (no. B04) is 0.851 m (av.), and that of a D-type block (no. B09) 0.808 m. The heights of the smaller bases average 0.220 m and those of the larger ones 0.224 m (av.). The base molding is a normal Attic base with torus, scotia and then torus again. On the top of some blocks which are not broken, dowel holes are observed.

Capitals

The capitals of the columns were Corinthian. Every capital differed in the form of its acanthus leaves, volutes and decorations, etc. However, they can be categorized into 2 types: one is smaller in size with comparatively large volutes and 24 acanthus leaves or 12 leaves in lower and upper rows (Fig. 8), the other one is larger without any volutes and with 16 acanthus leaves or 8 leaves in each row. The smaller one is 0.457 m (av.) high and the larger 0.602 m (av.). They are of sandy poros and not in good condition, being damaged, deteriorated and weathered. It was observed that they were finished with stucco. Small sculptures of Eros (or Cupid) were carved on the sides of each capital with their hands opened and placed on the helix at their sides. They have their wings expanded on their shoulders and were placed in the middle of abacus. On the top of the capital, there was circular bedding with a diameter of 0.27 m which projects 1cm to place an architrave block above.

Reconstruction of the columns

With the observation of the column drums, base and capitals, it is evident that there were two types of columns, smaller and larger in lower diameter of the shafts. The smaller one had a smaller base and capital and a shaft with 20 flutes, 11 of which were reeded on the lower part. The larger column had a larger base and capital and its shaft had 20 flutes, all of which were reeded on the lower part.

On which colonnade were these two types of columns used? It is evident that the smaller columns were used for the outer colonnade and the larger columns for the inner one. This is firstly because the round plinth of the inner colonnade was 0.90 m in diameter and the rectangular plinth of the outer colonnade was 0.86 m square, and secondly because the smaller column had reeded flutes half way round on its lower part. The latter reason is from an aesthetical point of view. That is, the columns of the outer colonnade should have been unreeded on their outer faces to produce the sharp shadow lines created by unreeded flutes.¹⁰ The reeded flutes spoil this effect.

Concerning the height of the columns, the number of their blocks and their combination, the discussion must be very general, because there is no decisive evidence. However, we have a clue for the height of the outer columns. A complete set of entablature was found 5.3 m away from the east stoa as it fell down probably due to an earthquake. This suggests that the total height of the outer columns would have been roughly 5.5 - 6 m. The height of the shaft is, extracting the heights of the base and capital, 4.8 - 5.3 m. The heights of the column drums are variable and it is not possible to predict the precise number of drums. However, considering that the average length of the drums seems to be approximately 1 m, the shafts would have been composed of four or five drums. The shafts of the inner columns, which were a little larger than the outer ones, must have been composed of four or five drums as well. The height of the reeded part of the flute, which is 1.60 - 1.80 m high and approximately equal to the height of a man, is thought to be about one third of the column height, and the reeded flute.¹¹

Summing up, the combinations of column blocks would have been conjectured as follows.

Outer column: a smaller base (D-type), drums (D-type, E-type, 2 C-types), and a smaller capital

Inner column: a larger base (A-type), drums (A-type, B-type, 2 C-types), and a larger capital

2) Entablature

Some 12 m of the entablature of the east stoa was excavated intact as it fell down on the east side of the altar. It was found 5.3 m away from the east stoa with its exterior facing down and with its geison touching the altar all the way along. Part of the entablature of the west stoa was also found at the west side of the temple. It is about 9.5 m long and 4.3 m away from the west stoa, and was found as well with its exterior down and with its geison touching the crepis of the temple. These entablature blocks do not remain in good condition compared with those beside the altar, probably because of the impact when falling. It is likely that the same earthquake caused the simultaneous collapse of the stoas, judging from the fact that the blocks lie parallel with the colonnade.¹²

The architrave and frieze were combined and carved as one block (Fig. 7). The architrave was divided into three fasciae as usual. According to the measurements of two well-preserved blocks, the architrave is 0.413 m (av.) high and the frieze 0.342 m (av.), 0.755 m in total, and the blocks are 0.264 m (av.) thick at the bottom. The frieze had a relief of alternating bucranii or bull skulls and round vessels for libation which were festooned continuously. The bucranii were set at the ends of the blocks and above the columns.

A unit of a bucrania and a libation vessel was 0.485 m long (av.). The axial spacing¹³ of the east and west stoa is 2.409 m and that of the north and south stoa 2.423 m. Thus, there were 5 units in an axial spacing. However, the corner block had 4 and a half units, because the corner block was cut to join it with an adjacent block. With 20 spans at the west and east stoas, there were 99 (= 20 x 5 - 1) bucranii. The north and west stoas had 22 spans, and there were 109 (= 22 x 5 - 1) bucranii.

The backer block is 0.521 m (av.) high and 0.314 m (av.) wide at the bottom. Behind the outer architrave-frieze block, the backer, or inner architrave-frieze block was set. It is shorter than the outer block. The architrave was divided into three fasciae and the frieze was simply planed without relief. Holes of clamps remain on the top to join with the adjacent blocks. The backer on the southeast corner of the colonnade had a shallow diagonal cut which was probably for a beam to be set.

13 cornice blocks were found. They have dentils on the front and small cuts to support rafters on the back. They indicate that the section of the rafter is ca. 0.15 - 0.18 m square. There is also some evidence to show that some of the architrave-frieze blocks were reused as cornice blocks of the west stoa. Some sima blocks were found and are now stored in the museum. On the front of the sima, there are spouts of lion heads, and between them was a relief of rinceaux to decorate. The spacing between the lion heads is ca. 0.47 - 0.49 m, and this indicates that there were 5 lion heads in an axial spacing. At the front top of the blocks, there are dowel holes to join antefixes and cuts to put tiles on.

5. Dimensions of the stoas

It is necessary to know the precise dimensions of the building in order to analyze the planning of the building. However, the actual architectural remains are complicated, and their measurements include many errors for various reasons. Thus, the measurements are taken several times at several places and the dimensions were averaged. Next are the basic dimensions of the stoas which were measured and calculated (Tables 1, 2).

The length of the crepis was 46.789 m at the east stoa, 46.823 m at the west stoa (av. 46.806 m, error 17 mm), 51.943 m at the north stoa and 51.939 m at the south stoa (av. 51.941 m, error 4 mm). The construction work seems to have been very precise with only small errors. The stylobate lengths, which were probably more basic for the building, should be calculated by adding the tread widths of the crepis to the crepis lengths, because

Fig.9 Details of the northeast corner

the stylobate only partially remains. The tread width of the crepis averaged 0.234 m from 30 measurements. Consequently, the average lengths of the stylobate were 47.274 m ($= 46.806 + 0.234 \times 2$) at the west and east stoa and 52.409 m ($= 51.941 + 0.234 \times 2$) at the north and south stoa.

The axial length of each colonnade is the sum of each stylobate length and the distance from the stylobate edge to the center of the plinth. The plinths of the outer colonnades, which were 0.860 m across, were set 0.020 m (av.) away from the edge of the stylobate. Thus, the columns were set 0.450 m ($0.860/2 + 0.020$ m) away from the edge of the stylobate. Consequently, the axial lengths of the colonnades at the north and south stoa were calculated as 53.309 m ($= 52.409 + 0.450 \times 2$) and those at the east and west stoa as 48.174 m ($= 47.274 + 0.450 \times 2$).

The number of spans of the outer colonnades at the east and west stoa was counted as 20, judging from the number and position of the remaining columns of the inner colonnades. That of the north and south colonnade was counted as 22 in the same way. It is observed that there was neither angle extension nor contraction of axial spacing at the northeast corner. In other words, all the columns of the outer colonnades were spaced at regular intervals. The axial spacings are calculated by dividing the whole axial lengths of the colonnades by the number of spans. Thus, the axial spacing of the north and south colonnade was 2.423 m ($= 53.309/22$) and that of the east and west colonnade 2.409 m ($= 48.174/20$).

The depths of the stoas—that is, the distances from the edges of the stylobate to the toichobate of the back walls—were measured at 3 - 6 points at each stoa. The measurements certainly include some differences and errors. Here, the averages were taken as their 'true' depths. They were 9.774 m at the north stoa, 9.776 m at the south stoa, 9.843 m at the east stoa and 9.664 m at the west stoa. We have no clear reasons for these differences.

The lengths of the back walls were 66.953 m at the east stoa, 67.184 m at the west stoa, 71.957 m at the north stoa and 72.087 m at the south stoa. The error of 0.231 m between the east and west stoa and that of 0.13 m between the north and south stoa must have been caused by a land movement at the southwest corner of the Asklepieion where the original ground level was low and the stoas were constructed on high foundations.

To identify the location of the inner colonnades, the distances from the crepis to the centers of the inner plinths were measured. From these dimensions, the distances from the edges of the stylobate to the axis of the inner colonnades were calculated as 5.244 m at the east stoa, 5.272 m at the west stoa, 5.278 m at the north stoa and 5.103 m at the south stoa. The smaller distance at the south stoa is not very reliable because there remains only one plinth, while there are more at the other stoas.

6. Conclusion

The Asklepieion in Messene shows strong characteristics of Hellenistic architecture in its symmetrical and axial plan. In particular, the surrounding square colonnade gives a very impressive visual effect to the spectators, playing a role of perspective background to the temple which was situated in the center of the court. This type of planning of the Asklepieion was one of the first predecessors of the later Hellenistic and Roman sanctuaries. However, there was no detailed information or analysis about its architecture, and thus the authors' new measurements and drawings provide new architectural information for the study of the Asklepieion. Especially, the study of the Corinthian order of the colonnades is essential and the main points are summarized as follows.

- 1) The Corinthian order of the surrounding stoas, the use of which was very rare at that time, shows a strong contrast to the Doric order of the temple. The outer Corinthian columns, which had larger diameters than the inner columns, had 24 flutes and their lower parts were reeded on the inner faces. However, the inner columns had reeded fluting all around on the lower part.
- 2) In particular, the relief of bucrania and libation vessel which decorated the frieze all around would have given a striking impression to the spectators in contrast with the simple Doric frieze of the temple.
- 3) Two kinds of stones were used for the Corinthian order. The columns, architrave and frieze were of poros and were probably stuccoed. On the other hand, the cornice was of limestone.

Based on the survey results above, the authors will study the planning of the sanctuary, the reconstruction of the upper structure of the stoas and the building technique in future works.

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Notes

- 1 Pausanias, "Description of Greece" IV, 27, 5-7, Jones, W. H. S., The Loeb Classical Library, Cambridge/Mass., London, 1977.
- 2 Orlandos, A. K.; Prakt 1957, 121-125, Fig.53-58; 1958, 177-183, Fig.137-142; 1959, 162-173, Fig.136-145; 1960, 210-227, Fig.162-169; 1962, 99-112, Fig.103-120; 1963 122-129, Fig.94-105; 1964,96-101, Fig.99-109; 1969, 98-120, Fig.121-136; 1970, 125-141, Fig.172-184; 1971, 157-171, Fig.191-03;1972, 127-138, Fig.103-116; 1973, 108-111; Ergon 1958, 142-148; 1959, 110-117; 1960, 159-167; 1962, 119-132; 1963, 88-102; 1964, 90-101; 1969, 97-132; 1970, 100-131; 1971, 144-173; 1972, 67-83; 1973, 79-82; 1974, 62-73; 1975, 107-116. Although Orlandos reported about the site annually in these articles, the final report was not published. Orlandos published some

- drawings of the Asklepion in scale of about 1 to 500 in Praktika and Ergon, but there is neither dimensional data nor description of the details.
- 3 Themelis, P. G.: Prakt 1986, 74-82, Fig. 17-22; 1987, 73-104, Fig. 64-80; 1988, 43-79, Fig. 31-57; 1989, 63-122, Fig. 54-94; 1990, 56-103, Fig. 31-74; 1991, 85-128, Fig. 50-78; 1992, 60-87, Fig. 20-27; 1993, 48-72, Fig. 25-49; 1994, 69-99, Fig. 19-48; 1995, 55-86, Fig. 13-42; 1996, 139-171, Fig. 53-72; 1997, 79-113, Fig. 32-65; Ergon: 1986, 100-110; 1987, 98-104; 1988, 27-46; 1989, 30-37; 1990, 26-35; 1991, 28-35; 1992, 27-41; 1993, 26-43; 1994, 37-42; 1995, 34-42; 1998, 39-50.
 - 4 The first season was from July 11 to September 8, 2001, and the second from July 17 to August 16, 2002. Our permission of survey was limited only to the stoas and Sevasteion by the Society of Messenian Archaeological Society. Other buildings such as the Doric temple, Ekklesiasterion, Bouleuterion and Artemision have been studied by other architects and archaeologists. The site situation before the excavation was not reported by the excavator, and it is unknown to what extent the architectural remains had been exposed on the earth.
 - 5 See also Yoshitake, R. et al., Architectural Survey of Asklepion at Ancient Messene 2001(1) - Outline of the Stoa, AIJ Kyushu Chapter Architectural Research Meeting (Planning), Vol.41-3, 2001, pp.477-480; Hayashida, Y. et al., Architectural Survey of Asklepion at Ancient Messene 2001(2) - Dimensions of the Stoa, ibid, 2001, pp.481-484
 - 6 The Hippodamian street system is being investigated by Mueth-Herda, S. of Free University of Berlin, and her study will be published in the near future. For partial results, see Mueth-Herda, S., Street Network and Town Planning of Ancient Messene, in Symposium for International Collaborative Studies on Ancient Messene, Tokyo, June 29, 2002, pp.16-30.
 - 7 The angles are 90.008 degrees between east and north stoa, 89.973 between north and west stoa, 90.022 between west and south stoa, and 89.997 between south and east stoa.
 - 8 Themelis, P. G., Ancient Messene - Site and Monuments Athens, 1998, p.17. The dating should be studied also from the architectural viewpoint through our study.
 - 9 Coulton mentions the role of reeding of flutes in his book as 'a very common practice in Hellenistic stoas....the purpose was presumably to avoid damage to the fragile arrises from traffic passing through the colonnade.' See J. J. Coulton, The Architectural Development of the Greek Stoa, Oxford, 1976, p.112.
 - 10 This kind of aesthetic effect of flutes was not necessary for the inner columns and this is the reason that the inner columns were reeded all the way around. The reeded flutes must have been created originally for the normal flutes not to be damaged by traffic of people around the columns. Thus, the lower parts of the columns should have been protected by the reeded flutes. This kind of technique is also seen in the lower part of Doric columns of the Stoa of Attalos which were unfluted.
 - 11 See J. J. Coulton, ibid, p.112-114.
 - 12 This kind of collapse of colonnades also happened at the east and west stoa which surrounds the Stadium in Messene. Many columns of the stoas fell down in a row at the same time. See Themelis: Prakt 1997, Fig. 51.
 - 13 Two axial spacings could be measured at the east end of the north stoa. The first axial spacing is 2.419 m and the second 2.436 m. The error is 17 mm and this could be negligible. cf. Fig.9

和文要約

1. 研究の目的

ギリシアの古代都市メッセネはペロポネソス半島南西部にあるカラマタから、北に約17kmの位置にあり、紀元前369年に建設されたとされている。アスクレピオス神域はオランダスにより1957年から1974年にかけて組織的な発掘調査が行われたが、最終的な発掘報告書は出版されていない。熊本大学ギリシア古代建築調査団(団長:伊藤重剛)は、メッセネ考古学協会の許可を得てアスクレピオス神域の実測調査を行った。研究の目的は、未だに明らかになっていないストアの調査を行い、そのデータに基づいて復元し、建築史としての位置づけを行うことである。本論文では、実測調査に基づく遺構の概要と研究成果の一部を報告するものである。

2. アスクレピオス神域とストアの概要

アスクレピオス神域は、都市メッセネのほぼ中央に位置し、北側に隣接するアゴラと共に文化的・政治的中心であったと思われる。アスクレピオス神域中央には、神殿と祭壇があり、その周囲には5つのエクセドラと彫刻の台座が多数残っている。この四角の広場は4つのストアで囲まれており、その背後には部屋がある。東側は遺構の中で最も大きな建築群があるところで、民会場(エクレシアステリオン)、東門(プロピロン)、そして議事堂(ブーレウテリオン)がある。西側は8つの小部屋に分けられており、北端の小部屋はアルテミス神の拝殿であった。北側は全体がセバステイオンと呼ばれており、中央には階段を伴う北門(プロピロン)があって、セバステイオンはこの北門によって左右2つの大部屋に分割されている。ストアは2重の列柱を持つ、コリント式ストアである。建設年代については研究途中ではっきりしないが、アスクレピオス神域全体の建設は215/4B.C.とされている。

3. 建築遺構

正面円柱(外側円柱)の基壇は、クレピス、スタイロベイトの2段か

らなる。クレピスは、北ストアの中央部分と南西隅部分を除いて大方残っているが、スタイロベイトはほとんど破壊されている。スタイロベイトの上には、プリンスを置いており、正面円柱のプリンスは平面がほぼ正方形で、内部円柱のプリンスは、平面が円形をしている。後壁は、下から順に基礎、トイコベイト、オルソスタット、及び表面を粗くした切石の整層積みで構成されており、トイコベイトから上は石灰岩である。

4. 周囲に残された建築部材

神域のストアのものと思われる200以上の石材が発見され、その内33の石材を図化した。プリンスとシーマは石灰岩だが、その他の石材は砂岩(poros)であったため、直接円柱からエンタブラチュアまでの全体を復元できる石材はなかった。

5. ストア遺構各部の寸法

ストアの設計法の研究や復元のために、遺構各部の寸法を実測する必要があった。調査で得られた寸法を、その過程とともに示した。

6. 小結

メッセネのアスクレピオス神域は、ヘレニズム期の左右対称で軸線的な特徴を備えている。アスクレピオス神域のストアについて明らかにしたことを以下にまとめる。

1)ストアのコリント式オーダーは神殿のドリス式オーダーと強いコントラストを成している。ストアの外側円柱は直径が小さく、内部円柱は直径が大きかった。円柱には24本のフルートがあり、下の方は胡麻殻フルートになっていた。しかし、外側円柱の場合は内側のみに胡麻殻フルートがあった。

2)フリーズには、牛頭と聖盃が交互に並ぶ浮彫が施され、その間には花綱模様があった。

3)オーダーには2種類の石が使われていた。円柱、アーキトレイブ・フリーズ、コーニスにはボロス石、シーマは石灰岩で作られており、ボロス石はおそらくスタッコ仕上げであった。

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