THE PEDIMENTS OF THE MAUSSOLLEUM.

SOME years ago I ventured on a reconstruction of the Maussoleum, that was based on the principle of not overlooking the sculptured fragments in a monument of which the great renown was due, according to Vitruvius, to the work of the sculptors who were employed in its decoration: *quorum artis eminens excellentia coëgit ad septem spectaculorum eius operis pervenire famam*.¹ That it was never published is owing to the uncertainty I felt about the measures of the remaining architectural fragments, which I had not the means to control.

Now since F. Adler published his monograph on the Maussoleum,² which only came to my notice a short time ago, I may venture to indicate in how far I think his reconstruction, which in many respects does not differ from what I supposed, ought to be corrected in accordance with our texts and principally with the extant sculptural fragments.

Several of these, mostly it is true in very poor condition and difficult of access, are omitted in every reconstruction, or find a place which hardly provides them with any direct relation to the monument and which is without analogy in Greek architecture.

A basis with a horseman is certainly not unknown in the history of Greek art, and even a *venatio* occurs now and then as an isolated work, but these are usually separate monuments, for which a place is provided as well as may be in an often already overcrowded locality, not intrinsic parts of a well-planned scheme, as they might be in a modern construction.

The consequence of this is, that the fragment of the horseman has been quadrupled first and has even grown out into eight prancing warriors in the reconstructions of Fergusson and Adler; but on the other hand I miss in every one of them the boar and the ram, which appeal much less to the imagination.

A thorough publication of all the sculptured fragments of the Maussoleum, that are not in relief, is sorely wanted. As some of them are in an extremely mutilated condition a photographic reproduction would not do for all. The draped fragments Nos. 1048-1050 and 1061-1065 and the helmet, No. 1059, would certainly want a very conscientious draughtsman, working

¹ Vitruv. vii. 1. 12.

² *Das Mausoleum der Halikarnass*, Berlin, 1900.

under the constant control of an archaeologist. Most of the heads, and the fragments of the animals, would allow of a photographic reproduction if it could be obtained.

But I do not think that it is absolutely necessary to wait till some English scholar will undertake this difficult but promising task, to draw some of the conclusions that may be deduced from the existence of these fragments, several of which could not find a better place than amongst pedimental sculptures.

FIG. 1.—COLOSSAL SEATED FIGURE FROM THE MAUSOLLEUM.

The different size too of the diverse figures, varying from the colossal to life size, indicates such an employment, and may help to distribute each fragment to its relative place, nearer to the centre or the extreme corners of the composition. The colossal seated male figure, No. 1047 (Fig. 1), for example, would fit into or near the middle of a pediment and the helmet with the mask would suit the corner.

The colossal equestrian torso indeed would find its natural place in the centre of a pedimental composition. Analogies are not wanting. Of the

Heroon of Xanthos, the so-called Nercid monument, the left half only of the west pediment remains, but this shows just enough of the forelegs of a prancing horse to allow with absolute certitude the reconstruction of a horseman as principal figure in the centre of the composition. Of greater import still is the south pediment of the so-called sarcophagus of Alexander, where a horseman in Persian garments occupies the exact centre of the composition (Fig. 2). The likeness to the Maussoleum fragment is so close, that

FIG. 2.—‘SARCOPHAGUS OF ALEXANDER,’ FROM SIDON; SOUTH PEDIMENT.
(From Hamdy Bey and Reinach.)

with exception of the position of the right leg the torso seems the exact counterpart of this figure. As a helmet standing on the ground recurs in this same composition and the fragment No. 1064 is supposed to have worn a cuirass, one would be inclined to think of a battle scene for this pediment. This however would hardly account for numerous other fragments that may not be neglected. First of all No. 1095, the anterior half of a panther (Fig. 3), broken off behind the shoulder.³ The animal springs up with a movement that affords a close analogy to the panthers hunted in the basement-frieze of the sarcophagus of mourners.—I have not seen the hindquarters and a paw mentioned by Sir Charles Newton as corresponding in scale.⁴—There are half of the snout and both the feet of the forelegs of a wild boar at bay, which seem to allow of a reconstruction according to the south as well as to the north side of this frieze. Again there are fragments, which I have not seen, of a hound: part of the head, an arm, and a paw, mentioned by Sir Charles Newton.⁵ Nor can I give any further detail about the head of a lioness, presented by the British Government to the Imperial Museum at Constantinople⁶ or ‘part of the hindquarters of this or another lioness’ found in the excavations.⁷

The presence of two or three or even more different wild animals in

³ This animal has grown rather too large in my reconstruction by a mistake of the draughtsman.

⁴ *Halicarnassus, Cnidus, and Branchidae*, ii. p. 233.

⁵ *l. c.* 231.

⁶ *l. c.* 232.

⁷ *l. c.* 234.

the same hunting-scene is not improbable. The bas-relief of the short south side of the sarcophagus of 'Alexander' has only a panther, but the west side combines a lion and a stag; and the frieze of the sarcophagus of mourners, already mentioned, contains one bear, two wild boars, four panthers and five stags, not to mention the dead game that is hard to identify.

FIG. 3.—PANTHER FROM THE MAUSSOLLEUM.

I would therefore suggest that Maussollos himself, in the dress of a Persian Satrap, may have held, on a prancing horse, the middle of the pediment, attacking a lioness, supported on both sides by half armed attendants, hunting a panther and a wild boar. The fallen helmet may have belonged to the corpse of a victim of this perilous chase.

There are even more remnants of animals amongst the Maussoleum sculptures than those already named: the body of a colossal ram, No. 1097 (Fig. 4), a foot and part of the hind leg of which were also found; the head, forehead, and right hind leg of a boar No. 1096, 1-3, hardly exceeding life-size; and the large hoof of a bull, which I saw amongst the remains in the vaults of the British Museum and which is mentioned by Newton as possibly the hoof of an ox.⁷ The ram and the boar are not in violent action: they either stand still or move slowly. It is of course only a suggestion, but the combination of boar, ram, and bull reminds me of the Roman *suovetaurilia* and makes me think that that pediment, which must have held the colossal seated figure, may have represented an offering scene with precisely these animals.

As nothing, as far as I am aware, is known about Carian rites, this

must of course remain a mere conjecture, but that such a scene would not be inappropriate to a Heroon is shown by that of Xanthos, where an offering scene occurs in the lesser frieze.

I do not wish to lay much stress on the important place taken by the victims in the Parthenon frieze, which, though in the strictest sense, taken as a whole, an offering scene, is of quite a different character. On the other hand I would press the analogy of three contemporary pictures. We know little or nothing about the meaning of the famous sacrifice of bulls by Pausias, but, rather than some mythic or heroic subject, I would expect a political picture akin to Euphranor's work in the Stoa Basileios at Athens. Of Aristolaos too, the son of Pausias, a sacrifice of bulls is mentioned, and I cannot help thinking that all the figures mentioned by Pliny:⁸ Epameinondas, Pericles, Media, Virtue, Theseus, and the image of the Attic Demos, must

FIG. 4.—COLOSSAL RAM FROM THE MAUSSOLLEUM.

have belonged to one single composition, the centre of which was the *boum immolatio*. Further, Apelles is known from Herondas (iv. 59 f.) to have painted the sacrifice of a bull for the Asklepieion of Kos, probably. Later Roman reliefs, as that of the *Ara Pacis*, the altar of Domitius Ahenobarbus,⁹ or the triumphal arch at Susa, may perhaps retain some distant reminiscence of these earlier compositions.

At all events the boar and the ram are not intended to be seen close at hand. The ram gains immensely in the reduction of our figure and would certainly, at the height of the pediment, have rendered admirably in marble its woolly fleece. Thus seen it seems not unworthy of Skopas. I will not say too much of the style of the colossal seated figure, our Fig. 1, as I have not had the occasion to compare it thoroughly with the Atalanta from Tegea (*B.C.H.*

⁸ *Nat. Hist.* xxxv. 137.

⁹ Furtwängler, *Intermezzi*, p. 36, d.

xxi. 1901, Pl. VI.), but I feel sure that there is nothing, at least in the treatment of the drapery, that would be in the way of our theory. The same holds good as to the Maenad in which Prof. Treu has recognized the most famous work of Skopas.¹⁰ The strong lines that mark the folds of our torso speak even more clearly in that work.

To which of the pediments the different heads and torsos may have belonged, it is hard to guess. The only presumption that presents itself is that, at all events, the female heads can hardly come from the hunting-scene, and will therefore belong to the east pediment, that of Skopas. Their style, as far as I see, affords no objection. No. 1051 is already described as 'in the manner of Skopas' by Mr. A. H. Smith in his Catalogue.

I feel less sure about No. 1057, a male head, wearing the *kyrbasia*, but as this headdress is much worn in the hunting-scenes I should be inclined to assign it to the west pediment, that of Leochares.

I am perfectly aware of the objections that have been made to the theory of Prof. Loeschcke,¹¹ who seeks to find a reminiscence of the *venatio Alexandri* at Delphi (part of which, according to Plutarch,¹² was by Leochares), in a relief from Messene, but I do not think them of cardinal importance. Nor does it escape me that this work, the other part of which was said to be by Lysippos, was not erected by Krateros himself, but by his son Krateros whom he left an infant when he died in 321.¹³ But I think the extraordinary affinity of the horseman in this relief with the torso of the Maussolleum goes a good way to demonstrate that Prof. Loeschcke was on the right scent and that we are not wrong in ascribing the equestrian fragment to Leochares.¹⁴

At least Lucian, who makes the shade of Maussollos say: τὸ δὲ μέγιστον, ὅτι ἐν Ἀλικαρνασσῶ μνῆμα παμμέγεθες ἔχω ἐπικείμενον, ἡλικὸν οὐκ ἄλλος νεκρός, ἀλλ' οὐδὲ οὕτως ἐς κάλλος ἐξεσκημένον, ἵππων καὶ ἀνδρῶν ἐς τὸ ἀκριβέστατον εἰκασμένων λίθου τοῦ καλλίστου οἶον οὐδὲ νεῶν εὖροι τις ἂν ῥαδίως, would hardly have spoken thus of the quadriga and the small figures only if the really first rate sculptures had stood around the monument instead of forming an intrinsic part.

I have thus far abstained from the question whether a reconstruction of the Maussolleum would allow of the introduction of pediments in the architecture, though they are suggested, as has been observed, by the *brevius a frontibus* of Pliny. They are lacking in all projects of restoration which I have seen, save in that of Mr. Oldfield,¹⁵ and I cannot invoke him to my aid as his pediments are too small to contain the groups I propose, and as I could never accept the plan of his work. Adler, I think, has said all that is wanted to disprove his ingenious proposal.

But there is nothing which hinders us from introducing two pediments

¹⁰ *Mélanges Perrot*, p. 317.

¹¹ *Jahrb.* iii. (1888), p. 189.

¹² *Alex.* 40.

¹³ *P.C.H.* xxi. (1897), p. 598; Paul Perdrizet, *J.H.S.* xix. (1899), p. 273.

¹⁴ M. Perdrizet must surely be wrong in

finding a replica of the *venatio* in Mr. Evans' intaglio. The words of Plutarch: τοῦ βασιλέως τῷ λέοντι συννεστώτος exclude a fallen king.

¹⁵ *Archæologia*, liv. (1895), p. 273.

FIG. 5.—SUGGESTED ELEVATION OF THE MAUSOLLEUM.

in Adler's reconstruction, if we may be allowed to elevate the attica, which he rightly assumes, by some feet (Fig. 5). This would only, I think, be to the advantage of the building, if compared with antique analogies. We ought then to make it 15 ft. high,¹⁶ so that with the 24 steps of the pyramid, that are about $22\frac{1}{2}$ ft., the height equal to the pteron of 25 cubits, that is $37\frac{1}{2}$ ft., would be obtained.

I would further suggest on the top of this pyramid a basis, the *meta* of Pliny, of $22\frac{1}{2}$ ft., carrying the quadriga with the statues¹⁷ of $12\frac{1}{2}$ ft. or of 25 ft. and 10 ft. without them. Thus only 30 ft. out of the 140 ft. would remain for the solid basement, which I hold is an enormous advantage over most of the proposed reconstructions, as it would bring the sculptured frieze nearer to the eye of the spectator.

If we add to the suggested measures of 30 ft. for the basement and $37\frac{1}{2}$ ft. for the pteron, $12\frac{1}{2}$ ft. for the pediments, with a tympanum of 10 ft. high, we find 80 ft. to the top of the pediment, the exact measure given by Hyginus as that of the Maussolleum. The cypher of Vibius Sequester of 180 ft. is then a contamination of the values given by Pliny and Hyginus, and this looks more likely than the double error accepted by Adler.

And that of a building like the Maussolleum the height should be mentioned without the surmounting spire is no wonder. Who would think of recording the total height of a Gothic church, with a spire on the cross vault, like that of Haarlem or Alkmaar, without including the tower expressly, as Baedeker does, just as well as Pliny? About the palace at Amsterdam, the ancient townhouse, which allows of a closer comparison, Baedeker expresses himself in this guise: 'It measures 33 metres high and the cupola . . . is 51 metres.'

As to the high measures I have accepted for the basis of the quadriga, I feel sure that they are corroborated on all sides, notwithstanding that I failed to find a form pleasing to the eye in following the suggested restoration of the Lion-tomb. My arguments are first the words of Pliny who speaks of a *metae cacumen*, then the comparison of analogies as the Lion-tomb at Cnidus, but especially the later large works that show influence of the Maussolleum, as the tomb of Hadrian and the Tropaeum of Trajan at Adam-klessi. Pullan's restoration of the Lion-tomb and that of the Mausoleum of Hadrian by Hülsen after Borgatti¹⁸ are more or less hypothetical, and thus open to criticism. The most convincing parallel, however, is the Tropaeum Trajani, as it has been drawn by Prof. Reichhold after the reconstruction of Prof. Niemann, corrected by Prof. Furtwängler¹⁹ in a way that has been accepted by Prof. Benndorf.²⁰ The support of the trophy

¹⁶ When speaking of feet I mean Greek feet of 0.328 m., not English.

¹⁷ The statues, if not in the quadriga, may have either stood in the cella, or in the east pediment or even perhaps on the long sides against the attica, above each column a statue. I doubt very much whether the lions could have stood there, as Adler makes them,

rather than on the peribolos wall.

¹⁸ *Röm. Mith.* vi. (1891), 138.

¹⁹ *Das Tropaeion von Adamklessi und provincial-Römische Kunst, Abhandlungen der k. bayr. Akademie der Wiss.* I. Cl. xxii. Bd. iii. Abt. München, 1903, Pl. I.

²⁰ *Jahresh.* vi. (1903), p. 249, Fig. 132.

there is at least a fourth part of the whole monument, with the trophy as restored it certainly is more than half of the entire height.

Returning to the earlier analogies, it seems worth while to compare the proportions of the Lion-tomb, as restored by Pullan, with those of the Maussoleum. I have to that effect reduced the measures of this monument to a modulus of $\frac{1}{140}$.

	Maussoleum.			Lion-tomb.	
Quadriga	10'	12½'	} 35	lion c. 13	} 39
Meta	25' or	22½'		c. 26	
Pyramid steps	22½'		} 37½' } 75	c. 20	} 28
Attica	15			c. 8	
Pteron	37½'	37½'		c. 47	
Basement :	30	30		c. 26	
	<hr/> 140			<hr/> 140	

The greatest divergency is in the proportion of the columns and order to the pyramid and this of course is a result of the smaller plan, that requires a lower attica and less steps to let the *meta* rise out above the order when seen from a short distance.

I feel, however, serious doubts about the usual interpretation of the word *meta* here. The form designated as meta is always conic, as in the *meta sudans*, a pile of wood, a hayrick, a sugar-loaf, a trained boxtree, a cypress, the shadow of the earth, or a hill, as in these words of Livy: ²¹ *Ipse collis est in modum metae, in acutum cacumen a fundo satis lato fastigatus*, that seem to illustrate the text of Pliny. ²²

As this shape would never do for the basis of a quadriga I suspect Pliny once more wrongly translated a Greek word. This must of course have been *σῆμα*, which means *goal* as well as *tomb*. The idea of the architect will have been to combine the three elements of a heroon, a pyramid, and a tomb into one single new form.

We have found till now only the facts about the sculpture and the interpretation of Pliny's words pleading for pediments, and we ought to look out for analogies. We might of course find these in the heroon of Xanthos (the so-called Nereïd-monument) as well as in the Pisidian tombs of Tib. Cl. Agrippina Aurelia Ge and Aurelia Artemis ²³ if the pyramid and meta were not lacking there as well as the attica. On the other hand the existing monuments, that with the pyramid combine an attica, show no trace of pediments. It is precisely the combination of pediments and attica that we must look for. There is but one monument of Greek art of this period that shows a similar combination, that is the sarcophagus of the mourners (Fig. 6), where the unexplained parapet suggests the influence of a work showing the disposition we propose, as well in this astounding peculiarity as in the basement that supports the whole and makes it akin, not to the ancient temples, but to the group of sepulchres, the most glorious of which is the Maussoleum.

Moreover, the combination of pediments and attica is not rare in Roman

²¹ xxxvii. 27.

²² Forcellini, *i.v. meta*.

²³ Heberdey und Wilberg, *Jahresh.* iii. (1900), 117.

architecture, especially in the triumphal arches, of which that of Tiberius at Orange is the most splendid example. If we knew the prototype of the Roman triumphal arch, which, as Dr. Paul Graef²⁴ suggests, ought to be sought in the gates or porches and the tetrapylon of the Hellenic city, I have no doubt we should find more material there, as the propylaea of the Acropolis at Athens show already the embryonic beginning in the superposition of the pediments.

FIG. 6.—‘SARCOPHAGUS OF THE MOURNERS,’ FROM SIDON.

I have expressed the measures of my reconstruction in Greek feet instead of giving the values as calculated by Adler in metres, and I think the following specification of Greek feet reduced to metres will show, by comparison with the figures of Adler, the difference to be so small that it may be neglected. I will add another consideration. The figures expressed in feet show fractions. Some of these will disappear when reduced to cubits, but all of them cannot be reduced to cubits any more than the whole sum of 140 feet. Still it is easy enough to obtain whole numbers if we are allowed to accept a modulus of $2\frac{1}{2}'$ and I have introduced in the first column this experiment.

	Modulus of $2\frac{1}{2}'$.		Greek feet.	Metres.	Measures of Adler in metres.
Quadriga . . .	4	} or { 5 } 14	10	} or { 12½ } 3·28	} or { 4·10 } 4·05
Meta . . .	10		25		
Pyramid. . .	9	} 15	22½	} 7·38	} 7·44
Attica. . .	6		15		
Pteron . . .	15	15	37½	12·30	12·27 (11·50)
Basement . .	12	12	30	9·84	
	56	56	140	45·92	

²⁴ Baumeister, *i. v. Triumph- und Ehrenbogen*, p. 1872.

FIG. 7.—SUGGESTED SECTION AND PLAN OF THE MAUSSOLLEUM.

I should even like to ventilate the question, if it is really impossible that the height of the pteron should be so divided, that $7\frac{1}{2}'$ would fall to the order and $30'$ to the columns. That would make for these 9.84 m. instead of the calculated height of 9.69 and for the order 2.46 instead of the measured 2.58 . The introduction at this place of the frieze of charioteers, which I would still prefer,²⁵ would only bring with it a reduction of 0.02 and would leave a difference of 0.10 and I do not insist.

I find a remarkable confirmation of my reconstruction in the proportions I have unwittingly come to. The height of the main building of $80'$ falls into two large sections: the basement of $30'$ and the superstructure of $50'$; that is to say they stand in the relation known as the *sectio aurea*.²⁶ The same division recurs if we look to the whole construction, where we again find the *sectio aurea* in the pyramid and meta that rise $50'$ above the $80'$ of the main building and bring the entire work that bears the quadriga to $130'$. So that the real standard of this work would be the height of the quadriga of $10'$ whereof the modulus we found would be the quarter.²⁷ It is hardly chance that would lead to proportions so generally admired in architecture.

I cannot abandon this subject without proposing one more problem.

Adler deals rather cavalierly with the *patet ab austro et septentrione sexagenos ternos pedes* of Pliny and his correction of this measure, written in full letters in the manuscripts, into 89 feet is altogether arbitrary. Adler calculates the distance from the axis of one column to the other at 3.34 m. If we again substitute for this value the nearest in Greek feet we obtain $10'$ (3.28) which makes hardly any difference and is as we have seen the standard measure of the whole monument. Thus $63'$ would nearly correspond to 7 columns with the 6 intercolumnia, the column having a largest diameter of 1.14 , nearly $3\frac{1}{2}'$. May we not be allowed to take this for the length of the cella? The front sides that were shorter, according to Pliny's *brevius a frontibus*, ought then to have been only $43'$. The nine columns in front would take from axis to axis $80'$ (equal to the height of the pediment top) and the eleven columns on the long sides $100'$. This would bring us to a sum of $360'$. Ten feet from these axial lines to the outside of the basement on all sides, would make the sum of $440'$ named by Pliny for the circuit (Fig. 7).

²⁵ The chariot race may of course have occupied the long sides, and the fronts may have held some other subject that would be better adapted, as the preparations for the race and the crowning of the victor. Still the archaistic relief, with Apollo, Artemis, and Leto, in the Villa Albani, the Berlin Museum and the Louvre (Schreiber, *die Hellenistischen Reliefbilder*, xxxiv, xxxv, and xxxvi) have a chariot race as well on the front as on the side of the temple seen in the background.

²⁶ I remind my readers that the *sectio aurea* divides a length in such a way that the quadrate of the larger part is equal to the

whole multiplied by the smaller. This never can be expressed in whole numbers, but is approached by the following series: $1:2=2:3=3:5=5:8=8:13=13:21=21:34=34:55=55:89=89:144$ etc., wherein each fourth number is the sum of the preceding first and second. It is evident that figures from $3-13$ are in use here, not the higher series from 34 till 144 . Which shows once more that not single feet, but the standard of 10 ft. is in use here.

²⁷ This is what the Greek author failed to see who thought he was very clever in reducing the $37\frac{1}{2}'$ of the pteron into 25 cubits.

This means, however, that the basement would measure 120' by 100', *i.e.* 39·36 × 32·80 m. instead of 38·91 × 33·09 m. (127 × 108 English feet) as given by Adler. But as he must needs have his measures from the rather untrustworthy plan of Pullan, this small difference of 0·45 m. and 0·29 can hardly be of any importance.

The plan would certainly gain by the proposed disposition in loftiness. Strong cella-walls perhaps 13' thick, would leave a chamber of 37' × 17', and bear the bulk of the weight of the pyramid, the *meta*, and quadriga, and a wider pteron would better permit the approach by a flight of stairs.²⁸

The form proposed is akin to the pseudodipteros, which Vitruvius²⁹ tells us was first used by Hermogenes as an *octostylon*, as we know in the temple of Artemis at Magnesia. But this is certainly no objection. The Mausolleum is *enneastylon* and then Vitruvius is speaking at this place about the temple and would not have introduced a sepulchre in this context. It is further known that the pretended innovation must have been only in detail or in the marble construction, as the type occurs as early as the temple G at Selinus, of course with a wooden roof. So rather than an objection the work of Hermogenes provides a parallel to the plan proposed for the Mausolleum.

The large distance which has to be covered over the pteron is no insurmountable difficulty and we may accept in principle a solution akin to that proposed by Pullan. (Pl. XXI. fig. 1.)

As to the bulk of the pyramid I would propose to cover those parts, that must have been hollow to lessen the weight, by overlapping stones, building a false arch.

Be this however as it may, the loftier the construction looks, and the weightier the pyramid appears to the eye the better it suits the words of Martial³⁰

*Ære nec vacuo pendentia mausolea
Laudibus immodicis Cares ad astra ferant.*

J. SIX.

AMSTERDAM.

²⁸ Mr. van Balen, who has drawn my plans for me, has indicated the stairs in the basement with dotted lines in the horizontal section through the attica.

²⁹ iii. ii. 8.

³⁰ *Epigramm.* i. 1.