

PAUSANIAS AND THE STYMPHALIAN BIRDS¹

ἐν Στυμφάλῳ δὲ καὶ ἱερὸν Ἀρτέμιδος ἐστὶν ἀρχαῖον Στυμφαλίας· τὸ δὲ ἄγαλμα ξόανόν ἐστι τὰ πολλὰ ἐπὶ χρυσοῦ. πρὸς δὲ τοῦ ναοῦ τῷ ὀρόφῳ πεποιημέναι καὶ αἱ Στυμφαλίδες εἰσὶν ὄρνιθες· σαφῶς μὲν οὖν χαλεπὸν ἦν διαγνῶναι πότερον ξύλου ποίημα ἢν ἡ γύψου, τεκμαιρομένοις δὲ ἡμῖν ἐφαίνετο εἶναι ξύλου μᾶλλον ἢ γύψου (Pausanias 8. 22. 7).

'In Stymphalos there is also an old sanctuary of Stymphalian Artemis. The image is of wood, mostly gilded. On the roof of the temple there are also representations of the Stymphalian birds. It was difficult to discern clearly whether they were made of wood or plaster, but my examination suggested that they were of wood rather than plaster.'

PAUSANIAS' reference to the Stymphalian birds of the temple at Stymphalos was taken by the German scholar, Blümner, to indicate that stucco reliefs were produced by the Greeks;² and, despite the caution of Miss E. L. Wadsworth,³ the inference that plaster was used for architectural sculptures of some form in Classical (or even pre-Classical) Greece has clearly been accepted by M. Cagianò de Azevedo and N. Bonacasa in the two great Italian encyclopedias of art.⁴ The surprising thing is that this idea should ever have gained currency. There is first of all no other evidence for plaster figure-work in the decoration of Greek buildings before Late Hellenistic times. Secondly, even if there were such evidence, Pausanias' observations are of doubtful relevance.

To take the last point first, it is by no means certain that the figures which Pausanias saw in the second century A.D. would have been as old as the Classical period. Even if the actual temple was fairly ancient,⁵ and even if it retained its pristine form, the sculptural decoration may well have been modified or altered much nearer Pausanias' time: indeed, he makes no claims about the antiquity of the birds.

The birds themselves are, in any case, somewhat irrelevant; for Pausanias eventually decided that they were of wood, not plaster. The real point at

¹ I am deeply indebted to my wife, Dr. Lesley A. Ling, and to Drs. A. J. Graham and W. H. Plommer for reading through this paper and making valuable comments or suggestions for improvements.

² H. Blümner, *Technologie und Terminologie der Gewerbe und Künste bei Griechen und Römern*, ii (1879), 143 n. 1; *R.E.* vii, col. 2095.

³ *M.A.A.R.* iv (1924), 11.

⁴ *Encyclopedia of World Art (Enciclopedia universale dell'arte)*, xiii, col. 630; *E.A.A.* vii. 525. The term γύψος (Latin 'gypsum' or 'gypsum') covered both the mineral gypsum and the product of its calcination, plaster of Paris (calcium sulphate), which was specially favoured in Hellenistic and Roman times for sculpture in the round and casting; but some ancient writers, in addition, confused gypsum with lime (calcium oxide):

Theophr. *De Lapidibus* 68-9; Pliny, *H.N.* 36. 182; cf. E. R. Caley and J. F. C. Richards, *Theophrastus on Stones* (1956), pp. 210, 213-22 (which I find more convincing than D. E. Eichholz's commentary [1965], pp. 132 f.); E. L. Wadsworth, *M.A.A.R.* iv (1924), 18 n. 2. Lime is the basis of the more durable plaster used in Greek and Roman times mainly for wall-surfacing and (in Roman times) for relief decoration: it is to this that we normally apply the term 'stucco'.

⁵ Pausanias says only that the sanctuary is old, not the temple-building. The temple is thought to have stood in the area now occupied by the ruins of the Katholikon, at the northern edge of the city: *R.E.* ivA, col. 450; N. D. Papachatzes, *Pausaniou Hellados Periegesis*, iv. *Achaika kai Arkadika* (1967), pp. 269 f., n. 4.

issue is not what Pausanias saw, but the ideas implicit in his words. Clearly he recognized the possibility that the birds might be made of plaster. Possibly he thought that they had been produced several centuries before his time, say before the Peloponnesian War. But this is no reason for us to assume that plaster sculptures existed at that period: living in an age when plaster was a common medium for sculpture, both in the round and in relief, Pausanias may well have been guilty of anachronism. He may have believed that the stucco reliefs and plaster statues which he saw around him were as familiar in Classical Greece as they were in his own world. To accept Pausanias' belief as established fact is dangerous unless corroborative evidence can be found.

There is one other possible reference, again in Pausanias,¹ to the use of plaster in sculpture of the Classical age; but here once more, for various reasons, it hardly supports Cagian de Azevedo's and Bonacasa's viewpoint. We are informed that the cult-statue of Zeus at Megara, created by Theokosmos with the help of Pheidias, was never finished owing to the Peloponnesian War, its face being of gold and ivory, and the rest of clay and plaster. Even if Pausanias is right about the presence of plaster, there is no certainty that the parts executed in cheap materials went back to the time of Theokosmos. I see no reasoning for assuming, as some have done, that they belonged to a model from which the sculptor was working:² they were presumably a later expedient to give the unfinished statue a semblance of completeness. But whether they were added by Theokosmos himself,³ or by the Megarians of another generation, we cannot say. And, in either case, they hardly imply a tradition of plaster sculpture in its own right—they represent the type of composite work well-known in Ptolemaic Egypt.⁴

The archaeological remains are unanimous in declaring that the Greeks of the seventh, sixth, and fifth centuries B.C. used plaster in its various forms only for plain surfacing.⁵ In architecture, it served to protect and beautify walls and other surfaces, mainly those constructed of the less fine materials, like limestone and volcanic tuff. At the same time it provided a ground for painted decoration, and was also employed to line hydraulic installations, such as cisterns and water-channels. In sculpture, it may sometimes have played a similar role. According to Cagian de Azevedo, figures carved from porous stone and set in exposed positions, like the pediments of the archaic temples on the Athenian Acropolis, were finished with stucco.⁶ But there is no sign of sculptures, whether in relief or in the round, being fashioned entirely out of plaster.

It is only in the fourth century that one can clearly discern the beginnings

¹ 1. 40. 4. We must disregard the plaster statue mentioned in 9. 32. 1, as Pausanias gives no indication of its date: it could quite easily be late-Hellenistic or Roman.

² A. S. Murray, *A History of Greek Sculpture* (1880-3), ii. 117. Followed by J. G. Frazer, *Pausanias's Description of Greece* (1898), ii. 525.

³ Blümner, *Technologie* (see p. 152 n. 2), ii. 114, 145.

⁴ For references see E. and J. R. Harris, *The Oriental Cults in Roman Britain* (1965), p. 10 n. 6; N. Bonacasa in *E.A.A.* vii. 525, 526. Similar work is also known in Greece,

but not before Roman times: F. Poulsen and K. Rhomaios, *Erster vorläufiger Bericht über die dänisch-griechischen Ausgrabungen von Kalydon* (Kongelige Dansk Videnskabernes Selskab. Historisk-filologiske Meddelelser, xiv, no. 3 [1927]), pp. 57-73 (*passim*).

⁵ R. Martin, *Manuel d'architecture grecque, i. Matériaux et techniques* (1965), pp. 429-33. The prohibition of Solon recorded by Cicero (*Leg.* 2. 26. 65) clearly refers to plain plaster surfacing.

⁶ *Encyclopedia of World Art*, xiii, col. 630. I have found no evidence in support of this.

of new traditions in plasterwork. The so-called 'First Pompeian Style', now more aptly renamed the 'Masonry Style',¹ in which the plaster coating on walls, particularly interior walls, was incised and raised in relief to give the effect of structural masonry, seems to have been developed, perhaps at Athens, in the first years of the century.² Then, in the latter part of the century, we have the first firm evidence for plaster moulding and modelling. Most of it comes from the newly conquered realm of Egypt, which had plentiful supplies of gypsum and a long-standing tradition of casting and other work in plaster:³ here, from the time of Alexander onwards, there are casts or models from sculptors' workshops,⁴ appliqué ornaments from wooden sarcophagi,⁵ trinkets, playthings, and suchlike.⁶

Of the techniques known in Egypt, plaster moulding at least was evidently practised in the older Greek territories too before the end of the fourth century. Pliny tells us that Lysistratos of Sikyon, who was probably active in the second half of the century, was the first to 'take impressions of the human form in plaster *e facie ipsa*' and that he 'invented a process for making casts from statues' (presumably using plaster);⁷ while Theophrastos, writing in the years 315-314, states that γύψος was employed by the Greeks mainly πρὸς ἀπομάγματα.⁸ Plaster fragments, including a death-mask, a cast of a human arm, and moulds, perhaps for metal-ware, have been found in a cemetery at Athens, but they are not dated accurately and could belong anywhere between the beginning of the fourth century and Roman times.⁹

At least one decorative form, too, occurs north of Egypt: the series of sarcophagus-ornaments in South Russia may have begun in the Hellenistic period.¹⁰

¹ V. J. Bruno, *A.J.A.* lxxiii (1969), 308.

² *Ibid.*, pp. 316 f.

³ Most of the pre-Ptolemaic evidence comes from the second millennium: to the references cited by Wadsworth, art. cit., pp. 9 f., we may add the painted reliefs in the tombs of Queen Nefertari and Amenemopet (B. Porter and R. L. B. Moss, *Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs, and Paintings*, 2nd edn., i [1960-4], 762-5, no. 66, and 259 f., no. 148; cf. K. Lange and M. Hirmer, *Egypt*, 4th edn. [1968], Plates LV-LVIII; J. Yoyotte, *Treasures of the Pharaohs* [1968], p. 157) and the masks from el-Amarna (G. Roeder, *J.P.K.S.* lxii [1941], 145-70). There follows a long gap in the evidence, but this may well be due to the general paucity of archaeological material from this period. Prof. J. R. Harris, to whom I am grateful for guidance in an unfamiliar field, expresses the opinion that the proliferation of plaster work in Ptolemaic times was largely a native development from something already established. Indeed, at least one piece may possibly be datable to the first half of the fourth century: a cast in Munich that may be a portrait of Nectanebo I, who reigned 380-363 B.C. (*Die Ägyptische Sammlung des Bayerischen Staates* [1966], sec. 66, no. 5339; H. W. Müller, *Pantheon* xxviii [1970], 89-92).

⁴ C. C. Edgar, *J.A.O.I.* ix (1906), 31, Fig. 8; *id.*, *Sculptors' Studies* (1906), pp. x-xii, 80-6; C. S. Ponger, *Katalog der griechischen und römischen Skulptur, der steinernen Gegenstände und der Stuckplastik im Allard Pierson Museum zu Amsterdam* (1942), pp. 88-95.

⁵ C. Watzinger, *Griechische Holzsarkophage aus der Zeit Alexanders des Grossen* (1905), pp. 32 f., 60, 75-7; C. C. Edgar, *Graeco-Egyptian Coffins* (1905), pp. ii, 1-6, nos. 33101-13, Plates I, II; E. Breccia, *La necropoli di Sciatbi* (1912), pp. 162 f., nos. 514-17, Plate LXXIX.

⁶ See R. Pagenstecher, *Die griechisch-ägyptische Sammlung Ernst von Sieglin*, i. *Malerei und Plastik A (Expedition Ernst von Sieglin ii)* (1923), pp. 93-113 (*passim*), though many of the items listed belong to the Roman period.

⁷ *H.N.* 35. 153. See Appendix.

⁸ *De Lapidibus* 67. Eichholz, note ad loc., translates ἀπομάγματα as 'seal-impressions', but see Caley-Richards, op. cit., p. 219 ('impressions or moulds in general').

⁹ A.Ζ. xxix (1872), 35; L. von Sybel, *Katalog der Skulpturen zu Athen* (1881), p. 208, no. 2921. The cemetery was in use from c. 394 B.C.: A.Ζ. cit., p. 34.

¹⁰ Watzinger, op. cit., *passim* (especially pp. 49 ff., 61 f.). The series continued into Roman times. Further sarcophagus-

But there is no evidence that they or any other type of decorative sculpture in plaster appeared as early as the fourth century. Indeed, if plaster were an accepted medium for such sculpture at this time, Theophrastos would surely have mentioned the fact in his survey of the uses of γύψος. But he talks only of ἀπομάγματα¹.

Pausanias' birds manifestly played an architectural role; so what of architectural sculptures in plaster? Egyptian examples include a head of Dionysos, now in Amsterdam, which has been dated to the end of the third century B.C., and which, it is thought, may have decorated a column-capital,² as well as reliefs from the walls of various tombs.³ In other parts of the Hellenistic world we must wait for the appearance of stucco reliefs in Masonry-Style wall-decorations before a clear tradition emerges. From Delos come fragments including lions' heads, masks of Medusa and of helmeted warriors, bulls' heads, bull-protomes, and series of *bucrania* linked by garlands;⁴ from Priene there is the painted head of a satyr;⁵ from Pergamon a remnant of a tiny frieze with figures (possibly cupids) in relief;⁶ and from Salapia, in south-eastern Italy, shields and *bucrania*.⁷ All of these seem to have derived from the upper parts of walls, where they reproduced decorative features from the friezes and cornices of real architecture; and all of them, with the possible exception of the Salapian reliefs,⁸ probably belong to the second century.

Although it is dangerous to draw conclusions from limited evidence, particularly when dealing with such a vulnerable medium as the one in question, one cannot help but get the impression that the Greeks did not fully appreciate the sculptural possibilities of plaster before Hellenistic times, when they became masters of Egypt. Even then they used it, outside Egypt at least, primarily for making casts, and only later evolved the tradition of stucco reliefs in interior decoration which was to enjoy such a brilliant future in the Roman age.⁹ There is certainly no evidence to suggest that plaster sculptures were employed for architectural decoration in Greece during the Classical period.

It may be added, by way of postscript, that a further unknown factor bedevils the Pausanias passage. What precise architectural role did his Stymphalian birds play? The answer to this question hinges on the meaning of

ornaments (of unknown provenance) are in Munich, Antikensammlungen, 13000 and 13009.

¹ See p. 154 n. 8.

² Ponger, *op. cit.*, pp. 89 f., no. 182 (cf. p. 92, no. 189).

³ E. Breccia, *Alexandrea ad Aegyptum* (English edn., 1922), p. 203, nos. 68, 69; Pagensteher, *op. cit.*, p. 97, no. 5 (with reference to Breccia, *Le Musée Égyptien* ii. 72, Fig. 3); A. Adriani, *Annuaire du Musée Gréco-Romain 1933-34-1934-35* (Alexandria, 1936), p. 158, no. 5, Fig. 84.

⁴ M. Bulard, *Mon. Piot*, xiv (1908), 154-7, Fig. 52, Plate VIII A; F. Courby, *Exploration archéologique de Délos*, v. *Le Portique d'Antigone ou du Nord-Est et les constructions voisines* (1912), p. 40, n. 2, Figs. 58, 59; A. Plassart, *B.C.H.* xl (1916), 247; G. Daux, *B.C.H.* lxxiv (1960), 855; P. Bruneau and others, *Explora-*

tion archéologique de Délos, xxvii. *L'Îlot de la Maison des Comédiens* (1970), p. 157, Figs. 113-14 (are the *bucrania* in relief or merely indicated pictorially?).

⁵ T. Wiegand and H. Schrader, *Priene* (1904), p. 312, Fig. 341; cf. Bulard, *op. cit.*, p. 157.

⁶ G. Kawerau and T. Wiegand, *Allertümer von Pergamon*, v, 1. *Die Paläste der Hochburg* (1930), p. 51, Fig. 65.

⁷ M. D. Marin, *Archivio storico pugliese*, xvii (1964), 190-3, Figs. 16, 17. Some fragments are now in Taranto Museum.

⁸ Siga. Marin dates the villa to the 3rd century: *ibid.*, pp. 220-4.

⁹ E. L. Wadsworth, *M.A.A.R.* iv (1924), 1-102. See more recently S. De Marinis in *E.A.A.* vii. 527-9; B. Andreae, in T. Kraus, *Das römische Weltreich* (1967), pp. 215-18, Plates 157-71.

πρὸς δὲ τοῦ ναοῦ τῷ ὀρόφῳ; does it mean 'on or near the ceiling of the temple' and refer to interior decoration in relief, as Blümner believed?¹ or does it mean 'at or near the roof of the temple' and indicate external sculpture, as Miss Wadsworth seems to suggest,² and Cagianò de Azevedo explicitly states?³ The latter fits better with Pausanias' use of ὀροφος elsewhere.⁴ A pedimental position is excluded, because this is always specified in Pausanias by the phrase ἐν τοῖς ἀετοῖς;⁵ so we can only be dealing with *akroteria*. If this interpretation is correct (and it is supported by a rather similar phrase applied to the *akroteria* of the temple of Zeus at Olympia),⁶ it may be a further argument against the antiquity of the figures: if they were of plaster or wood, their life in an exposed position must have been comparatively limited.⁷ Could they have survived five hundred years or more without having to be renewed?

Appendix

I strongly suspect that the use of plaster as a material for taking moulds was brought to Greece from Egypt as a result of Alexander's conquest, and that Lysistratos, the brother of Lysippos, played a leading part in its adoption in sculptors' workshops. Pliny writes: 'Hominis autem imaginem gypso e facie ipsa primus omnium expressit ceraque in eam formam gypsi infusa emendare instituit Lysistratus Sicyonius . . . hic et similitudines reddere instituit; ante eum quam pulcherrimas facere studebant. idem et de signis effigies exprimere invenit . . .' (*H.N.* 35. 153). All the writers who have discussed this passage and the *crucis* that follow (see H. Blümner, *R.E.* vii, cols. 2096–8; G. M. A. Richter, *Ancient Italy* [1955], p. 113; R. Carpenter, *Greek Sculpture* [1960], pp. 232 ff.; G. Becatti in *E.A.A.* v. 135) tend to assume that plaster was already a familiar material in the *ateliers* of Greek sculptors. But in fact there is no warrant for this assumption: on the contrary, the available evidence tends to support the idea that plaster moulding was introduced by Lysistratos. On the negative side, ancient literature records no earlier instance of the practice in Greece: Theophrastos' reference in the *De Lapidibus*, written in 315–314 B.C., presumably comes after the *floruit* of Lysistratos, assuming this to have been roughly contemporary with that of Lysippos. On the positive side, the archaeological material suggests that moulding had previously been carried out in clay only. For instance, the matrices from Pheidias' workshop at Olympia are of terracotta (*Neue deutsche Ausgrabungen im Mittelmeergebiet und im Vorderen Orient* [Deutsches Archäologisches Institut: Berlin, 1959], pp. 281–4), and clay rather than plaster was used for impressions taken from metalwork in the fifth and fourth centuries (D. B. Thompson, 'Mater caelaturae', *Hesperia*, viii [1939], 285–316; 'Ostrakina toreumata', *Hesperia*, suppl. viii [1949], 365–72). Such plaster moulds and casts, fragmentary or otherwise, as have been found in Greece and the islands are in no case firmly datable before Alexander. Apart from the pieces from Athens cited in the text (p. 154), I know only of Hellenistic evidence: a cast of part of a leg from Delos (J. Marcadé, *B.C.H.* lxxvi [1952], 106–8, Fig. 7) and some newly discovered moulds

¹ *R.E.* vii, col. 2095. Cf. *R.E.* ivA, col. 452.

² Wadsworth, art. cit., p. 11.

³ *Encyclopedia of World Art*, xiii, col. 630.

⁴ 2. 11. 2; 5. 10. 4.

⁵ 1. 24. 5; 2. 11. 8; 5. 10. 6–8; 7. 26. 6; 8. 45. 6; 9. 11. 6; 10. 19. 4.

⁶ 5. 10. 4: they stand ἐπὶ ἑκάστῳ τοῦ ὀρόφου τῷ πέρατι ('on each end of the roof').

⁷ Though, as Dr. Plommer has pointed out to me, well-painted wood (e.g. olive-wood) might survive in the open air for long periods.

from Cyprus (V. Karageorghis, *B.C.H.* xcv [1971], 416 and Fig. 128). So, when Pliny says 'hominis imaginem gypso e facie ipsa primus omnium expressit', one wonders whether part of the innovation referred to consists in the use of plaster. Is it perhaps possible that Pliny was translating a Greek source which put as much emphasis on the idea 'gypso' as on the idea 'e facie ipsa'? In other words, could Lysistratos' contribution have been not merely to pioneer the technique of taking impressions from the human face or form, but also to substitute for clay a vastly superior moulding material—plaster?¹

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¹ The abbreviations used in this article are based on the list in *A.J.A.* lxxiv (1970), 3–8.