Wind Towers in Roman Wall Paintings?

"The wind blows where it wills" (John 3: 8)

ELFRIEDE R. KNAUER

DEDICATED TO THE MEMORY OF GUIDO VON KASCHNITZ-WEINBERG (1890-1958)

THE METROPOLITAN MUSEUM OF ART can pride itself on the finest collection of Roman wall paintings outside Italy. Among the important pieces on exhibition for many years are the frescoes of bedroom (cubiculum) M and of the large hall (oecus) H from the villa of P. Fannius Synistor at Boscoreale, a small town a mile and a half northeast of Pompeii, excavated in 1900. Since the autumn of 1987 visitors to the Museum have also been able to enjoy the newly restored and reinstalled group of seventeen panels from three rooms in the villa at Boscotrecase, just west of Boscoreale, which came to light during the construction of the Circumvesuviana, the railway line skirting the foot of Vesuvius, in 1903.¹ Among the wall decorations of both houses there are cityscapes and landscapes displaying unusual architectural features. Our concern lies with various towerlike structures. They will be described, and an attempt will be made to demonstrate their function by relating them to a specific type of building of considerable, non-Classical antiquity and remarkable longevity. Finally, against this background, their possible meaning for the Roman viewer will be explored. These towers are most frequently met with in the repertoire of the muralists during the so-called Third Style.

While the frescoes of the villa of Fannius Synistor are supreme examples of the late phase of the Second Style of Roman wall painting, those from Boscotrecase belong to the next stage in the-by no means

linear-development of Roman wall decoration, the Third Style. They are of the early phase of its maturity. It seems certain that this villa rustica, a country estate in the shadow of Vesuvius, belonged to Agrippa Posthumus, the son of Augustus's friend the older Agrippa, and of Julia, the Princeps's only child from his first marriage. The building can also be fairly securely dated-to about 10 B.C.-and so may its murals.² Since it prompted our investigation, we shall begin with the landscape vignette that occupies the central panel on the back (north) wall of the so-called Black Room (Figure 1), the easternmost cubiculum of the sequence on the villa's south side, facing the Bay of Naples.³

Hazy, raking sunlight seems to conjure up the small rural sanctuary from the indifferent black background in which it floats. Two open aediculae lean against a slender, square tower with a distinct pent roof and a wide, latticed opening high up on the front wall (to be thought of as facing the sea). The slats seem to impede rather than enhance a view from that vantage point, and we may ask whether a belvedere was intended at all.⁴ Shields are mounted on the facade, a bucranium, swags, and an oscillum in the gabled aediculae. An altar and a column surmounted by a statue mark the boundaries of the precinct, as do two sturdy balustrades on which lidded golden vessels are aligned. Another vessel is perched on the ridgepole of the left sacellum. Gnarled trees

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The notes for this article begin on page 16.



5



1. Landscape from center panel of north wall of Black Room in the villa at Boscotrecase. The Metropolitan Museum of Art, Rogers Fund, 1920, 20.192.1

gesticulate into the dark sky while a handful of ethereal worshipers pursues its quiet activities. The dreamlike atmosphere, seeming to anticipate the oil sketches of Guardi, may suggest a wholly imaginative creation. But certain concrete details in the tower's architecture must have conveyed a special meaning to the Roman onlooker.

A review of other Third Style landscapes reveals that this particular type of tower occurs quite often and is one of several types of turrets, or high rises. Two scholars have concerned themselves with such buildings. Michael Rostovtzeff, in his close examination of Roman wall decorations, established our kind of tower as typically Egyptian, without, however, going into the actual function of such structures.⁵ Rostovtzeff also did not pursue the local antecedents of those towers—a matter that seems of considerable importance in our context, as we shall see. There are, in fact, Twelfth Dynasty Egyptian models of multistoried houses extant (Figure 2).⁶ The second scholar, Pierre Grimal, in his investigation of tower houses on Roman murals, accepted Rostovtzeff's conclusion about the source of similar latticed high rises, but again he did not address the raison d'être of such constructions, nor their pre-Classical history.⁷

Very similar to the Boscotrecase tower is another one, from the so-called Yellow Frieze in Room III of the House of Livia on the Palatine in Rome, which may date from about 20 B.C. (Figure 3). Essentially the same features are repeated in this little master-

piece, executed in a technique close to grisaille. The medium was probably chosen to imitate a marble or a stucco relief.8 The murals are supplemented by mosaics: a Nilotic scene with pygmies in a boat and tower houses at the riverbank (even the barge's cabin assumes the shape of a high rise);9 a harbor scene with porticoes surmounted by a round tower at their junction;10 and a square tower in a scene clearly located in Alexandria because of the prominent pharos.11 It is also rewarding to compare the earlyeighth-century landscape mosaic from the great mosque in Damascus, with its profusion of gabled tower houses.12 In Roman wall paintings, towers with latticed "windows" near the top may, at times, have a roof terrace, which in turn shows a tentlike structure on it, to provide shade during the day (Figure 4).13 A landscape in stucco, from the vaulted ceiling of a room in the palatial structure found under Perruzzi's Villa Farnesina on the Tiber embankment in Trastevere, depicts in the background a square tower with two narrow windows right under its roof (Figure 5).14 In the middle ground of this delicate Egyptianizing landscape (note the bearded sphinxes) rises a round tower topped by a low cupola. Again a wide, latticed opening appears, below its flat dome, and two small windows are visible farther down.15

Some of our examples belong to what has been



2. Model of Egyptian multistoried house from tomb of Amenemhat, El Bersha, Dynasty XII (from Badawy, *History*, II, p. 17, fig. 2a)

called the sacro-idyllic landscape. Such compositions abound in Roman wall decorations of the period discussed. Sacred and profane motifs are condensed, in a shorthand fashion, into "idealized" landscapes to create a dreamlike atmosphere of harmony and bliss. Their message seems to have been a response to the

3. Tower house, detail of Yellow Frieze in Room III of the House of Livia on the Palatine in Rome (from Simon, Augustus, pl. 29, 2)





- 4. Tower house, Roman "pygmy-landscape" from Pompeii, III (IX) 5, 9 (from Rostovtzeff, fig. 33)
- 5. Towers, Roman stucco relief from the villa under the Farnesina in Trastevere, Rome (from Zanker, p. 289, fig. 227)



profound yearning of a generation bruised by the Civil Wars but about to accept the political and intellectual alternatives offered by Augustus's reign.¹⁶

After having examined this distinct type, we must turn our attention to related structures, although they may not at first seem similar. It is again from the Metropolitan Museum's collection of wall paintings that our examples come, this time from the cityscapes on the east and west walls of Bedroom M in the villa of P. Fannius Synistor at Boscoreale (Figures 6, 7).¹⁷ Both walls are subdivided into a tripartite arrangement, which seems to suggest the disposition of the *scenae frons* of the antique stage. The central axes, allowing the spectator a glimpse of two sanctuaries behind their high enclosures, are accentuated by splendid pairs of red marble columns decked out with golden Corinthian capitals and circled by tendrils with jeweled or enameled flowers. The two side wings of each wall display cityscapes of high complexity, again viewed across tall parapets with massive doors. The sunlit plasticity of these completely inanimate, ghost-town-like urban ensembles, with their somewhat incoherent perspective, differs sharply from the elevated colonnades behind them. Instead, they recede into an indistinct background of great depth and are logically construed in relation to a vanishing point in the center of the walls' middle axes. Spatially and pictorially they share their atmosphere. The central sanctuaries and the cityscapes, except for their porticoes, are patently derived from two separate traditions.¹⁸ The salient features of the Boscoreale side wings are the tower houses, which seem to vie for breathing space in a crammed metropolitan area. One is reminded of the skylines of medieval towns in Tuscany.¹⁹

Besides the—by now familiar—slitlike vents in the upper stories, another type comes to the fore. Either one or two of the upper floors of these high rises have densely spaced, arched openings just below their flat or saddle roofs. Projecting bays and balconies occasionally reinforce the impression of an urban population desperately in need of fresh air. Like the isolated towers considered before, these depic-

6. Triptych from left (west) wall of the *cubiculum* from the villa at Boscoreale. The Metropolitan Museum of Art, Rogers Fund, 1903, 03.14.13

tions abound with Egyptian references. The *portae* sacrae on the central panels of both walls have griffins and winged snakes on their entablatures, and two palm trees grow in an enclosure in front of the parapets of the side wings.²⁰ The setting is clearly exotic, more specifically, Egyptian. It might be asked whether these references can be explained exclusively by the notable preference for *aegyptiaca* so amply documented in the art of the early principate.²¹ In our cityscapes we may well be confronted with an evocation of late Hellenistic Alexandria.²²

It is noteworthy that none of the ground plans of excavated urban dwellings or country estates in Italy allows for elevations of the kind pictured here. Nor do the somewhat later depictions of *villae rusticae* (many of them seaside establishments) on wall decorations from the towns devastated ultimately by the eruption of Vesuvius in A.D. 79.²³ Valiant and convincing efforts have been made to recover the layout





7. Townscape, left panel of triptych in Figure 6

of ancient Alexandria's grid system and the size of the *insulae*. But the site has been too heavily built over in modern times. Apart from a number of public buildings and monuments, especially necropoleis, excavated over the years, there is little on which to base a reliable picture of what the crowded inner city of that late Hellenistic metropolis looked like.²⁴ We do not even have contemporary wall paintings from Alexandria, of the kind abounding later on in townships buried by Vesuvius.²⁵ Nonetheless, we need not abandon attempts to establish an ancestry and a plausible function for the tower houses studied so far.

8. Egyptian house models, Dynasties VI–XI (from Badawy, Architecture, p. 14, fig. 1a)









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The attempt will, however, require somewhat unusual methods.

The inhabitants of the Nile Valley could expect a regular, annually recurring Nile flood and steady seasonal winds, and they learned to make use of these occurrences early on.²⁶ Many small house models have been recovered from Old Kingdom tombs, especially from Dynasties VI–XI (Figure 8). They were meant to serve the deceased in the afterlife and are reliable guides to a variety of actual types. Of interest for our purpose are one- or two-storied buildings having a columned portico along the front of the house on each floor, and on the top a terrace, accessible by an outer stairway (Figures 9, 10).

9. Restored perspective of one-storied Egyptian house model (from Badawy, *History*, II, p. 16, fig. 1b)



10. Restored perspective of two-storied Egyptian house model (from Badawy, *Architecture*, pp. 22f., fig. 4)



11



11. House of the royal scribe Nakht, after drawing in his papyrus. London, British Museum, no. 10,471 (from Badawy, *History*, III, p. 23, fig. 9)

The rooms behind the porticoes were ventilated either by windows high up in the side or rear walls or—at times—by half-cupolas emerging from the terrace floor and facing the direction of the prevailing winds. These structures served as "windcatchers" and aerated the rooms below.²⁷

Depictions of houses from New Kingdom tombs furnish designs that proved very long-lived in a country where natural conditions favored the retention of tested designs. Again we encounter the louvered windows high up the wall, primarily intended to regulate the air flow,²⁸ while the brick half-domes of the earlier models are replaced by larger and surely more effective structures (triangular in section) on the flat roofs. There may be several on one house, either facing the same direction or back to back in order to catch breezes from different quarters (Figures 11, 12).29 Since it is one of the principles of Egyptian art to depict animate beings in strict profile and objects, like buildings, in elevation, we can neither form a clear impression of the materials employed for the wind-catchers (brick or wood), nor know how the air flow was regulated at the wideopen front of these triangular contraptions. We may assume that the openings were latticed to avoid turbulence in the air "chimneys" they fed. This, at least, can be inferred from much later examples still to be discussed. Although Mesopotamia has not left the abundance of house models or paintings recovered



12. The house of Nebamun, tomb 90, Thebes (from Badawy, *History*, III, p. 23, fig. 8)

from Egypt, it seems certain that related structures were known there, too. 30

It can be assumed that when Egypt passed from Alexander's successors to the Roman emperors, the well-tested design of indigenous houses not only survived the introduction of Greco-Roman architecture but may actually have influenced it-at least in terms of practical technical details.³¹ For reasons discussed already there is no way of securely re-creating the "inner city" of Alexandria during that period. But the Roman wall paintings we have seen seem to confirm our hypothesis of the continuation of traditional Egyptian designs like the wind-catchers. Why such types surface only briefly within the typology of architectural Roman landscapes remains to be discussed. What seems evident, however, is that the paintings reviewed display a curious mixture of Mediterranean and Egyptian traits. In the Boscoreale townscape a purely Hellenistic stoa dominates a variety of tower houses that are-from all we knownot rooted in the Classical architectural tradition. Some have the flat Egyptian roof; onto others a Mediterranean tile roof has been grafted. All of them lack ordinary windows but have either latticed or arcaded openings right below the top. The bright red, decorated bay window with screened openings, which rests on beam heads high up on the house wall and projects only slightly from it (next to the stately gate), has striking parallels in New Kingdom paintings (see Figure 12), but also, as we shall see, in later Coptic and Islamic domestic architecture.

Although still tenuous, the Greco-Roman evidence receives good support from later local testimony. It is well known how overwhelmed the Arab conquerors of Byzantine Egypt were in A.D. 641, when first exposed to the decaying splendors of Alexandria or "Babylon in Egypt," as latter-day Cairo was called by the Greeks.³² It has also become apparent how fast and expertly those Bedouin warriors adapted themselves. The transformation of the mixed local heritage was to lead to surprisingly original architectural creations attuned to the social and religious demands of Muslim society. The solutions that were produced naturally showed regional differences.33 These divergences must have been more obvious in secular and private architecture than in official works. This accounts for the fact that Muslim domestic building, as far as it can be recovered, shows strong local idiosyncrasies.

A walk through the medieval city center of present-day Cairo can still yield an impression of its original appearance. No extant houses date back to that period. However, in the narrow thoroughfares and side alleys dominated by mosques, religious schools, and pious foundations, scattered patrician houses preserve some traits of the old Egyptian high rises. A number of features are particularly striking. An anonymous, possibly nineteenth-century, view of Cairo, taken from across the canal al-Khalīj (the old connection between Cairo and the Red Sea, which ran parallel to the Nile along its east bank), since filled in, shows the towerlike appearance of the buildings and the dense occupation pattern (Figure 13). The impression is much like that of the crammed townscape from Boscoreale. There are scarcely any windows but many projecting latticed bays and the customary rows of arched openings in the uppermost floors. Even more important is the presence of the pent-roofed ventilators on top, seen in profile, as in the New Kingdom paintings. All face in the same direction.³⁴ The finest example of the very few such surviving wind-catchers in Cairo is that on the roof of a two-storied home, called the Musāfirkhāne, which dates from the eighteenth century (Figures 14, 15). The top floor of the house displays a finely carved bay (mashrabiyya). The wooden contraption on the terrace, called badhanj in medieval sources, has the usual raking roof and three super-



13. Cityscape of Cairo, mid-19th-century(?), view across the canal al-Khalīj (from D. A. King, "Architecture," pl. 1)



- 14. Ventilator on roof of the Musāfirkhāne, 18th century, in Cairo (from D. A. King, pl. 3)
- 15. Detail of ventilator in Figure 14



imposed rows of slim arches on the two sides open to the prevailing winds. They serve, as noted before, to regulate the air flow.³⁵

In a number of recent studies on such ventilators in Cairo, it has been assumed-on the basis of philological evidence-that this device was probably first introduced into Egypt from Persia during the Fatimid period (tenth-twelfth centuries).36 Other studies, however, support my contention that these devices derive from an unbroken indigenous tradition.³⁷ If they really were foreign imports, one wonders why they were not built along the lines of Persian structures with the same functions. For purposes of comparison, it will be highly rewarding to review some of these Iranian wind-catchers (Figures 16-18). They are mainly found in the Kerman and Yazd provinces, that is, at the southwestern edge of the large desert plateau in the center of the country.³⁸ This Persian type, known by the name badgir, consists of a tower, subdivided by brick walls into several shafts, with vents at the top open to the prevailing winds, that air-condition and ventilate the building. Even in the absence of wind, the shaft

16. Street in Kerman, Iran (from Laurence Lockhardt and A. Costa, *Persien* [Cologne, 1957] pl. 86) warms up during the day, and an upward draft ensues that causes air to circulate within the house. It is less an actual drop in temperature than the draft that creates the cooling effect. A more sophisticated version combines the *badgir* with the *qanat*, an underground stream that brings mountain water into the settlements, and so cools the building (Figure 18).³⁹ But the wind-catchers are also found in the coastal cities along the Persian Gulf, and they seem to have traveled with Persian merchants and traders to Pakistan, where they are as prominent a feature today as they are in Iran.⁴⁰

Interest in the contraption, which has a long history in the Middle East, was apparently stimulated only fairly recently by environmental concerns and the search for and study of traditional cooling systems that do not require fossil energy. A number of well-illustrated studies have been the result.⁴¹ From a purely formal point of view the Persian examples are even more striking as parallels to structures depicted in the Roman wall paintings surveyed here, especially the isolated tower with latticed openings beneath the roof. The Iranian ventilators are predominantly of the tower variety. There are, however, also simpler versions in use, triangular in elevation, like the Egyp-







17. Wind-catcher on house in Yazd, Iran (from Elizabeth Beazley and Michael Harverson, fig. 79)

tian ones (Figure 19). The tower type has a flat roof, but the Roman examples, with their related louvered openings high up, are mostly furnished with raking roofs.

It is difficult to decide whether the characteristic incline of such coverings was used as a wind-catcher, in addition to the vents below, since the clearest representations, namely the towers with tile-covered pent roofs in the Boscoreale cityscapes and those in the House of Augustus on the Palatine, face away from the viewer. Other representations are too sketchy for this assertion to be made. What seems certain is that this distinct type of high rise combines features that can be traced far back in the architecture of both Egypt and Iran. Both countries became part of Alexander's heritage and ultimately of the Roman Empire.

The prominence of such wind towers in the early phase of the Third Style, especially in buildings connected with Augustus and his court, may reflect a particular historical instant: after his momentous victory over an exotic enemy, namely Ptolemaic Egypt, the Princeps may have felt entitled to accept much of the complex cultural heritage of that old country, which he considered his personal estate and which was to remain in the imperial domain as long as the

- 18. Diagram of combination of wind tower and underground stream (qanat) in Iran (from M. N. Bahadori, p. 149)
- 19. Village in the desert, Chupanagh, Iran. Note the various types of ventilators (from Beazley and Harverson, fig. 61)



empire lasted. While campaigning abroad, Augustus must have personally experienced the luxurious metropolitan life-style that flourished right at the edge of a basically hostile environment. The muralists who created the wall decorations in the houses of a small but highly appreciative circle of patrons may have been familiar with it, too.⁴² In that eastern capital both the advantages and the problems of an urban existence must have come to the fore much earlier

than they did at Rome. One of the answers to some of the problems seems to have been the use of wind towers. The climate of Italy, however, does not require the cooling systems developed at the edge of deserts, nor does it furnish the reliable seasonal winds to make them function. Such ventilators were surely never built on the peninsula. There the future belonged to the splendid colonnaded seaside villas shown occasionally on Third Style walls and known from excavated examples.43 The appearance of wind towers and other decorative elements of Egyptian extraction during the late Second Style and the early Third thus seems intimately connected with the personal taste and experiences of Augustus and his circle. The wind towers in these wall paintingslike other elements from the sacred and idyllic sphere—may have been meant to evoke a heightened existence and feelings of supreme well-being and happiness. If so, these wall paintings of the early Principate, no less than contemporary literature, are examples of the aesthetic climate of their time.44

ACKNOWLEDGMENTS

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NOTES

1. For Boscoreale, see Phyllis Williams Lehmann, Roman Wall Paintings from Boscoreale in the Metropolitan Museum of Art (Cambridge, Mass., 1953); for Boscotrecase, see Peter H. von Blanckenhagen and Christine Alexander, The Paintings from Boscotrecase, Römische Mitteilungen, 6. Ergänzungsheft (Heidelberg, 1962; revised 1990), and Maxwell L. Anderson, "Pompeian Frescoes in The Metropolitan Museum of Art," MMAB (Winter 1987–88). See also W. J. T. Peters, Landscapes in Romano-Campanian Mural Painting (Assen, 1963) pp. 10–19, 69– 71. I greatly benefited from seeing the manuscript of a paper on the Boscotrecase panels read by Joan Mertens at the University of Freiburg in the spring of 1988.

2. See Blanckenhagen, pp. 9-11.

3. For a color plate, see Anderson, back cover. For an axonometric plan of the villa (the Black Room is no. 15), see ibid., p. 36, fig. 44. For a sensitive analysis, see Blanckenhagen, pp. 18– 20. See also Wolfgang Ehrhardt, Stilgeschichtliche Untersuchungen an römischen Wandmalereien von der späten Republik bis zur Zeit Neros (Mainz, 1987) pp. 4–5, 54–57.

ABBREVIATIONS

- Anderson—Maxwell L. Anderson, "Pompeian Frescoes in The Metropolitan Museum of Art," *MMAB* (Winter 1987–88)
- Blanckenhagen—Peter H. von Blanckenhagen and Christine Alexander, The Paintings from Boscotrecase, Römische Mitteilungen 6. Ergänzungsheft (Heidelberg, 1962; revised 1990)
- Creswell—K. A. C. Creswell, Early Muslim Architecture, Umayads, Early Abbāsids and Tūlūnids, pt. 1, Umayads, A.D. 622-750 (Oxford, 1932)
- Fraser—Peter M. Fraser, *Ptolemaic Alexandria*, 3 vols. (Oxford, 1972)
- Lehmann—Phyllis Williams Lehmann, Roman Wall Paintings from Boscoreale in the Metropolitan Museum of Art (Cambridge, Mass., 1953)
- Peters—W. J. T. Peters, Landscapes in Romano-Campanian Mural Painting (Assen, 1963)
- Repertorio—Repertorio d'arte dell'Egitto greco-romano, ser. C, I–II, Achille Adriani, ed. (Palermo, 1963–66)
- Resümees—Resümees XIII. Internationaler Kongress für Klassische Archäologie, Berlin 24.–30. Juli 1988 (Berlin, 1988)
- Rostovtzeff—Michael Rostowzew, "Die hellenistischrömische Architekturlandschaft," Römische Mitteilungen 26 (1911) pp. 1–185
- Schefold—Karl Schefold, Vergessenes Pompeji (Bern, 1962)

4. The feature is termed "an open gallery with slender pillars" by Blanckenhagen (p. 18), who rejects Mrs. Lehmann's description of them as "slit-like windows" (p. 99, not 190ff.). For a similar tower with slightly different roof, see Blanckenhagen, pl. 30, from the west wall of the Black Room (15), in the National Museum in Naples. The vignette seems not well preserved, but the tower is not so certainly a cylindrical one as stated by Blanckenhagen.

5. M. Rostowzew [Rostovtzeff], "Die hellenistisch-römische Architekturlandschaft," *Römische Mitteilungen* 26 (1911) pp. 1– 185, esp. "Die ägyptisierende Pygmaeenlandschaft," pp. 55–72. Rostovtzeff sees Egyptian towerlike tombs as models for the majority of such representations. He does comment, however, on towers with latticed openings as typically characteristic of the Egyptian country house of the Ptolemaic and Roman periods, pp. 67–71, 148.

6. From the tomb of Amenemhat, El Bersha, Dynasty XII. See Alexander Badawy, A History of Egyptian Architecture II, The First Intermediate Period, the Middle Kingdom and the Second Inter*mediate Period* (Berkeley / Los Angeles, 1966) p. 17, fig. 22; see also p. 18, fig. 26. For another example, see note 31 below.

7. Pierre Grimal, "Les Maisons à tours hellénistiques et romaines," Mélanges d'archéologie et d'histoire 56 (1939) pp. 28-59. It remains to be seen whether the group working (under Sandro de Maria) at the University of Bologna on the iconography of the various architectural elements in landscape murals from the Second to the Fourth Style will come up with a satisfactory analysis of the tower types under discussion. See "La tradizione iconografica nella pittura di paesaggio ellenistico-romana," Resümees XIII. Internationaler Kongress für Klassische Archäologie, Berlin 24.-30. Juli 1988 (Berlin, 1988) p. 145. Laura di Olio, "Il motivo della 'porta sacra' nella pittura romana di paesaggio," Latomus XLVIII, 3 (1983) pp. 513-531, results from these studies.

8. For other examples, see the complete frieze, Rostovtzeff, pls. 1, 11; Peters, pl. VIII, figs. 26-28. Hendrik G. Beyen, *Die pompejanische Wanddekoration vom Zweiten bis zum Vierten Stil* (The Hague, 1938–60) fig. 256. For towers on the panels from the villa under the Farnesina, see note 14 below. See also the Third Style towers on wall paintings in the National Museum in Naples (nos. 9403, 9459, and 9401) depicted in Agnes Allroggen-Bedel, "Die Wandmalereien aus der Villa in Campo Varano (Castellamare di Stabia)," *Römische Mitteilungen* 84 (1976) pp. 41-42, and pls. 6, 3; 7, 1; and 7, 4. I have not attempted to compile a catalogue of such towers but rather to assemble a few telling examples.

9. See Amedeo Maiuri, La casa del Menandro e il suo tesoro di argenteria (Rome, [1933]) I, pp. 58ff., and II, pl. VII.

10. See Carlo Gasparri, "Due mosaici antichi in S. Maria in Trastevere," Alessandria e il mondo ellenistico-romano: studi in onore di Achille Adriani, Nicola Boncasa and Antonino di Vita, eds., 3 vols. (Rome, 1983–84) pp. 672–676, pl. CII, 1 (a less satisfactory picture of this mosaic is in Rostovtzeff, fig. 64).

11. See Alberto Balil, "Monumentos alejandrinos y paisajes egipcios en un mosaico romano de Toledo (España)," Alessandria e il mondo ellenistico-romano, pp. 433-439, pl. LXXVII, 1-4.

12. See Marguerite van Berchem, "The Mosaics of the Dome of the Rock at Jerusalem and of the Great Mosque at Damascus," in K. A. C. Creswell, Early Muslim Architecture, Umayads, Early Abbāsids and Tūlūnids, pt. 1, Umayads, A.D. 622-750 (Oxford, 1932) pp. 230-252, esp. pp. 248-251 and pls. 43f. These towers all have ordinary windows, not slatted ones. The author, interestingly, compares the structures to the Boscoreale cityscapes (figs. 305f.) and assumes, as models for them, actual tower houses in Syria. For such towers, see Georges Tchalenko, Villages antiques de la Syrie du Nord (Paris, 1953-58) I, pp. 30-33, 16of., 166. See also the index, III, p. 185, s.v. tours. None of the towers in secular buildings are described as having served ventilation functions. Cf. also the cityscapes of the recently excavated mosaic floor of the late-8th-century A.D. church of St. Steven's at Um er-Rasa, near Madaba, in Jordan. Alexandria features two tower houses: M. Piccirillo, Um er-Rasas Kastron Mefaa in Giordania (Jerusalem, n.d.) fig. 20. The reference to this monograph was kindly supplied by Joseph Alchermes. During a recent visit of the site, I found more tower houses depicted in the Nilotic cityscapes than in the Syrian ones.

13. Pompeii III (IX) 5, 9; Rostovtzeff, fig. 33, also pictured in Peters, pl. xLIII, fig. 169, and Karl Schefold, *Vergessenes Pompeji* (Bern, 1962) pl. 146; for a different kind of awning, see Peters, pl. xxx1x, fig. 161.

14. For a catalogue of the villa's decoration, see *Museo nazionale romano, Le Pitture.* II: *Le decorazioni della villa romana della Farnesina,* Irene Bragantini and Mariette de Vos, eds. (Rome, 1982). Our Figure 5 is Inv. 1074; see pl. 200; for a description, see pp. 291-293. See also the towers on the stucco panels, Inv. 1071, pl. 72, description p. 138, and Inv. 1072, pl. 77, description p. 138. The authors naturally do not explain the function of those towers. For the latest scholarly opinion on the villa, see Ehrhardt, pp. 3, 31-34. Paul Zanker, *Augustus und die Macht der Bilder* (Munich, 1987) p. 298, is surely right in interpreting the two statues of Mercury on either side of this stucco relief as indicating peace and affluence.

15. Rostovtzeff, p. 71, leaves it open whether such round towers can be called specifically Egyptian, but he feels that some details, such as the slatted windows, speak for so identifying them. Ines Jucker kindly reminds me of her article, "Hahnenopfer auf einem späthellenistischen Relief," *Archäologischer Anzeiger* (1980) pp. 440–476, esp. pp. 448–453; 473; and figs. 1– 5, 14f., with amply documented discussion of the architectural features on the relief's background, among them two round towers with densely spaced arched openings below their domes. Following to some extent the suggestions of Mrs. Lehmann (see note 19 below), who sees granaries or dovecotes in such buildings, Mrs. Jucker explains the towers as treasuries.

16. The term is used consistently by Rostovtzeff. For a characterization of the genre, see Blanckenhagen, p. 35. For distinctions between Hellenistic and Roman sacro-idyllic landscapes, see, e.g., Schefold, p. 72. Blanckenhagen also discusses the emergence of landscape vignettes on Third Style walls in his review of the Bragantini-de Vos catalogue of the wall decorations of the villa under the Farnesina (see note 14 above) in *Gnomon* 60, 4 (1988) p. 356. For a survey of scholarly opinions on sacro-idyllic landscapes, see Susan Rose Silberberg, *A Corpus* of Sacral-Idyllic Landscape Paintings in Roman Art (Ann Arbor, 1985) pp. 8–25 (this reference kindly supplied by Joan Mertens).

17. See also pls. x1f., x1vf., and xv11 in Lehmann and the excellent color plates in Anderson, cover and figs. 23, 27, and 29 (the latter from the west wall, not the east, as in the caption).

18. Karl Schefold has repeatedly drawn attention to the pictorially composite character of these walls by contrasting the traditional perspective of the cityscapes (which he, convincingly, takes to be copies of famous stage wings of the Greek theater) with the central perspective of Roman paintings, where the illusion of space is enhanced by pictorial means. The tripartite scheme as such is the invention of Greek stage designers, and the topical arrangement—a sanctuary flanked by the dwellings of the play's characters—is known from, e.g., Menander's *Dyskolos* and Plautus's *Aulularia*. Schefold dates the models for the cityscapes from about 250 B.C. See his "Der Zweite Stil als Zeugnis alexandrinischer Architektur" in *Neue Forschungen in Pompeji* und anderen vom Vesuvausbruch verschütteten Städten, Bernard Andreae and Helmut Kyrieleis, eds. (Recklinghausen, 1975) pp. 53–59. See idem, "The Origin of Roman Landscape Painting," *Art Bulletin* 42 (1960) pp. 87–96, and *La Peinture pompéienne*, *Essai sur l'évolution de sa signification*, Collection Latomus 108 (Brussels, 1972) pp. 110, 117–120. For the frescoes' connection with Greek stage design, see Beyen, *Wanddekoration*, I, pp. 170– 179, pls., fig. 70.

19. Although the four cityscapes are essentially identical in their mirror symmetry, it is not only the consistent lighting (imagined as coming from the entrance of the cubiculum) that makes them look somewhat different. There are, in fact, small variations to be observed, e.g., in the trelliswork of the balconies. More importantly, only in the left wing of the left triptych and in the right wing of the right one are the towers with tiled pent roofs shown with ladders propped against open bay windows. Mrs. Lehmann, pp. 99ff., takes these vented towers as "still a standard type of Campanian peasant's house" and sees compounded impressions of farm buildings in the whole composition-primarily granaries, storage buildings, and dovecotes (pp. 101-103). I shall presently show why this view appears untenable. For a typical Egyptian dovecote, see the farmstead in the lower righthand corner of the Egyptianizing Nile mosaic from the sanctuary of Fortuna Primigenia in Palestrina, reproduced in Giorgio Gullini, I mosaici di Palestrina (Rome, 1956) pls. 1 and XIX. Such conical cotes are still used today in the Fayum.

20. See Lehmann, pls. XIII and XVI, and Anderson, color plate 27, p. 22. Interestingly, the same motif, a palm tree within a circular enclosure, occurs in the Egyptianizing stucco reliefs from under the Villa Farnesina: Inv. 1071; Bragantini and de Vos.

21. See Mariette de Vos, L'egittomania in pitture e mosaici romano-campani della prima età imperiale (Leiden, 1980). For Egyptian motifs in Augustus's studiolo on the Palatine, see Gianfilippo Carettoni, Das Haus des Augustus auf dem Palatin (Mainz, 1983). The adjacent House of Livia and the villa under the Farnesina—all datable to the early 20s of the last century B.C. provide many Egyptian motifs, as does the villa rustica at Boscotrecase.

22. For similar tower houses with raking roofs, see the splendid examples from the north and south walls of the lower *cubiculum* in the House of Augustus on the Palatine, reproduced in Carettoni, pp. 60-66, color pls. υ and v; and the perspective views in the upper portions of the side wings of the *frigidarium* in the Casa Omerica in Pompeii (I 6, 2), reproduced in Schefold, color pl. p. 72. Strangely, Pompeii—although an affluent town at the time—has only very few important buildings with Third Style decorations. See Lawrence Richardson, Pompeii, An Architectural History (Baltimore / London, 1988), chap. 15.

23. For a recent overview, see Harald Mielsch, Die römische Villa, Architektur und Lebensform (Munich, 1987). For the ambiguous evidence of the painted seaside villas, see p. 58, but also Friedrich Rakob, "Ambivalente Apsiden. Zur Zeichensprache der römischen Architektur," Römische Mitteilungen 94 (1987) pp. 1–28, esp. p. 11: "Neue Untersuchungen auf dem Capo di Sorrento haben gezeigt, dass in der Abfolge gestaffelter Villengeschosse, im turmartig kompakten Aufbau des Raumprogramms, die angeblich phantastischen Villenlandschaften der campanischen Wandmalerei von der Realität gebauter zeitgenössischer Meervillen erreicht und übertroffen wurde." See fig. 13, reconstruction of Roman seaside villa on the Cape of Sorrento in its mid-1st-century A.D. phase. For murals with seaside villas, see Rostovtzeff, pls. v, 1; vI–vIII; 1x.

24. See Repertorio d'arte dell'Egitto greco-romano, ser. C, vols. I-II, Archille Adriani, ed. (Palermo, 1963-66), esp. "Introduzione alla topografia di Alessandria," pp. 13-45; also Peter M. Fraser, Ptolemaic Alexandria, 3 vols. (Oxford, 1972), esp. vol. I, chap. 1, "Foundation and Topography," pp. 3-37. Apart from considerable changes in the coastline caused by the raised sea level, demolition went on throughout the Roman period (p. 10). The summary is discouraging: the development of Alexandria as a city largely escapes us (p. 36). Strabo's (Geography, 17, 1, 6-11) is the most comprehensive description, but he was no topographer. For the city plan, see W. Hoepfner, "Von Alexandria über Pergamon bis Nikopolis-Städtebau und Stadtbilder hellenistischer Zentren," summary of a paper read and published in Resümees, p. 85. See also Giuseppe Caruso, "Alcuni aspetti dell'urbanistica di Alessandria in età ellenistica. Il piano di projettazione," Alessandria I (Rome, 1983) pp. 43-53, and Wiktor A. Daszewski, "Notes on Topography of Ptolemaic Alexandria," Alessandria, I, pp. 54-69. For an attempt to visualize life in Alexandria during the Augustan period from evidence furnished by papyri, see Carla Balconi, "Alessandria nell'età augustea: Aspetti di vita," Egitto e società antica (Milan, 1985) pp. 189-196; also Diana Delia, "The Population of Roman Alexandria," Transactions of the American Philological Association 118 (1988) pp. 275-292; and Alexandrien: Kulturbegegnungen dreier Jahrtausende im Schmelztiegel einer mediterranen Grossstadt, Norbert Hinske, ed., Aegyptiaca Treverensia I (Mainz, 1981). For a résumé of the impact of Egyptian civilization on Rome, see Jean Marie André, "Les Romains et l'Égypte," Études philosophiques (1987) pp. 189-206.

25. Lately, however, a landscape mural of the 2d century B. c. has been recovered by chance in an Alexandrian necropolis during a rescue excavation. See Wiktor A. Daszewski, "Hellenistic and Early Roman Finds from Alexandria and Its Neighbourhood," *Resümees*, p. 141. The paper as read was centered entirely on the "Hades" landscape of that find in the Shatby necropolis. Shatby is apparently the earliest of the surviving cemeteries; see Fraser, I, p. 32. For the necropoleis, see also *Repertorio*, pp. 28–33. 26. See Alfred Wiedemann, Das alte Ägypten, Kulturgeschichtliche Bibliothek 2 (Heidelberg, 1920) pp. 13–22, "Der Nil"; Fraser, I, p. 22, and n. 138, for the strong and steady north and northeasterly winds, and Paulys Realencyclopädie der classischen Altertumswissenschaft 6, 1 (1907), s.v. Etesiai, pp. 713–717 (Rehm).

27. See Badawy, Architecture in Ancient Egypt and the Near East (Cambridge, Mass., 1966) pp. 22f.; idem, History, I, From the Earliest Times to the End of the Old Kingdom (Giza, 1954) p. 61; idem, History, II, pp. 15f., 18 (house models and reconstruction), p. 45f. (ventilators).

28. See Figure 2 and note 6 above.

29. Badawy, History, III, The Empire (the New Kingdom) from the Eighteenth Dynasty to the End of the Twentieth Dynasty 1580-1085 B.C. (Berkeley/Los Angeles, 1968) pp. 22f., fig. 8 (two-storied house of Nebamun, with ventilators back to back) and fig. 9 (the house of Nakht-from a drawing in his papyrus-with two ventilators facing in the same direction). For a color reproduction of Nakht's papyrus (he was a royal scribe) in the British Museum (no. 10,471), see E. A. Wallis Budge, Osiris and the Egyptian Resurrection (London, 1911) frontis. Badawy also uses the modern Arabic word for wind-catchers (malgaf). In the elegant New Kingdom palaces it was often the bedroom on the top floor that received the ventilation through a raised slanting roof (p. 30, fig. 15, two representations of the royal palace from the tomb of Meryre at Amarna). For the houses at Amarna, see pp. 92ff., esp. p. 94, and Ludwig Borchardt and Herbert Ricke, Die Wohnhäuser in Tell el-Amarna (Berlin, 1980). The frontispiece shows the securely reconstructed elevation of the tiefe Halle in the house (P 47.19) of the general Ramose, a central hall raised above the level of the surrounding rooms to allow effective ventilation through latticed windows right below the roof. See also Wiedemann, chap. "Behausung," pp. 162-178, esp. p. 168, and Wolfgang Helck and Eberhard Otto, Kleines Wörterbuch der Aegyptologie (Wiesbaden, 1956) s.v. Haus, pp. 141f.

30. See Badawy, Architecture, p. 85, for representation of various ventilation devices in Mesopotamia, and idem, "Architectural Provisions Against Heat in the Orient," Journal of Near Eastern Studies 17 (1958) pp. 122–128, esp. pp. 125–127, and fig. 5.

31. See Fraser, p. 23 n. 145 and p. 610 n. 419, for known examples of *Mischstil* under the Ptolemies. Their palaces were like the Egyptian ones—surrounded by groves. See also *Repertorio*, p. 35, for "hybrid" buildings of the Roman period. A fine example of a multistoried Greco-Roman tower-town house with slatted windows just below the roof terrace is furnished by a model depicted in Badawy, *Coptic Art and Architecture, The Art of the Christian Egyptians from the Late Antique to the Middle Ages* (Cambridge, Mass. / London, 1978) p. 107, fig. 2.70; it is, interestingly, placed next to a picture of the model of an ancient Egyptian tower house (see Figure 2).

32. Several passages, some of legendary character, by al-Maqrizi (1364–1442), the Arab historian and topographer of Egypt, may be found in "Description topographique et historique de l'Égypte," Urbain Bouriant, trans., Mémoires publiés par les membres de la Mission Archéologique Française du Caire XVII, 1 (Paris, 1895) pp. 424f., 429. The glare of the marble in the city of Alexandria was said to be such that the inhabitants were forced to wear black, curtains of green silk and black scarves were introduced to shield the eyes, and no lighting was needed on a moonlit night.

33. See Creswell, I, chaps. 1 and 2, "Primitive Islam," and the sections on "Architectural Origins" for each monument discussed. See also Janine Sourdel-Thomine, "Die Kunst des Islam," in Die Kunst des Islam, Propyläen Kunstgeschichte 4 (Berlin, 1973) pp. 72-125, and Oleg Grabar, The Formation of Islamic Art (New Haven / London, 1973) chaps. 6 and 8. In this context it is interesting to look at yet another local solution, namely the tower houses in San'ā' in Yemen. Here the main living rooms are high up and many windowed. Ventilation is provided permanently, in the staircases, by projecting masonry cooling boxes. See Robert B. Serjeant and Ronald Lewcock, San'ā', The World of Islamic Festival Trust (1983) chap. 22, "The houses of San'a'," pp. 436ff. See also Ronald Lewcock, Traditional Architecture in Kuwait and the Northern Gulf, AARP (London, 1978): wind towers in Kuwait, pls. 100f, 102a; in Baghdad, pl. 102b; in Bahrein, pl. 114; diagrams of various types of windcatchers, pl. 119.

34. See David A. King, "Architecture and Astronomy: The Ventilators of Medieval Cairo and Their Secrets," *Journal of the American Oriental Society* 104 (1984) pp. 97–133, pl. 1. King rightly observes that the ventilators—if the topography is correct—face in the wrong direction. I think that the mistake can be easily explained: since we have to do with an engraving, the original drawing was naturally reversed in the print. The fact that the wind is consistent—that is, coming toward the ventilators—is proved by the inflated sail in the foreground. This boat is heading upstream and needs the north wind, while the others drift down with the current of the canal.

35. King, "Architecture and Astronomy," pls. 3 and 4; see also his text pp. 99f. On the contraption, cf. K. A. C. Creswell, The Muslim Architecture of Egypt I (Oxford, 1952) p. 284f., and II (1959) index, s.v. malgaf. For additional, very clear representations of such ventilators in ancient Cairo, see Oleg V. Volkoff, 1000 Jahre Kairo: Die Geschichte einer verzauberten Stadt (Mainz, 1984), figs. on pp. 156f., 179, 190f., 206f., 210f.; and the photograph no. 4, in the collection "Kairo 1850." It shows the citadel, seen from the east, with the river in the background. The roofs are studded with ventilators, all facing due north. See also the either wide-open or latticed triangular ventilators pictured in Prisse d'Avennes, Arab Art as Seen Through the Monuments of Cairo from the 7th Century to the 18th C. (Paris, 1877, reprinted Paris / London, 1983) p. 145, fig. 19; p. 146, fig. 20, and the description of a stately Cairene house by Edward William Lane, Manners and Customs of the Modern Egyptians I (London, 1842) pp. 24f. See also Janet L. Abu-Lughod, Cairo, 1001 Years of the City Victorious (Princeton, 1971) p. 59, fig. 30. Besides a windcatcher, this 19th-century street scene in the Coptic quarter shows the profusion of delicately carved projecting wooden bays, the so-called mashrabiyya, which permit the women to survey the street without being seen, from a well-ventilated area, where the supply of drinking water was also kept cool. This is not the place to elaborate on it, but the mashrabiyya-seemingly such a supremely Islamic contraption-is firmly rooted in the remarkable wood-carving tradition of the Copts. This tradition, in turn, can be traced back to Hellenistic and ancient Egyptian models: cf. the ornamental woodwork window screen of the New Kingdom house of Nebamun (Figure 12), and the arched and shuttered windows of a Middle Kingdom painting from El Lahun, depicted in Badawy, History, II, pp. 19-21 and fig. 4. See also idem, Coptic Art, pp. 358-360. How indebted the early Arab builders were to local Coptic crafts is shown by the tradition (cited by Creswell, pp. 31f.) that clearly derives the carved minbars required in mosques in Egypt in the 7th century from the pulpits fashioned for Christian churches in Coptic Egypt.

36. I am very grateful to Renata Holod, who let me see her article "Defining an Art of Architecture," in Architecture Education in the Islamic World, Proceedings of Seminar Ten in the Series Architectural Transformations in the Islamic World, held in Granada, Spain, Apr. 21-25, 1986 (Singapore, 1986) pp. 26-32. Following Franz Rosenthal, "Poetry and Architecture: the Bādhanj," Journal of Arabic Literature 8 (1977) pp. 1-19, she believes the Cairo ventilators (denoted by a Persian word, bādhanj, meaning "drawer of wind") were late importations from the East and that such innovations had an impact on Fatimid, but especially Ayyubid and Mamluk (i.e., 10th-15th century) lyrical poetry: the lovers liken themselves and their emotions to the ventilators and the action of the winds within them (pp. 27f.). In view of the unbroken local tradition for the wind shafts we have tried to assemble, it seems highly unlikely that it was a new gadget that stimulated the poets. It may rather have been their more daring and refined sensibility that made these poets cast about for such striking metaphors. This may have coincided with renewed building activities in Cairo, during which the local traditions were revived, and the resulting structures were probably called by a familiar word by those poets (many of whom were of Eastern origin).

37. See Hassan Fathy, "The Qā^ca of the Cairene Arab House, its Development and some New Usages for its Design Concepts," *Colloque international sur l'histoire du Caire* (Gräfenhainichen, 1969) pp. 135–152, esp. p. 143f. Fathy uses the modern Arabic term *malqaf* for the wind-catcher. See also Alexandre Lézine, "La protection contre la chaleur dans l'architecture musulmane d'Égypte," *Bulletin d'études orientales* 24 (Damascus, 1971) pp. 7–17, esp. pp. 12–17.

38. See Elizabeth Beazley and Michael Harverson, Living with the Desert, Working Buildings of the Iranian Plateau (Warminster, 1982), esp. the contribution by Susan Roaf, chap. 5, "Windcatchers," pp. 57-72. Note the interesting parallel to the backto-back wind-catchers on the house of Nebamun (our Figure 12) on p. 60. 39. The oldest extant wind towers on the plateau do not antedate the 14th century. Simpler types of ventilators, comparable to the early Egyptian ones, are depicted on Assyrian reliefs; see Badawy, "Architectural Provisions," p. 126. See also Paul Ward English, City and Village in Iran: Settlement and Economy in the Kirman Basin (Madison, Wis. / London, 1966) p. 41; and Hans E. Wulff, The Traditional Crafts of Persia, Their Development, Technology, and Influence on Eastern and Western Civilizations (Cambridge, Mass., 1966) p. 106. I should like to thank Brian Spooner for generous bibliographical suggestions.

40. See Roaf's chapter in Beazley and Harverson, *Living with the Desert*, pp. 59f., and José Roleo Santiago, *Pakistan, A Travel Survival Kit* (South Yarra / Berkeley, 1987) p. 53, with references to the *badgirs* in Thatta and Hyderabad.

41. See, e.g., Mehdi N. Bahadori, "Passive Cooling Systems in Iranian Architecture," *Scientific American* 238, 1 (Feb. 1978) pp. 144–154.

42. When the cultural center of the ancient world suddenly shifted from Alexandria to Rome, it is assumed that many Alexandrian artists were engaged to decorate the palatial homes of the imperial family and its retinue. See Bragantini and de Vos, p. 237; Gianfilippo Carettoni, "La decorazione pittorica della Casa di Augusto," *Römische Mitteilungen* 90 (1983) pp. 373-419; idem, *Das Haus des Augustus*, pp. 90-93; idem, "Die Wandmalereien im oberen Cubiculum des Augustushauses (Fotografische Rekonstruktion)," in *Kaiser Augustus und die verlorene Republik*, Eine Ausstellung im Martin-Gropius-Bau, Berlin 7 Juni-14 August 1988 (Berlin, 1988) pp. 287-290. But see Wolfgang Ehrhardt, *Gnomon* 60, 7 (1988) pp. 640-649, and Blanckenhagen, *Gnomon* 60, 4 (1988) p. 359. Cf. also John R. Clarke, "The Early Third Style at the Villa of Oplontis," *Römische Mitteilungen* 94 (1987) pp. 267-294.

43. See Mielsch, chap. "Die Bauentwicklung der Villen von der späten Republik bis in die Mitte des 1. Jahrhunderts n. Chr.," for such establishments, some of them antedating the Third Style. The most detailed contemporary description is found in the letters of Pliny (II, 17), where he sketches the amenities of his Laurentinum for his friend Gallus; see *The Let*ters of Pliny, a Historical and Social Commentary, by Adrian N. Sherwin-White (Oxford, 1966) pp. 186–199.

44. See Erika Simon, Augustus, Kunst und Leben in Rom um die Zeitwende (Munich, 1986), esp. chaps. "Villen der Zeit Caesars" and "Landschaft und Sagenbild," and Paul Zanker, Augustus, esp. chaps. "Mentalität und Geschmack" and "Bukolische Projektionen." Zanker likens the Third Style to Napoleon's Empire Style (p. 298). See also Eleanor W. Leach, "Landscape and Prosperous Life: the Discrimination of Genre in Augustan Literature and Painting," The Age of Augustus, conference held at Brown University, Providence, R.I., 1982, Rolfe Winkes, ed., pp. 189–195; idem, The Rhetoric of Space: Literary and Artistic Representations of Landscape in Republican and Augustan Rome (Princeton, 1988).