

Islamic Re-use of Antique Mosaic Tesserae

Michael Greenhalgh*

Such large quantities of antique mosaics survive around the Mediterranean that an obvious question is whether they had any influence on decorative art in the Middle Ages, in style or material. This question has sometimes been studied for the West and Byzantium; but by the Millennium, it was Islam rather than Byzantium or any of the states in the West that occupied the largest number of mosaic-rich sites of the Roman world. What might Islamic re-use of antique mosaic tesserae tell us about the further development of this medium?

This paper surveys the evidence for the re-use of antique tesserae, examining some of the ways in which the medium was used, on the outside and inside of buildings, and on both floors and walls. It discusses the various possible sources of the tesserae, the evidence for mosaic trading far and wide, and tesserae collection as war booty. It concludes with an overview of the specifically Islamic speciality of jigsawed cut-stone mosaic portals and façades, which were still being constructed in 16th-century Cairo - a cleverer and more sophisticated form of mosaic than any to be seen in Christendom, and surely using ancient marble offcuts.

Akdeniz çevresinde bu denli çok antik mozaik kalıntısı bulunması; bunların Orta Çağ betim sanatına stil ya da malzeme bakımından etkisinin olup olmadığı sorusunu ortaya koymaktadır. Bu soru Batı bölgeleri ve Bizans İmparatorluğunu kapsayan coğrafyada araştırılmıştır, ancak İ. S. 1000 yılından itibaren, Roma dünyasının mozaikler konusunda zengin olan şehirlerinde ikamet eden Bizans ya da diğer batı uygarlıkları değil İslam dünyası olmuştur. Buradaki soru; acaba, bu antik mozaik tesseraların İslam kültüründeki tekrar kullanımı bize mozaiklerin daha ilerki gelişmeleri ile ilgili neler anlatabilir?

Bu makalede öncelikle Antik dönem mozaik tesseralarının tekrar kullanım belgeleri araştırılmaktadır ve hangi parçaların binanın dışında ya da içinde, zeminde ya da duvarlarda kullanıldığı incelenmiştir. Ayrıca, tesseraların çeşitli olası kaynakları tartışılarak, mozaik ticareti konusundaki belgeleri ve tesserae koleksiyonlarının savaş ganimeti olarak ele geçirilmesi olasılıklarını sorgulamaktadır. Makale, 16. yüzyıl Kahire'sinde kullanımına devam edilen belirli bir biçimde İslami dünyaya özgü oyma testeresi ile kesilmiş taşlardan oluşan mozaik revakları ve ön cephelerin –Hristiyanlıkta görülen mozaiklerden ve çok daha zarif ve gelişmiş bir mozaik üslubu- özet bir anlatımı ile bitmektedir.

Keywords: marble; re-use; mosaics; Jerusalem; Damascus; Cairo

Introduction

Of the thousands of studies devoted to mosaics, few deal in any detail with those designed by mediaeval Islam. This is surprising even on the simplest grounds (survival, documentation and quantity), for Islam is predominant in large areas of the erstwhile Roman Empire, with more survivals in standing monuments than anywhere in Christendom (Byzantium included), and a better documentation, partly bolstered by Moslem attachment to large inscriptions, which generally offer dates. And although many Islamic complexes have disappeared (the original Al-Aqsa (707ff), the 8th-century palaces in Damascus, Jerusalem (730s) and Samarra (mid-9thC)), yet many have survived, from the Umayyad Mosque in Damascus (706ff) and the Dome of the Rock in Jerusalem (687ff) to the Mezquita in Córdoba (785ff). There is of course no doubt that church (and perhaps less frequently palace) walls were extensively covered with mosaics in Christendom, but nothing survives in quantity to match the dates of the Islamic monuments listed above, although spectacular floors survive at Madaba and Umm Al-Rasas.

* School of Humanities, Australian National University, Canberra, ACT 0200 Australia.



Four general arguments may be applied to the use of tesserae in the Islamic world, and to their likely re-use. The first is that, given the recycling of other precious materials including coinage,¹ glass,² and marble (Greenhalgh 2008), it would be strange if tesserae were not re-used, not only for original works, but for later restorations.³ Certainly, Roman tesserae were reused in Byzantine enamels (Freestone 2007), were stockpiled for re-use in Palestine,⁴ and were scavenged for Damascus, and some of them then used yet again (Flood 1997, 70; Flood 2001a, 24). At Hagia Sophia in Istanbul, there is evidence of earlier tesserae re-used in the 10thC mosaics (Ozil 2000); and elsewhere late compositions dis-

Figure 1
Hagia Sophia church, Iznik, mid-6thC:
interior: intact mosaic floor in a city large
portions of which were spoliated –
So may we assume spoliators were not
interested in this type of floor?

- 1 Gondonneau 2002, 588: “until about ad 750 all of the Islamic world recycled the previous coins: Byzantine and Sassanian coins in the Orient, Byzantine coins in North Africa and Visigoth coins in Spain. During the transition period between the end of the Umayyad dynasty and the arrival of the Abbasids (around ad 750), we have observed a change in the silver and gold supplies all over the Arab Empire.”
- 2 Schibille 2008, 638: “potentially indicating the recycling of Roman glass or even the reuse of whole window-panes as spolia. The use of spolia is well attested in Petra ... and the reuse specifically of window glass seems to be very likely.”
- 3 cf. Flood 2006, 516: “Mamluk interest in this archaic art can be directly linked to the impact of the Umayyad monuments of Syria, which were repeatedly restored and renovated during this period. Glass mosaics were among a range of features that were integrated into Bahri Mamluk monuments with the intention of appropriating some of the kudos of the early Islamic structures for their mediaeval successors.”
- 4 cf. Shugar 2000, 383: ca.95 litres of tesserae were uncovered in a tunnel at Beat Shean: “The tunnel is interpreted as being a storage facility for tesserae reclaimed for recycling and supporting evidence is provided. This should alert future investigators to the possibility that tesserae collected from a single mosaic can derive from either a single batch or from multiple sources if they were stored and reused.” Cf general discussion in Henderson, Julian, *The Science and Archaeology of Materials*, London 2001, 67ff.



Figure 2
Umayyad Mosque, Damascus, 709-15:
The “treasury” in the courtyard. All the
marble elements are in re-use, so may we
assume the same about the mosaics”
damascus_umayyad_treasury.JPG – AD
709-15

play more re-use than earlier ones.⁵ A similar argument applies to their import, given the long distances over which – for example – lead⁶ and ceramics⁷ were imported, and the likelihood that in any case mosaic-workers were probably (like marble workers and masons generally) by nature itinerant.⁸ Thirdly, it is now considered likely that Islam in Syria, far from killing mosaic production and the churches they decorated, stimulated what Balty calls a “renaissance,”⁹ and sometimes shared churches for worship, as perhaps at Tamra (Lower Galilee), where it is surmised that a Greek mosaic inscription was laid to cover a mosaic with birds (Di Segni 2004). In this (and in their taste for spoliated marble) they followed in the footsteps of the Persians before them (Foss 2003, 157, 159, 162). And finally, it is clear that mosaic floors (whether iconic or aniconic, and

5 Vandini 2006, 591: results from a wide variety of sites confirm “the lack of homogeneity of the late Byzantine tesserae ... this can be explained by the re-use of tesserae from previous decorations and/or by supposing partial remelting of more ancient glass.”

6 Wolf 2003 Synopsis: “most probably obtained from distant ore sources in Iran or Tunisia, Sardinia, Spain and the Taurus Mountains ... at no time did the Fustat potters use the potentially more accessible Egyptian ore sources.”

7 Bobin 2003, Synopsis: “probably came from Mesopotamia, from a major production centre, possibly Baghdad, Samarra or Basra.” See 570: Saladin & Marçais established via texts that the monochromatic tiles were made in Kairouan by a craftsman from Baghdad, and the polychrome ones in Baghdad, Basra or Samarra – so their sources turned out to be trustworthy.

8 Alföldi-Rosenbaum 1980, 5 suggests that the mosaicists had worked in Greece before they went to Cyrenaica.

9 Balty 1977, 10: “Loin de porter un coup fatal à l’art de la mosaïque, la conquête arabe semble au contraire avoir donné aux derniers mosaïstes byzantins et à leur héritiers l’occasion de développer sous la dynastie omeyyade une ultime “renaissance.” d’un singulier éclat ... Dans les schémas séculaires du répertoire classique, les Omeyyades ont en effet trouvé les moyens d’expression de leur vision intime: en se les appropriant, ils leur ont insufflé une vie nouvelle.”

irrespective of any iconoclasm) went in and out of fashion, for there are several instances where such (Christian) floors were covered over with marble slabs, as in the Atrium Church at Apamea (Foss 1997, 211-14).¹⁰

While for artworks true documentation is as lacking in Islam as it is in Christendom, some narrative accounts have survived of how tesserae were obtained, allowing some sensible guesses about availability and re-use. This paper surveys the various sources of tesserae (abandoned villas, churches, diplomacy, booty), and then the evidence for the mechanics of how the cubes got onto the walls, floors and domes of Islamic buildings. It then offers a brief outline of the florescence of marquetry mosaic especially in Aleppo and Damascus, as an indication of an invention which distances Islam from any Graeco-Roman tradition, although probably using mostly old marble. The conclusion is that Islam did indeed re-use ancient tesserae, occasionally but not always in designs imitated from Byzantium or Rome.

Sources of mosaic tesserae

The first recourse for hunters of tesserae and marble would have been abandoned Roman villas or cities, which were common in many now-Islamic lands. The longevity of Roman ways of life in some parts of Africa provided exempla for Moslems. In Tunisia, for example, floors and walls were often of mosaic tesserae, and some very splendid complexes survive, such as the House of Lucius Verus at Thysdrus. Some villas were apparently refurbished at the beginning of the 7th century, such as the Casa dei due Caccie at Clipea (today Kelibia, conveniently by the sea), and some villas at Carthage were certainly still in use (Bullo 2003, 285-7, 80-3) – models, perhaps, of splendid living to inspire Moslem palace-builders. Further west, on the coast of Morocco, the Roman remains have disappeared, and we might suspect that they went into mosques and palaces. One such is Sala (the lair of the “Sally Pirates”), of which Al-Idrisi (1173-1251) writes that the city “is today in ruins. Remains are to be found there, still standing, of monuments and imposing temples.” Ibn Abd Al-Mun’im notes it was on the edge of the sea, with “numerous antiquities, chateaux, vaults, etc” while at Tandia “much marble and large cut stones were [note past tense] to be found” (Siraj 1995, 109, 117).

Scavenging abandoned antique sites was the main method of acquiring tesserae and other marble materials, and there is narrative evidence of the process, but with no specifics about the sites thus treated. At Damascus, for example, the Umayyad Mosque was to be roofed in lead, and prospectors went out to look for re-usable material, particularly in sarcophagi, for lead was not natively available in Syria, and hence supplies of this essential material had to be sought from spoliation.¹¹ At one site (unnamed) they found a stone vessel with a lead coffin inside – but when the corpse started bleeding from the mouth they ran away in terror (Sauvaire 1896, 196). This is surely a fanciful tale, yet it is likely that lead was indeed obtained from Christian cemeteries, even if Umm-Al-Rasas is not to be translated as “mother of lead” (Piccirillo 1994, 26). Lead would also be used

¹⁰ Presumably the practice was widespread, for the tombaroli at Umm Al-Rasas removed such slabs to get at tombs beneath the earlier mosaic floor: cf. <http://198.62.75.1/www1/ofm/fai/rasas99.html>.

¹¹ The lead for Damascus must have been scavenged if we are to believe Yakut, writing in 1225 notes (Le Strange 1890, 262) that “Al Walid ordered that it should be roofed with lead. And they brought lead from all lands to accomplish this, but at the last a piece (of the roofing) remained, for which they could find no lead, except some that belonged to a certain woman, and she refused to sell it except for its weight in gold. And the Khalif commanded them to buy it of her, even though it were (at the price of) double the weight in gold. And they did so.”



Figure 3
Madrasa Al-Firdaws, Aleppo, 1235-41:
Mihrab



Figure 4
Madrasa Al-Firdaws, Aleppo, 1235-41:
Mihrab, detail



Figure 5
Madrasa Al-Firdaws, Aleppo, 1235-41:
Mihrab, detail

for fixing veneer (already seen at the Dome of the Rock¹²), as well as for fixing bases to columns and capitals to columns.

There are some instances where new buildings went up using the materials from those knocked down to make way for them. Such reconstructions follow from a desire to use monolithic columns as supports because, lacking special arrangements, they cannot be moved without destroying what they support. In most cases, however, it is not known where the material went. Qasr Al-Hayr West, for example, is now a shell with some stucco and fresco-as-marble-panel fragments; its antique decorated marble doorway lintel and jambs survives, but the marble and mosaic have been robbed out.¹³ In one case, however, we do know: Yaqut writes of Al-Hayr, a palace at Samarra, on which Al-Mutawakkil spent 4m dirhams. “Then Al-Musta’in gave the materials from its demolition to his wazir Ahmad b. Al-Khasib” (Northedge 2005, 304). Just as in the mediaeval West, as far as we know there are no instances of ancient mosaic floors being transported and relaid intact, although at several sites pagan or Christian floors were left intact and the Moslems simply moved in and used them, as we have seen.

Ibn Batuta, writing nearly seven centuries later, states that the builder of the Umayyad Mosque at Damascus, Al-Walid I (705-15) “applied to the Roman Emperor at Constantinople, ordering him to send craftsmen to him, and the Emperor sent him twelve thousand of them” (Ibn Battuta 1958, I., 46). In another

¹² Wilson 1865, 22: “The slabs are fastened to the stone by metal cramps, run in with lead, a good even bed of mortar having been prepared to receive them.”

¹³ The site is being excavated: cf. <http://www.slsa.ch/Projekte/QasrAl-HayrAl-SharqiE.htm>.



Figure 6
Zahiriyya Madrasa and Mausoleum of
Sultan al-Zahir Baybars, 1277-81:
interior with various types of mosaic in
costly marbles and mother-of-pearl

account, Mas'udi (writing 943) points to the Church of Mary at Antioch as the source for some of the antique marble for Damascus: "a round church, and one of the wonders of the world for the beauty of its construction and its height. The Khalif Al Walid, son of Abd al Malik carried off from this church a number of marble and alabaster columns, of wondrous size, to place in the Mosque at Damascus. They were transported by water down to the coast near to Damascus. The greater number of the columns, however, still remain in the Church at Antioch, as may be seen at the present day" (Le Strange 1890, 368). In yet another variation, Al-Muqaddasi relays that Al-Walid, "in order to construct these mosaics, brought skilled workmen from Persia, India, Western Africa, and Byzantium ... And this does not include what the Emperor of Byzantium and the Amirs of the Muslims gave to him in the matter of precious stones and other materials for the mosaics" (Le Strange 1890, 228). So if the marble architectural elements supporting the "Treasury" in the courtyard (Figure 2) are in re-use, may we assume the same about the mosaic tesserae?

The nature of the mosaics, which might equally be found in a church or a Byzantine palace,¹⁴ supports this story. He paid large sums "for the purchase of spectacular marbles, paving the courtyard with marble and the walls with da-

14 Grabar 1992, 190: "il n'y a rien d'islamique dans ces mosaïques, rien qui n'aurait pu être fait pour une église chrétienne ou un palais byzantin." The same might be said of the mosaics uncovered in 2000 at Qastal (Bisheh 2000) or indeed of Qasr Al-Hallabat, although the elements are although put together in unusual conjunctions. Indeed, the author (Bisheh 1993, 55) writes of Qasr Al-Hallabat: "Had it not been for the archaeological evidence, one would be inclined to attribute them to different periods" – so is it conceivable that some elements of these floors are indeed relaid from earlier buildings?



Figure 7
Zahiriyya Madrasa and Mausoleum of
Sultan al-Zahir Baybars, 1277-81:
interior with gold mosaics and opus sectile
marble panelling

does of variegated marbles” (Ibn Hawqal 1965, I.172), a large part of which probably went on transport. Like his father, Abd Al-Malik, who supposedly used the revenues of Egypt for seven years to pay for the Dome of the Rock, Al-Walid also assigned to the construction seven years of the tax revenues of Syria. Whatever their source and the home of their craftsmen, the classical nature of the mosaics’ vocabulary meant that “there is little that could not have been found in the architecture of the eastern Mediterranean in the preceding two centuries, if not four centuries earlier in Constantinian Rome” (Flood 2001a, 200). Indeed, there were churches in Syria ornamented with mosaics on the exterior. Ibn Butlan writes (1051) that “The palace called Kasr Rusafah is a fortress only second to the abode of the Khalifate at Baghdad. It is constructed of stone. Within it is a mighty church, the exterior of which is ornamented with gold mosaics, begun by order of Constantine, the son of Helena” (Le Strange 1890 522). The mosaics of the Dome were probably intended to recall Byzantium, and certainly did so for Al-Harawi (d.1215), who said he had seen work similar to that in the central cupola in the lands of Rum, although no mosque equalled this one (Al-Harawi 1957, 38f). Writers in this later, Mamluk period were alert to mosaic decoration because it saw a revival of Umayyad forms – as for example, in the Mausoleum of Baybars I (d.1277; monument 1281). This monument is rich in gold and marble mosaics, with not only an extravagant portal (Figure 10), but also a rich interior, with mosaic mihrab (Figure 8) echoed by hoods over the door (Figure 9). The structure is a fitting decoration for the structure of a man who paid for the restoration both of the Umayyad Mosque in Damascus (almost adjacent) and the mosaics of the Dome of the Rock in



Figure 8
Zahiriyya Madrasa and Mausoleum of
Sultan al-Zahir Baybars, 1277-81:
interior hood of mihrab

Jerusalem.¹⁵ The surviving fragmentary mosaics in Baybars' Mausoleum (Figures 6 & 7) give some idea of the building's initial splendour – not necessarily an attraction for pious Muslims. Thus Caliph Umar (717-20), frugal and public-spirited as well as pious, supposedly pondered selling the mosaics if he were sure he could recoup the outlay for the public treasury (Mas'udi 1965, II 262ff). If this did happen, then we may deduce both that there must have been an active market in mosaic tesserae (to beautify probably Muslim buildings of which we know nothing), and that even in its initial form old materials were added to beautify the mosque. The Byzantine flavour of the mosaics suggests that Byzantine craftsmen really did work there, perhaps for motives of snobbery and/or triumphalism (Grabar 1964, 82f); and early 8th-century papyri from Aphrodito in Upper Egypt detail the responsibility of the governor there to send men to Damascus (as well as to Jerusalem) and to pay for them (Elad 1995, 37ff).¹⁶ Hillenbrand points out (Hillenbrand 1999, 134) that this *corvée* system was a channel for the introduction of foreign forms and motifs to Syria, and we might add that it was not unusual for emirs to be called on to provide materials and workmen for construction projects, as with Alaeddin Keykubad's construction of the city walls of Konya, which in this case certainly included antiquities (Huart 1897, 174f). In the case

¹⁵ Flood 1997, 60: "it is likely that the art of glass mosaic was revived following the restoration of the Dome of the Rock (beginning in 1261) and the Great Mosque of Damascus (in 1269);" and then 66: "Such programs of work on the mosaics of both buildings may be convincingly correlated to the use of the same medium in the decoration of contemporary Mamluk buildings" – although it is likely that Saladin was collecting tesserae from the Christians of Jerusalem over a generation earlier. But NB Flood is dealing only with glass tesserae.

¹⁶ Grabar 1996, 211 note 34 points out that the Aphrodito papyri do not state that the "palace" was in Jerusalem – and, in any case, the word used should be translated as "aula" or "hall."



Figure 9
Zahiriyya Madrasa and Mausoleum of
Sultan al-Zahir Baybars, 1277-81:
interior hood over door, with wall mosaics

of Syria, the antique marble would have had to be imported, apart from the quantities that could be scavenged from the decoration of local Roman and Byzantine structures. Al Walid also embellished the Prophet's Mosque at Medina, in its 707-10 rebuilding, when again he supposedly received materials from the Byzantine Emperor, and also green, red and white marble from Syria (Flood 2001a, 197f). Al-Baladhuri writes (1916, I, 20) that after Uthman's rebuilding of the mosque ("making its columns of stone") Al-Walid wrote to the governor there and told him "to destroy the mosque and reconstruct it. Meanwhile, he forwarded to him money, mosaic, marble, and eighty Greek and Coptic artisans from Syria and Egypt."¹⁷ According to Al-Tabani, the earlier structure was pulled down in 707, and "Al-Walid had sent to inform the lord of the Romans that he had ordered the demolition of the mosque of the prophet, and that he should aid him in this work. The latter sent 100,000 mithqals of gold, and sent also 100 workmen, and sent him 40 loads of mosaic cubes; he gave orders to search for mosaic cubes in ruined cities and sent them to Al-Walid." Al-Maqdasi noted (repeating Al-Muqaddasi's comment, hence suggesting a common source) that at Medina "the walls of the porticoes are covered on the outside with mosaics. Craftsmen from Syria and Egypt were brought there for the purpose and their names are still to be seen there" (Bisheh 1979, 158, 162, 202f., 206). This follows Christian practice, for churches in Syria/Palestine had wall mosaics, and glass tesserae have been excavated at Apamea, Bosra, Bethany, Pella and Petra (McKenzie 2007, 359). At least some of the marble imported from Byzantium might have been veneer,

¹⁷ Al-Baladhuri 1916, I, 21 also notes that "In the year 246, caliph Ja'far al-Mutawakkil ordered that the mosque of al-Madinah be repaired. Much mosaic was subsequently carried to it; and the year 247 marked the completion of the work."



Figure 10
Zahiriyya Madrasa and Mausoleum of
Sultan al-Zahir Baybars, 1277-81:
exterior portal with marquetry marble
decoration matching the intricacy
of the limestone muqarnas

and used for the Prophet's tomb as well as the mosque, for Ibn Jubayr praised the veneers there which were similar to those he had seen at Mecca (Ibn Jubayr 1952, 86ff, 199); but just how accurate is Sauvaget's very Roman-looking opus sectile reconstruction of the prayerhall walls is impossible to determine.

In many areas Moslems lived day by day with Christians, the large implantation of whose churches could often provide useful materials, as well as inspiration.¹⁸ There are plenty of examples of the takeover of marble-rich churches, even late ones such as the Panaghia in Antalya, and of the reworking as well as re-use of antiquities (Grassi 1990, 93-107, 111f). At several sites, evidence suggests re-use from Christian structures, probably close-by – such as the relief crosses on some of the pillars at Khirbat Al-Mafjar, the chancel-screen balustrades on the second storey of the same building, or the fragmentary Greek inscription on the jambs of the entrance door at Qasr El-Kharanah. Such re-use is far from unusual – witness the several examples of Crusader sculpture (including figured ones) in various of the monuments of the Haram in Jerusalem (Jacoby 1982, passim). At Khilda-Amman (Jordan), a new church was constructed atop an older one, and “the walls of the new rooms were built directly on the top of the mosaic pavement ... Later on, the mosaic pavement was almost completely removed and only those parts of it that were under the walls or covered by a thin layer of plaster were preserved ... In the south apse the mosaic floor was completely

18 Mouton 2006, 50 for the church on the site of the Burning Bush: “elle est très vaste, la charpente est supportée par des colonnes de granit dur, et l'autel est constitué d'une dalle de marbre reposant sur un support semblable. Et, en-dessous, se trouve le buisson ardent, qui est l'emplacement du buisson où Dieu parla au prophète Moïse. Le sol est pavé de marbre blanc et les murs sont revêtus de marbre polychrome, jusqu'au sommet.”



Figure 11
Maristan Arghun, Aleppo, 1354-5:
courtyard with marquetry marble

removed.” What is more, “The whole floor of the atrium was most probably also paved with plain mosaic. In its northern part the mosaic floor was completely removed except for a small segment that was under the threshold of a door to one of the Mamluk rooms. In this area not only the mosaic floor, but also the bedding was dug out down to the bedrock which was leveled and used as floor for one of the Mamluk rooms. All these activities took place during the Mamluk period” (Najjar 1994, 549f, 554). Mosaics were also used in Moslem buildings there: Al-Muqaddasi recording (Le Strange 1890, 391) that at Amman “In the city near the market-place stands a fine mosque, the court of which is ornamented with mosaic.” At Tiberias, new houses built after the 749 earthquake included one with “a plain but attractive coloured mosaic floor, with a central medallion featuring intertwining bands” (Walmsley 2007, 78f). In the Church of the Lions at Umm Al-Rasas, the western section of the floor and large parts of the nave tesserae were completely removed, probably during the site’s occupation as housing (Piccirillo 1992, 203, 211). Such removals suggest that the tesserae were targeted for re-use, especially if the removers had an eye for quality, since the Umm Al-Rasas floor was “per finezza di esecuzione resta uno dei capolavori dei mosaicisti operanti nella regione di Madaba nella seconda metà del VI secolo.” Against this should be set floors which were left strictly alone, as with the Justinianic opus sectile floor in Haghia Sophia in Iznik (Figure 1) – and this in a city which was extensively spoliated.

In occasionally appropriating Christian buildings, Islam simply followed Christian practice in appropriating pagan buildings, sometimes with refurbishments, sometimes not. The “East Cathedral” at Apamea (where the whole of the two-kilometre-long main street appears to have been mosaiced) has its small marble paving stones laid directly on top of the beautiful mosaics of what is believed to be the famous school of philosophy in which it is built; so was this done in order to erase its very memory? Or is it just part of the common practice of laying new floors on top of older ones?¹⁹ On the other hand, the five-aisle church in the courtyard of Basilica III “of Servus” at Sbeitla (Tunisia, with many surviving monuments) takes over part of the colonnade, with the cella of the temple

¹⁹ Balty 1977, #40: geometrical floor in the museum at Apamea, from the pagan building under the cathedral; # 8: geometrical floor, Apamea, house in insula V.10, 2nd half 3rdC – both of which would also have been perfectly suitable for any Moslem building. The same applies to other sites: cf. Germain 1969 for Timgad.

becoming the baptistery; the same thing happens at Thuburbo Maius, where the church uses the south colonnade of the temple courtyard for its own.

Many of the settlements the Muslims founded were located in or near ruined antique cities or Christian sites, and appropriation was a common practice,²⁰ including living in abandoned churches.²¹ Especially in Andalucía, there are more “continuing” towns than new Islamic ones,²² and this was perhaps part convenience, part emulation, since markers for the prestige of an antique site were large or enormous cut stones, Latin and Greek inscriptions, and Roman walls (Siraj 1991, 929ff). Islam generally left functioning churches alone, but appropriation (with payment) was sometimes practised, and disused churches and those of rebellious subjects were considered fair game for plundering. Minarets attached to erstwhile churches are one sign of takeover.²³ It is conceivable, but not provable, that the Dome of the Rock’s mosaics did indeed come from stripping local churches, thereby providing overtones of triumph to echo the great old columns. Certainly, churches in the vicinity did have mosaics, as at Bait Lahm between Jerusalem & Bethlehem, where Ali of Heart writes that “There is also a church most wonderfully built with marble, and gold mosaics, and columns” (Le Strange 1890, 299). At Fa’lul, in Syria, the apse windows of the church had lintels of yellow marble in Butler’s day, and he believes this was the source of the column-shafts of yellow marble and the white marble Corinthian capitals in the building to its south, when it was converted into a mosque (Flood 2001a, 200). At Jerash, of the remains of some thirteen churches, “Most of the inner walls of these churches were cased in marble, coloured limestone slabs, painted plaster and sometimes glass mosaics; little but the holes into which the slabs were pegged now remain...” (Harding 1967, 100). And Ibn Jubair writes in his diary that “Bait Lahiyah, or Libya, lies east of Damascus ... In ancient times there was a church here, which is now a mosque. It was of old the temple where the father of Abraham made his idols and kept them. But Abraham came and broke them to pieces. The temple is now the mosque of the inhabitants, and its roof is beautifully ornamented with mosaic of coloured marbles” (Le Strange 1890, 413).

At Damascus, the fitting-out of the mosque was carried out employing old columns, sheet veneers, and mosaic tesserae, and was very expensive. We might imagine that some materials came from the adjacent Byzantine palace.²⁴ The conversion was to the presumed displeasure of the Christians whose church had occupied part of the site and whose expulsion after years of worshipping amicably together had the flavour of a pre-emptive strike. For supposedly when Umar became caliph, he wrote to Damascus “to his ‘amir ordering him to return to the Christians that part which he had added to the mosque from their church. The people of Damascus disliked the idea saying, “Shall we destroy our mosque after we have called to prayer and held service in it?” (Al-Baladhuri 1916, 192).

20 Examples from the Maghreb in Wheatley 2001, 300-1. At Dumayr (Jordan), sarcophagi (?from a nearby church) are used as pillars: cf. Genequand 2001.

21 As with the late Umayyad-Abbasid houses at Umm al-Rasas: cf. <http://198.62.75.1/www1/ofm/fai/rasas99.html> and <http://198.62.75.1/www1/ofm/fai/2005.html>. The mosaics at Madaba came to light when the town was reoccupied by Christian families in 1880: <http://198.62.75.1/www1/ofm/fai/FAImadab.html>.

22 Pavón Maldonado 1992 for listings - 17+ new as against 59+ built on earlier towns.

23 King 1983, 133ff for the minarets; 125f some mosaic cubes found in the apse of SS Sergius & Bacchus (at Umm Al-Surab), with tesserae of white and pink marbles, and glass in blue-green, green and yellow-green - the rest surely robbed out.

24 Flood 2001a, 149 writes of the Byzantine palace adjacent the mosque, the rich decoration of which included “simple polychrome floor mosaics, opus sectile pavements, and stained glass, gives some idea of how the Khadra might have been embellished” - viz. the Umayyad Palace.



Figure 12
Al-Atrush Mosque, Aleppo, 1393ff:
exterior window with ablaq masonry and
marquetry marble

The objection indicates the extent of the refurbishment, and an element of triumphalism, for competition with Christianity could be engaged by building mosques more splendid than churches, in many cases probably using materials from churches. With old capitals (Wilkinson 1987, *passim*), columns, mosaic tesserae and marble floors,²⁵ the Dome of the Rock was certainly intended to outshine the Church of the Holy Sepulchre below, and to attract the attention of Christians.²⁶ The Fatimid Gate of David also displayed polychrome mosaics including an inscription (Kaplony 2002, 610ff) to echo those of the Dome. The Dome's exterior shows it to be an early exhibitor of monumental inscriptions (context in Blair 1998, 29ff), later echoed by the prayer hall at Damascus, its inscription now lost (Golvin 1970, I, 135). Christian mosaic inscriptions were generally small-scale, but some exceptions might have provided inspiration: at S. Simeon, for example, the great pilgrimage church near Aleppo converted into a fortress by the Moslems, the marble floor of the central nave has a mosaic inscription 7.84m broad (Obermann 1946, *passim*). So the erection in the 12th century of a dome on the Holy Sepulchre (a rebuild and heightening of an earlier one) was precisely a response to the Islamic monuments on the Temple Mount. Again, the multi-column Byzantine Imbomon on the Mount of Olives (Küchler 2007, 876-97) is a likely part-inspiration. The Dome of the Rock itself used some of the (already old) capitals from the Al-Aqsa, and was perhaps a response to Christian buildings set within open courts, which were very popular in the Holy Land (Curcic 1996, 57). Competition between Christians and Muslims worked both ways not just when the Dome was constructed, but during the Crusades. So not only were capitals from the Al-Aqsa used to repair the Holy Sepulchre (Wilkinson 1987, 27ff) but, if Strzygowski is correct, marble from the tombs of the Latin kings was used prominently on the Haram to adorn mihrabs, perhaps as another expression of triumphalism (Strzygowski 1936). And according to Al-Muqaddasi (Le Strange 1890, 99, 102), the colonnades around the Haram in Jerusalem had mosaics in their ceilings, just as the Al-Aqsa had gold mosaics in the portico, which were left undamaged by the Franks. Again, mihrabs and qibla walls were to be a favourite focus for mosaics, some of glass.²⁷ Certainly, the Christians covered the rock in the Dome with a cupola on marble columns and marble bas-reliefs: Saladin had all this torn down, although he left their wrought-iron balustrade (Al-Isfahani 1972, 55).

Diplomacy was also a channel whereby useful gifts could travel across the Mediterranean and further afield, Charlemagne's elephant being perhaps the bulkiest, closely followed by his bronze candelabrum, both from Harun Al-Rashid. We are well-informed on the lighter, more precious gifts brought by embassies (Schreiner 2004). And we shall see below that sending to the Byzantine emperor for columns or mosaic tesserae is something of a leitmotif – so was marble ever a part of ambassadorial gifts? Certainly on one occasion it was part of diplomatic "fixing," for example, Syrian marble and mosaics were sent to the court of the 6thC Sasanian ruler, Chosroes I Anushirvan, as part of a peace deal. Pharaonic stone objects were sent to the Umayyad Caliph in Damascus, and Umar (ruled 717-20) apparently delighted in showing them to visitors (El Daly 2005, 41f).

25 Wilson 1865, 36: inside, "The pavement of the mosque between the external wall and screen is a confused mass of old material, amongst which there are many portions of sculptured slabs like those seen outside, one of which, a little to the north of the western gate is nearly perfect."

26 William of Tyre 1872, I.2 col 215: ... *alique vetusti operis exstantia vestigia demonstrantes, ubi sumptibus qui sufficere possent ad impensam designatis et convocatis artificibus, subjecta pro votis materia tam ex marmorum diversitate quam ex lignorum differentia multiplici, templum aedificari praecepit ... Exstant porro in eodem templi aedificio, intus et extra, ex opere Mosaico, Arabici idiomatis litterarum vetustissima monumenta, quae illius temporis esse creduntur.*"

27 Williams 1994 for various 13thC & 14thC examples from Damascus, Cairo and Tripoli (Syria).

Just as in the West (Desiderius of Montecassino, for example), Moslem patrons supposedly sent to Byzantium for materials and craftsmen. We can assume Abd Al-Malik's architects for the Umayyad Mosque in Damascus knew what was needed, for he simultaneously refused the entreaties of the Byzantine emperor to purchase similar antique architectural elements from buildings under Muslim control (Flood 2001a, 202). This is surely some indication of a dearth of suitable antique marble in Byzantium. Abd Al-Malik (685-705) spent "40 chests of gold for the mosaics, excluding the marble and the ancient materials." There are various accounts of where these came from: Sa'id says that Al-Malik had the Byzantine Emperor provide materials as a condition of their peace treaty.²⁸ At Madinat Al-Zahra (near Córdoba), according to Al-Makkari, 40 columns supposedly came from the Byzantine Emperor as a personal gift; some from Rome, and 19 from the land of the Franks (probably Narbonne). Large quantities in mostly green and red marble arrived from Carthage, Sfax and other African locations – 1,013, writes Ibn Idhari in the *Al-Bayan* (Ruggles 2000, 60).

But as well as using diplomacy, Muslims also bought marble and tesserae so as not to stain a holy structure by theft (a common theme in accounts of Islamic building, hence perhaps a common practice). Thus Ibn Sasra, in what might be a very late pietistic gloss, tells that when Al-Walid built the Great Mosque at Damascus, "he collected marble, pillars and stone but took nothing from anyone without payment" (Ibn Sasra 1963, 160). In this way also, Christian marbles could be integrated in Islamic contexts (Flood 2001b, notes 2, 56). Ownership could be communal. Troops were used to scavenging, perhaps to supplement their pay, with Muawiya (d.680) supposedly sending figurines collected by his troops for sale in India (El Daly 2005, 10). One story has Umar b. Abd Al-Aziz dissuaded from selling off both marble veneers and mosaics from the Umayyad Mosque in Damascus because the troops had already collected them on campaign. As one of them protested, each of them was enjoined to bring back from the land of Rum a measure of mosaic cubes and a sheet of veined marble. Gold-backed glass tesserae (to represent Heaven) would have been especially popular.²⁹ Hence ownership was collective – and "so Umar fell silent" (Ibn Sasra 1963, 64). Was this a way tesserae and small sheets of veneer were often gathered – while on campaign, and brought back in the baggage train? If so, then some of the extensive mosaics in the Umayyad Mosque at Damascus may perhaps be seen as "gifts" from the Byzantine Emperor to complement the craftsmen he was supposedly asked to send, and others as a specific and collective exultation of triumph over destroyed Byzantium, or at least over some of her buildings. Then again, the point of the story about Umar is that the mosaics and veneer actually belonged to the plurality of the community (for civilians had also collected lead for its roofs), and therefore were not in fact his to dispose of. Such scavenging by soldiers might have been a long-lived tradition, if we accept Ibn Al-A'tyr's account of the sack of Antioch.³⁰

Along with silk (which appears sometimes to have functioned as a currency), marble provided another way of paying the soldiers, tesserae (presumably of glass and perhaps gold) being favoured because they could be collected "as of

28 Mas'udi 1965, II, 496; and he might have threatened to strip Christian churches, as he did to exact materials for Mecca: cf. Flood 2001a, 201.

29 In the Paleologan Apostoleion at Thessaloniki the figures have survived, but the gold backgrounds have gone.

30 Ibn Al-A'tyr 1872, III, 720: "c'était une ville vaste, riche en édifi ces bien bâtis et de belles proportions . . . partout des demeures en pierres de taille, des portiques de marbre aux arcades solides" – which the emirs took to Syria. And outside the city was "une grande église, belle et ancienne, revêtue de porphyres, incrustée de marbres de différentes couleurs . . . Quand nos soldats envahirent la ville, ils enlevèrent ses marbres, dégradèrent ses beaux édifi ces."

right” from the buildings of conquered enemies. In the 14th century, a poem tells of the Turkish looting of what might have been of an Orthodox monastery, because there were gold-background mosaics, which the Turks took off and carried off in sacks in their ships. The editor believes this might have been near Mount Tragovouni (Greece), where there were ruins to be seen in the 20th century, with white marble column drums, capitals with the cross, and a scatter of mosaic tesserae, all very close to the sea (Lemerle 1957, 126 for verse 1140). No hint has survived of Turks themselves employing such materials at this date (the monuments of Bursa being faced in tile, not mosaic), so surely these tesserae were sold on to Christians, perhaps in Byzantium – or even for S. Marco, Venice.

The juxtaposition of competing monuments may be interpreted as triumphalist in Christian as well as Muslim settings, as when at Tipasa a large church was sited directly opposite temples and capitol.³¹ And if the tesserae for the Dome of the Rock in Jerusalem were indeed obtained from Byzantium, or even from looting by soldiers, then this underlines a politico-religious dimension to the monument’s dominance over the (externally drab?) Holy Sepulchre down below. Similarly Saladin’s exaction of marble from the defeated Christians of Jerusalem for the further embellishment of Islamic monuments may be classified as war booty, as well as triumphalist. Again, the practice is not just Islamic, for in the early 7th century, marble plundered from churches in Palestine was sent to Ctesiphon, the shell of part of which survives (Flood 2001a, 23 & note 39). Ibn Al-Al-Atyr’s account of October 1187 notes (Ibn Al-Atyr 1872, III, 705f) that after Friday prayers, Saladin ordered the Al-Aqsa mosque to be repaired “and to take all possible care in ornamenting, paving and decorating it with sculptures. Consequently, he had marble brought the like of which it was impossible to find, and gilded cubes in the Byzantine manner, and other necessary objects, all collected over many years.”³² Perhaps it was the result of his work that Al-Qazwini (1203–83) saw, namely “un gran cupula octagonal sobre columnas de mármol, techadas con plomo, y adornada por dentro y por fuera de mosaico y mármol de colores” (Rubiera Mata 1988, 108f). He also commanded that the mihrabs of Umar should be covered with marble (Al-Maqrizi, 1980, 85), so where did he get the materials, after the Crusader occupation of the city? Part of the answer, hinted at in Ibn Al-Atyr’s account, is that the local Christians had hoarded marble as perhaps a bankable equivalent to gold and silver – just as Frankish pilgrims had cut out bits of the Rock and taken them to Constantinople and thence to Sicily – as relics sold for their weight in gold (Al-Isfahani 1972, 56.). They probably decorated their houses with it, as apparently did Jean d’Ibelin (d.1236) his palace at Beirut.³³ When Saladin conquered Jerusalem, an agreement was made for the Christians to evacuate the city. The goods they could not carry they left behind, including “a large quantity of marble beyond compare, consisting of columns, plaques, and little cubes to make mosaics,” and pieces of marble and wood “of every kind and in great abundance” (Ibn Al-Atyr 1872, IV, 338). Following the surrender there was an influx of merchants who traded with the Muslim soldiers (Lyons 1984, 274f) – and we might surmise that marble was one of the commodities traded.

31 Balty 1972; 183 & pls LXIII-LXIV for the East Cathedral; 231-3 for Sbeitla and Thuburbo Maius; and 250 for P-A Février’s estimation of the opposition at Tipasa.

32 These might have come from Constantinople: cf Golvin 1970, 94.

33 Richard 1996, 139-41, described by Wildbrand of Oldenburg, in 1211: “Il a un pavement de marbre ingénieux ... Les murs de la maison sont entièrement revêtus de plaques de marbre qui figurent avec une suprême ingéniosité, des tentures de couleur variée ... Au milieu du palais se trouve une citerne constellée de marbre de diverses couleurs, dont les plaques de teinte différente sont si bien assemblées qu’on ne le sent pas en y passant le pouce; ce marbre montre une variété infinie de fleurs qui s’effeuillent et trompent l’oeuil de ceux qui cherchent à les identifier” - all dismantled by the Mamluks when they occupied the evacuated city in 1291.

How was the past re-used?

In spite of the continuing popularity in the Middle Ages of marble floors in the Christian East and West, and probably in Islam (surviving examples are scarce until the Mamluks), there is little evidence³⁴ of existing floors being lifted for relaying in the same pattern in a new location. Many floors were aniconic; many splendid opus sectile ones have survived in their original location;³⁵ and there is possible imitation of the technique in other media.³⁶ Thus such reuse would have presented no difficulties in Islam; but instead, new mosaic floors were created, with new iconographies. Such neglect surely indicates that Islam was uninterested in the Roman past as such, and sometimes followed decorative traditions from elsewhere (Van Buren 1946 for Tell Uquair and Uruk). The fact is underlined by the widespread (if not perhaps exclusive) use of old marble – indeed, the verso of some tesserae can be identified as such. For the tesserae of wall and vault mosaics certainly were re-used. Islam was supposedly presented with large quantities by the Byzantine Emperor; and these, like the ones the Moslems foraged for themselves, surely came from old Byzantine buildings. Out of these new structures were created, such as the Umayyad Mosque at Damascus. In the West, we know of pilgrims taking marble home as an act of piety; but no references have survived to the same thing happening with the tesserae of mosaic floors, although mosaics were used to imitate other marble decoration (Michaelides 1985, *passim*).

Lack of lift-and-reuse is all the more striking because of a tendency in mediaeval Islam to treat decoration – from columns and wall veneers to mosaics, doors and portals – as moveable items to be appropriated from old buildings for use in new constructions. In consequence the literature is replete with references to stripping out, and the surviving monuments often reflect the practice by their bare walls and floors. Thus some of Syria's "desert palaces" seem to be hunting lodges, and richly decorated (Qastal was carpeted in floor mosaics in stone and glass, and Qasr Al-Muwaqqar had mosaic pavements in several rooms) but some look like the late-Roman fortresses on which they were modelled, and the materials of which they sometimes re-used (Kennedy 2007, 103). The Qasr Al-Hayr palaces (East and West, 728ff) were sumptuously decorated, but any marble columns and veneers have long since been robbed out, as was Hamman Al-Sarakh, leaving little in place to remind us of what Hillenbrand calls "la dolce vita" (Hillenbrand 1982, *passim*). If stripping such remote sites is explicable, this also happened in the middle of Cairo, where the remains of the Fatimid palaces were being plundered long after their real life had ended.³⁷ In Baghdad, some palaces had marble baths and supposedly explicit mosaics,³⁸ which were

34 Meinecke 1996, 44 for the bath opposite the Great mosque in Bosra: "the sumptuous marble floor, including multicoloured opus sectile, as well as the intricate technical installations, testify to the highest standard of architecture and decoration. This masterpiece of engineering architecture was certainly not achieved by locally available specialists, but by an experienced building atelier from Damascus."

35 For a site inhabited in Vandal and Byzantine times, see Alexander 1973: e.g. Maison de la Cascade and Maison de la Chasse, pl. LXV, and in antiquarium, pl. LIV; plenty of Christian churches are recorded, but nothing survives of Xtian buildings or their mosaics. Dulière 1974, e.g. Boutique IV/V, at fig. 1190.

36 Dodds 1992, 600: at Cordoba in Abd al-Rahma's mosque "though fashioned of brick and stone, the alternating voussoirs were surely meant to evoke, in available materials, the opus sectile decoration of Umayyad buildings of the fertile Crewcent, in particular the Great Mosque of Damascus, and conceivably the Dome of the Rock."

37 Hauteceur 1932, 140: in 1369, two immense white marble columns were found on the site of the Fatimid palaces, and Sultan Chaban II took them for his madrasa near to the citadel, their transport hymned by the poets.

38 Rubiera Mata 1988, 97ff for Al-Makkari's account: "Habia pilones de mármol de bonita forma



Figure 13
Matbakh Al-Ajami, Aleppo, early 13thC:
exterior portal with marquetry of marble and
limestone

perhaps stripped by a later and more shockable owner. For sites such as Samarra and the desert palaces, the dismantling was so thorough that the decorative schemes cannot be fully reconstructed, although scraps of fittings have survived from Samarra, and mosaic, glass and other fragments are to be seen in the Turk ve Islam Museum in Istanbul, and in the British Museum. Other schemes include Khirbat Al-Minya (near Lake Tiberias), built by Al-Walid (705-15; as proclaimed on a reused marble inscription) or perhaps his son, where mosaics covered the floors and dadoes and glass mosaic the dome - such mosaic domes having a long ancestry. It is unknown whether an adjacent bathhouse is Roman, Byzantine or Umayyad (Bacharach 1996, 35).³⁹

Stockpiling was a constant feature of the Roman marble trade, at quarries, dock-sides and building sites, because of the vagaries of sea transport. Because stockpiling is the only sensible way to conduct medium- or large-scale building operations, in Islamic territory we find not only the Christians stockpiling marble at Jerusalem (see below), but (probably) materials for the Mezquita at Córdoba being accumulated over time. This latter was supposedly funded with booty from Narbonne, and yet more arrived from Narbonne after Hisham's assault in 793. One source says that this included "loads of earth out of the demolished walls" (presumably old marble), "and not only was the mosque built of those

... un largo pasillo todo el de mármol purísimo su suelo tenía dibujos ealizados con piedras rojas, amarillas, verdes y doradas, todas ellas de cristal tenido con color rojo y amarillo; el tenido en verde dicen que es un procedimiento que viene de los bizantinos, y el dorado es cristal revestido de oro. El dibujo era bellissimo y formaba diferentes figuras que realizaban el acto sexual..."

³⁹ Marcus Ritter has in preparation *Die Baukdekoration des frühislamisch umayyadischen Palastes Khirbat al-Minya bei Tiberias*.



Figure 14
Mausoleum of Taynabak al-Hassani
(or Al-Taynabbiya) 1395, Damascus:
exterior portal with marquetry marble and
other stones

materials, but a large quantity still remained piled up in front of the royal palace,” and the brass knockers were also taken (Al-Makkari 1840, II, 99). Again, columns and mosaic tesserae were supposedly sought from the Byzantine Emperor, although Cutler (2001 254) is sceptical even if Stern is not.⁴⁰ This must be a deliberate echo of the building of the Umayyad Mosque in Damascus, several stylistic features of which the Andalucian structure sought to imitate. No doubt many Christian artisans were used for the first construction; and there are masons’ marks, some in Latin letters, on the columns of enlargement of Al-Hakam II (961-76) and that of Al-Mansur (976-1002), several of which were probably moved from the first structure.⁴¹ For Pavón Maldonado (1973, *passim*), many of the decorative patterns used at Córdoba and Madinat are inspired by Roman floor mosaics, while Kubisch (1995) looks east, to motifs at Qasr al Hayr West, Khirbat Al-Mafjar, and Samarra. Mosaics were widely used at Córdoba, and also at Madinat Al-Zahra, where a poetic recitation in 971 hymned the splendour of the Caliph by comparing his glory with the marble and mosaics in the East Salon – “Cubren sus salones mantos de mosaico” (García Gomez 1967, 105ff).

Marble was such a valuable resource, especially in lands where it was not quarried (such as Palestine or Egypt) that Christians and Muslims sometimes seem to have played cat-and-mouse with marble supplies. Thus when Abd Al-Malik built Ramla, with considerable architectural ambitions, he discounted demolishing

⁴⁰ Stern 1976 38 agrees with Ibn Idhari that the cubes (stone, marble and glass) came from Constantinople; hence 46: the mihrab mosaics are “l’un des rares exemples d’oeuvres monumentales qui portent témoignage d’un art formé au contact du monde byzantin et musulman.”

⁴¹ Souto 2002, 231: both Qasr Al-Hayr East and Khirbat Al-Mafjar have graffiti in Greek letters, but also in Arabic and Hebrew – so manpower could have been various, and even brought in from afar.

the church at Ludd, and so wrote to the Byzantine Emperor, who sent him an agent “who indicated a place whence he could extract columns of unparalleled dimensions and beauty. They were also able to extract marbles both sawn and unsawn, amply sufficient for the mosque. It was said that this was in a property of Daroum near Gaza, which was called Amuda (Columns).” The Christians were then made to carry the materials to the site of the new mosque (Gaudefroy-Demombynes 1923, 3, 57f). The imported Greek, obviously having done marble- prospecting elsewhere in the Empire (and it could well have involved tunneling for material buried by humans as well as by the sands of time), found the necessary columns from what must have been a stockpile if they had the choice of sawn and non-sawn.⁴² Mas’udi’s account of building at Ramla leaves out the Greek inspector, and substitutes a direct threat to the Christians, namely that the church at Ludd would be destroyed unless they handed over their hidden stocks of marble (Mas’udi II 1965 184f). Ramla was an excellent place to build marble monuments, for when Nasir i-Khusraw visited in 1047 he came across a veritable marble-cutting industry there: “In the city of Ramlah there is marble in plenty, and most of the buildings and private houses are of this material; and, further, the surface thereof they do most beautifully sculpture and ornament. They cut the marble here with a toothless saw, Avhich is worked with ‘ Makkah sand.’ They saw the marble not in the cross, but in the length — as is the case with wood — to form the columns ; also, they cut it into slabs. The marbles that I saw here were of all colours, some variegated, some green, red, black, and white” (Le Strange 1890, 307).

There has been a certain amount of resistance to the idea that Islam did import mosaic workers, but the action seems defensible for practical reasons, rather than for any notion of triumph over the Christians. Marble also moved around, naturally with the workmen to deal with it. Thus Mecca has had so many alterations and refurbishments, that it is difficult to get a clear picture of the exact use of mosaic there, but it is clear that the complex was at times in competition with the splendours of Jerusalem. Al-Muqaddasi (born c.946) relays that Al-Mahdi had three porticoes of white marble brought from Alexandria to the port of Jeddah,



Figure 15
Mausoleum of Taynabak al-Hassani
(or Al-Taynabbiya) 1395, Damascus:
exterior portal with close-up of marquetry
marble

⁴² Gaudefroy-Demombynes 1923, 58 also refers to al-Muqaddasi’s report that al-Malik learned that the Christians had a cache of columns put aside for building a church at Balaxa, and made them hand them over to ornament the mosque at Ramla. Cf. Al-Muqaddasi 2001, 140.

and that “The mosque [in its present form] was founded by him. The porticoes have their walls decorated on the outside in mosaic, artisans from Syria and Egypt being specially imported for the work. The names of these still appear on their work” (Al-Muqaddasi, 2001, 67, 73). But before this, Al-Baladhuri (1916, I., 76) notes that Al-Walid “amplified the Haram-mosque and conveyed to it columns of stone and marble, and mosaic.”

This last remark is the kind of attestation or verification often used by Islamic historians, which could be a topos (Grabar 1996, 203 note 68), as indeed could the story of the import of experts – except that it has probably always been common for skilled workers to circulate. Al-Yaq’ubi writes of Al-Mu’tasim’s orders for the building of Samarra as follows: “He wrote for the despatch of the workmen, builders and skilled people ... and for the bringing of worked marble, and slabs of marble” (Northedge 2005, 268). Samarra has been comprehensively plundered (although far from comprehensively excavated) and, if the main decoration was stucco, Al-Mutawakkil’s palaces were decorated with marble slabs in the Throne Room complex. The fame of the site lived for centuries, so that Shabush-ti describes a throne room at Al-Burj (which he cannot have seen because he was writing a century and a half after 870): “The walls of the palace were covered inside and outside with mosaic and gilded marble” (Kennedy 2005, 147). As for the Great Mosque, this “used to be considered superior to the mosque at Damascus. Its walls had been coated with enamel, pillars of marble erected within it, and it was paved with marble” (Al-Muqaddasi 2001, 102). This might have looked something like the luxuriant 5th-century marble dadoes at Antioch, fragments of which survive (Allen 1988, 11ff & fig. 30), so that it is possible to view the use of stucco at Samarra as a translation from marble into another medium.

Elaborate church mosaics were still being created in the mid-8th century, as at Madaba (Walmsley 2007, 124f). In other instances, later refurbishments have obscured the earlier decoration. Thus the Muthir Al-Ghiram (written 1351) states that an earthquake (in 747) brought down the earlier Al-Aqsa, and that Al-Mahdi found it in ruins – but whether it was he who decorated it with mosaic is unknown. By the 11th century, however, the mosque had a polychrome marble floor (Kaplony 2002, 775), and Al-Qazwini emphasises the coloured marbles as well as the mosaics, as we have seen. An adjacent loss is the Umayyad Palace complex, for which the Al-Aqsa might well have been the palace chapel, as were contiguous structures at Damascus, Córdoba and Cairo. There also survive several sites where the evident classical inspiration of the motifs suggests probable re-use of individual tesserae (such as the bath area of the 8th palace at Anjar, Lebanon; Khirbat Al-Mafjar, 743/4, Occupied Palestine; and Qasr al-Hallabat, Jordan), and it seems very likely (could it be proved?) that many of the large mosaic complexes also re-used ancient tesserae.

Jigsaw-mosaic in Syria and Egypt

Against the background of diminishing availability of old marble in most centres, this section discusses the contrary tendency of what appears to be the deliberate flaunting of large reused blocks (often of rare marbles) in a three-dimensional version of opus sectile or marquetry, building on the development of multicoloured walls (ablaq) in the provision of sumptuous portals, window embrasures and mihrabs. Since the flat version of such techniques is to be seen centuries before in other media such as woodwork, and since its appearance from the earlier 13th century predominantly in Damascus and Aleppo is not echoed in Cairo (which



Figure 16
Damascus, Muhi al-Din ibn Al-Arabi
complex, 1516, Damascus:
courtyard mosaic floor, with roundels cut
from antique columns

uses two-dimensional mosaic patterns instead), it appears as if Syria is providing a demonstration of skill which outdistances not only the general run of Moslem wall decoration, but perhaps also Christian techniques as well. For nowhere other than in Syria are such skill and lavish reuse of scarce materials to be seen.⁴³

Cairo was a new city, albeit with an adjacent older one a few kilometres south at Fustat (Fu'ad 2000, *passim*), the site of marble-rich churches the materials from at least one of which was sold to pay taxes, in this case to Ibn Tulun (Lombard 1974, 198). Alexandria was a much-shrunken Hellenistic foundation, with a high-living nucleus surrounded by fields of ruins. It contained many marble capitals (Kautzsch 1936, 24ff; unfortunately, the book does not deal with Venice, Kairouan, Tunis, or Mahdiya) and, also like Cairo, private houses retained plenty of marble in the 16th century, including some complete mosaic floors, as Filippo Pigafetta writes in 1576-7: "In the people's dwellings you can see many pieces of marble and stone of different colours, cut in squares, circles, stars and other shapes which, with exceptional skill, the good people of ancient times employed to cover the floors and the walls of their houses; a really wonderful work as much for the shaping and fitting together of those well-cut stones as for their quality and excellence, and the diversity of their colours; there are some houses there in which such construction remains intact..." (Curatola 2004, 196-7) – though of course they might have been in one of the many later reincarnations known to be common with such Lego-like pavements (Guidobaldi 1983, 518ff).

Such "shaping and fitting together" is probably a spinoff from the ever-increasing shortage of prestigious marbles, which Ibn Khaldun builds into his rise-

⁴³ Greenhalgh 2006 60ff for further discussion and illustrations.

and-fall cycle: “which are taken from empty buildings, from fortresses and palaces disused because their towns are depopulated. The very same materials are perpetually re-used, from palace to palace, from house to house, until they are completely gone” (Ibn Khaldun 1967-8, II.10, 745). This can be seen in the enormous portal to the Mosque of Sultan Hassan, where Rogers has found fixing markers for attaching thin marble veneers which – he points out – are a very different matter from the stylistic source, such as the Gok Madrasa, where the marble panels are six inches thick and must have been carved before erection (Rogers 1970/1, 50). So if the use of ever-smaller and more intricate fragments is a style in Cairene and Syrian buildings, it is conceivably one much influenced by circumstance, and perhaps in part by the example of Roman marble floors available in Egypt.⁴⁴

If in Byzantium and the West mosaics usually constitute a thin veneer on wall or floor, and at least in later centuries re-use antique marble, in Islam another type of mosaic developed in early 13th-century Syria, which bears no relation to any earlier practice. This involves “constructional mosaic,” in which substantial pieces of marble are ingeniously cut into intricate marquetry patterns which are not simply skin-deep, but part of the construction of doorways, window embrasures, and sometimes mihrabs. To be effective, such constructions must show two faces of the work – there is no point otherwise – so the viewer can appreciate that these jigsaw “puzzles” are not simply cut in depth, but also employ large pieces of often precious marbles. We can often make an extra check on the mason’s ingenuity, for the elements of such structures have often moved over the centuries (earthquakes, etc), and the gaps opened up allow us to inspect the joinery in depth.

The finest of all marquetry displays is the mihrab in the Madrasa Al-Firdaws (by 1242: figures 3, 4, 5), in Aleppo. Sibṭ b. Al-Ajami, writing in 1274-5, notes the “stone, brought from many places,” the black and white marble in the courtyard, the yellow marble columns, and the mihrab, “among the wonders of the world” (Allen 1999, ch.8). Other monuments conspicuous for their jigsaw-work include the mihrab of the Madrasa Al-Sultaniyah (1213/16), the Arak and Wali Al-Shaibani, all of which have a stone muqarnas portal; the Arak Mausoleum with reminiscences of the Al-Firdaws mihrab arabesques in blue tile. Secular buildings were probably equally rich in fine stonework, such as the Al-Atrush Mosque, with its ablaq and marquetry windows (Figure 12), or the fragmentary Matbakh Al-Ajami Palace (Figure 13), with a portal nearly as intricate as the Al-Firdaws mihrab. Mosques also delight in intricately-cut stone, such as the Al-Aqsab with black and white limestone and, like the Al-Tawba, with a splendid stone-work minaret; and the Mausoleum of Taynabak al-Hassani (Figures 14 & 15), with its mix of marble, limestone inscription, and sandstone muqarnas. In Damascus, the Madrasa As-Zahiriya (1262-3) incorporates the Mausoleum of Al-Zahir Baybars, and is especially elegant, with its portal rich in inscriptions, and its interior retaining elaborate marble dadoes and mosaics inspired by those of the nearby Umayyad Mosque. The technique was to have a long life,⁴⁵ as indeed did the vogue for mosaic floors – such as that in the courtyard of the Muhi al-Din ibn Al-Arabi complex (1516), cut from antique columns. As in Aleppo,

44 Daszewski 1982, figs 16-17 for opus sectile floors from Kom Truga (W Nile Delta) and Alexandria (Kom el-Dikka).

45 The Madrasas Al-Jaqmqiya, Sabuniye and Sibaiye, built 1418-20, 1459-64 and 1509-15 respectively, demonstrate the continuing fashion for such exuberant decoration – or, as one critic has it (Eliséef, N., in *El Damascus*) “everything was sacrificed to outward appearance, and the monument was no more than a support for shown ornamentation.”

traditions continue, in the Darwish Pasha Mosque (1574) and Sinan Pasha Mosque (1590-4), which has an especially rich interior with marble columns and wall veneers, and superb marble minbar. For none of the above is the source of the marble or mosaic tesserae known, though sufficient monuments with re-used elements survive to be confident that such dazzling decoration did come from re-cut marble. In Aleppo these include the Bimaristan of An-Nouri (1154) with an antique tympanum gracing its entrance, parallel to Aleppo's Dar Al-Hadith (1154/74) which displays a re-used doorframe carved with a classical moulding; and its lintel block bears an elongated but unscripted *tabula ansata*. Classical columns are re-used in Damascus when available, such as those in the mihrab of Nur Al-Din's tomb-chamber. In Cairo, all marble and granite were in re-use, together with the few applications of mosaic tesserae such as the mihrab in the Aqbughawiyah Madrasa at Al-Azhar (1339), or the mihrab on the qibla wall of the Mosque of Ibn Tulun (14thC).

Conclusion: Islam & the West

Roman and Byzantine materials allowed Islamic mosaics to be sumptuous, but much more study is needed to ascertain the source of the tesserae, for our narrative accounts never list these, and earlier excavators have usually shown little interest in what might have happened to church structures when they fell out of use. This is a pity, for the mediaeval West was much enamoured of Islamic mosaic patterns,⁴⁶ and it would be interesting to know more of any connections. Famously, Abbot Desiderius supposedly imported mosaic workers from Constantinople "peritos utique in arte musiarum et quadratarum" (Chron. Cas. 3.27) because the "magistras Latina" had neglected mosaic-making for centuries.⁴⁷ This was probably not true – but in any case it is probably the lands of Islam, rather than Byzantium, which were the focus of mosaic expertise in Desiderius' day. Is it possible, indeed, to chart the progeny and group the relationships of the mosaic tesserae of a selection of important monuments, to ascertain both their source and their spread? This is possible, and has been done both for marble (cf. the various conferences of ASMOSIA⁴⁸) and for glass mosaic, as we have seen. If the Roman left us a "marble map" of the Mediterranean, then a "mosaic map" would be just as useful, allowing us to chart relationships not just at design level, but also at that of tesserae as well. Given that scholars today are often alert to re-use, such endeavours should allow us to learn much more about the diffusion and re-use of tesserae around the Mediterranean.

46 As at Pisa, where the workshop of Rainaldo was producing Islamic-derived mosaic panels, of which sections survive in the Opera del Duomo, together with capitals, including an Islamic one.

47 Maguire 2001, 164-6: the author of the *Vita Basili* refers to floors ringed with "spokes," which to Maguire suggests comparison with the floor at Montecassino, 1071ff; Giuliano 2003 for Desiderius and his commissions, plus Islamic influences. Bloch, for one, once believed that there were indeed suitable craftsmen in Rome by this date (that is, before the Cosmati: Bloch 1982, 617 note 5); but he later wrote that Greek expertise was needed to help Desiderius re-create Early Christian mosaic: Bloch 1986, 92.

48 Association for the Study of Marble and Other Stones in Antiquity: <http://www.asmosia.org>

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