

Early Roman stone tesserae from Southwick villa, West Sussex

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Lavishly planned, perhaps in imitation of Fishbourne palace at Chichester nearby to the west, the early Flavian villa at Southwick stands on the coastal plain of the South Downs and the Channel seaboard. It has experienced a complicated and varied sequence of investigations over the last 200 years, but nothing now remains above ground. Losses, dispersals and disposals have significantly reduced the number of border/corridor and mosaic tesserae recovered over the years. Those that remain are of ceramic, soft and hard chalk and, on scientific examination, in this paper, Kimmeridgian dolomitic cementstone. They were probably used to make bichrome ('black' and white), geometric mosaics in the reception rooms and bath suites of the villa. Except for the lack of red and yellow burnt Kimmeridgian shales, the assemblage of tesserae is similar in character to those employed for early mosaics (1st century–early 2nd century AD) across southern Britain as a whole, from Exeter and Caerleon in the west to Silchester, London, Fishbourne and Eccles in the east. All of the sites benefited from a well-organised mosaic industry that exploited the varied geological resources of the Poole–Purbeck region of Dorset. This piece places Southwick villa within this context for the first time.

INTRODUCTION

The Roman villa at Southwick is notable within the exceptional group of early Roman villas in Sussex due to its plan, which has been interpreted as a scaled-down version of Fishbourne palace (Cunliffe 1973, 74, 78; Black 1987, 102–3), and unique among the group in its decoration, with tesserae of coloured glass with gold leaf, possibly from a wall mosaic (Standing and Leigh 2012; Winbolt 1932, 24–5). The early Sussex villas were perhaps built by the pro-Roman native aristocracy, and Southwick villa may accordingly be the official residence of a sub-regent within the client kingdom of Togidubnus (Cunliffe 1973, 79; 1991: 165, 167; Rudling 1998, 44–6) or a descendant member on the *ordo* (regional council) of the newly-formed *civitas Reg(i)norum* (Black 2008, 299–300, 303; see also Wachter 1995, 25–7; Fulford 2008, 8–11). The villa lies on the fertile coastal plain south of the Downs, close to the River Adur and the Channel seaboard (Fig. 1), and its situation reflects its likely role as a private rural retreat, an economic and communications centre, and a working farm with surrounding estate (Tomalin 2006, 29, 49, 54–5; Dyson 2003, 20–29; Winbolt 1932, 31; Cunliffe 1973, 79).

Dating to c. AD 75/80, on evidence of its plan and relief-patterned tiles (Rudling 1985, 77, 82; Black

2008, 302–3), and pottery and coins (Canham 1966, 281; Curwen 1940, 138; Standing 2011), Southwick was built as a grand architectural structure, and reflected contemporary Mediterranean villas in style and decoration (e.g. Percival 1976, 57–60; Smith 1997, 173–6, 183–4). It was a lavish rural residence, with suites of baths and large, imposing rooms forming clustered units of space. The villa was built with four wings, connected by corridors, which were set around a central, inward-facing courtyard (peristyle) that would almost certainly have contained an ornamental garden, on the model of Fishbourne (Fig. 2) (Winbolt 1931a, 1932; Cunliffe 1971c, 128; Black 2008, 302).

The yellow-green, gilt-glass tesserae from Southwick villa, the largest number from any site in Roman Britain, have recently been the subject of scientific analysis (G. J. Leigh pers. comm.). This work has revealed new information about the composition and possible sources of these extremely rare mosaic materials.

There are, however, other mosaic materials at Southwick. In this paper, we reappraise the decoration of the villa in order to obtain information on the materials, date and possible style of the stone mosaics, as well as the connection between this and other key early Roman rural properties in Sussex and, more widely, in southern Britain. These matters at Southwick have hitherto

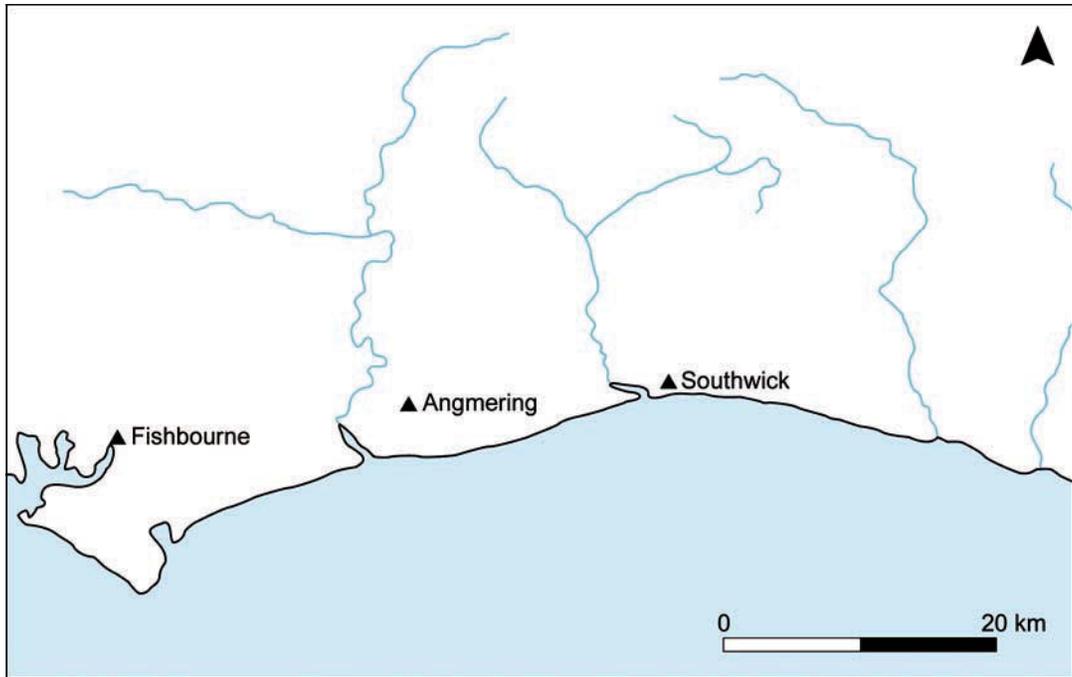


Fig. 1. Early Roman (1st century) villas in Sussex with confirmed Kimmeridgian tesserae (redrawn and adapted after Gilkes 1999, fig. 1).

received little academic attention, something that is perhaps not surprising given the scattered and meagre nature of the surviving material — Neal and Cosh (2009, 557) claim ‘lost’ — and that no articulated mosaics can be seen today. The work forms part of a wider research project, based on an investigation of the source and use of mosaic stone materials at early Roman sites across southern Britain from the 1st century and early 2nd century AD (Allen and Fulford 2004; Allen 2009; Allen *et al.* 2007; Allen and Todd 2010).

PREVIOUS TESSERAЕ FINDS AND IDENTIFICATIONS

There are scattered references to the finding of mosaic and tesserae in the literature on Southwick villa, spanning the two centuries of its investigation. The first collation of this material, below, serves as background to our analysis and interpretation, and as a record of finds to date.

1815

The earliest record of mosaic at Southwick villa is an account by Mr James Rooke of Southwick, who

in c. 1815, as a boy, observed ‘Roman remains and pavements’ in the aptly-named ‘Roman Field’ in which the villa lay (Salmon 1922, 87–8; Winbolt 1926, 88–9). He says nothing further about the ‘pavements’, but notes that ‘the walls were knocked down to allow of the land being ploughed over’, and that they ‘dug down to the floor of some of the rooms, but not all’. Digging later in 1931, S. E. Winbolt noted that the villa walls had at some time been razed to a uniform level, and that ‘not a single room floor had been left’, which he considered suspicious and a possible consequence of 19th-century intervention (Winbolt 1931a, 479; *cf.* Rudling 1985, 74, 77).

1837–47

A second investigation was recorded in 1847, through the exhibition at a General Meeting of the Sussex Archaeological Society of ‘Ancient Roman pottery, mosaic, &c., from the Roman villa, at Southwick, belonging to Mr. N. Hall’ (SAS Committee 1848, ix; Winbolt 1932, 13). These finds were the result of a systematic excavation across the villa, rather than for land clearance, which was conducted by Mr Nathaniel Hall, the

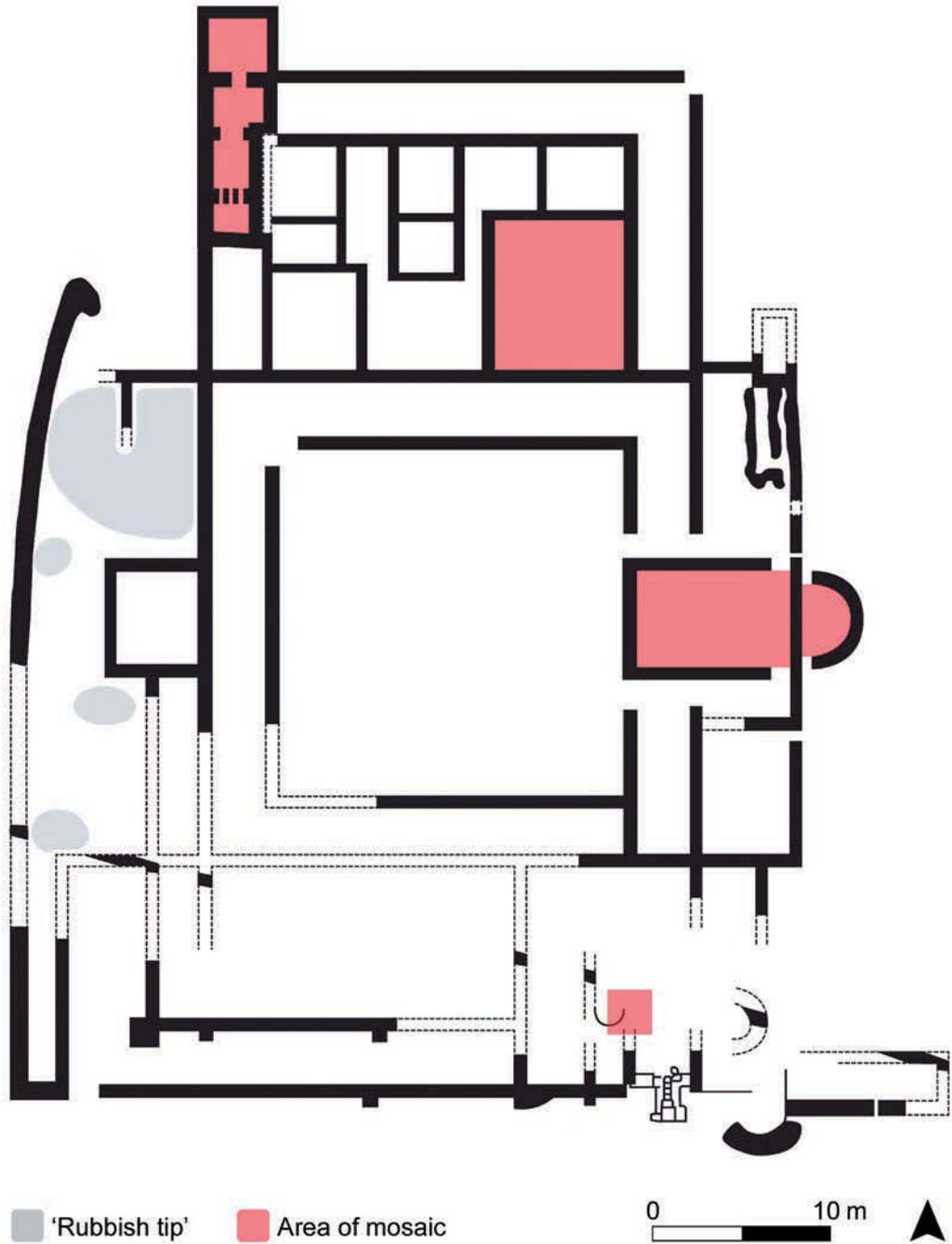


Fig. 2. Suggested original locations of mosaics (in red), and findspots of tesserae in 1931 (in grey), at Southwick villa (redrawn and adapted after Winbolt 1935, 27).

then landowner (Winbolt 1926, 90–91; 1932, 14). Earlier reference to excavation on the villa site, in 1837, and the discovery of Roman finds ‘dug up near the foundations of walls’, may refer to this investigation, though no mosaic was recorded (Curwen 1940, 138; *see also* Cooper 2010, 68). In letters of 1925 and 1931, Mr Hall’s grandson, N. F. L. Hall, then owner, records that the site was thoroughly investigated by his antiquarian-minded grandfather, and thought that there was ‘no tessellated pavement found’ (Winbolt 1926, 90; 1932, 14).

It is clear from the 1847 exhibition that ‘mosaic’ from Southwick villa was displayed, although it cannot have been a large section due to portability (‘mosaic’ might otherwise refer to loose tesserae). The answer may lie in the plan (subsequently misplaced) of the villa made by Mr Hall in c. 1847, following his excavation of the site in its entirety, which was also exhibited with the finds; S. E. Winbolt had not seen this plan prior to his excavations (Winbolt 1932, 13; 1935, 4). This plan has now come to light and, in the south-east corner of the south wing of the villa, in a room adjoining the south-east bath suite, marks a small, rectangular area as ‘Being a small piece of tessellated pavement about the size and shape of our tea tray’ (ESRO ACC3412/3/718; *see also* ACC3412/3/43). There is no indication of the materials or design.

This single piece of mosaic may have been that which was exhibited to Society members in 1847. Indeed, S. E. Winbolt did not detect this mosaic *in situ* in his subsequent excavation in 1931, which may confirm this suggestion, but it should again be noted that this room was not fully investigated at that time (areas 39–41 in Winbolt 1932, 15), because Manor Hall Road had been built through the south wing (Winbolt 1932, pl. 1). He did, however, observe ‘a rounded piece of *opus signinum* floor’ at the southern end of room 40 (Winbolt 1932, 15, 22, 31), close to where the mosaic was previously recorded. However, apparently *contra* Winbolt’s published accounts, contemporary sources report the finding of ‘several groups of red tesserae’ in the area of the south-east baths (Burstow 1931, 83), which originally ‘had a red tessellated pavement, and some of the tesserae still remain in the floor’ (Unknown 1931), perhaps as detected in c. 1837–47. Winbolt may, therefore, have drawn a distinction between the discovery of ‘tessellated’ and ‘mosaic’ floors.

1885–1925

A single reference to a third and final intervention during the 19th century was noted by S. E. Winbolt during a visit to the site in 1925, when he was informed by H. M. Reed, the tenant market gardener, that his father had ‘some forty years ago dug out, close by, the flint walls of a room about 20 ft. [6m] square, and for a long time the flints were left under the hedge by the road’ (Winbolt 1926, 89; 1932, 13). This would date to c. 1885, and appears to have been for reasons of cultivation rather than archaeology. Winbolt recorded that Mr Reed ‘was aware of the remains of walls which occasionally interfered with ploughing’, and noted from him, before his visit, that ‘plenty of broken brick and tile and tesserae of various sizes could be picked up’ (Winbolt 1931a, 422). This is the first reference to loose tesserae on the field surface, though with no further details of material or colour, and clearly indicates that by the 1920s mosaics had been disturbed by ploughing, clearance and excavation.

Even with this knowledge, it was assumed in the 1920s that ‘the pavements are still intact, and only await the enthusiasm of some archaeologists to take the necessary steps for carefully uncovering them that they may once more be exposed to the gaze of man’ (Salmon 1922, 88). Sadly, this poetic optimism was not rewarded during the 1930s excavations.

1931

S. E. Winbolt directed the total excavation of Southwick villa in 1931, when the site was threatened with development following a change of land ownership (Winbolt 1931a; 1932; 1935, 25–8). Like Mr Nathaniel Hall before him, though unaware of the fact, Winbolt exposed the whole villa plan, but made a thorough, published record. Winbolt found a range of loose tesserae, commenting that ‘Ordinary 1-inch [25mm] cube tesserae, for paths and floors, were numerous’, and indicating ‘That there were in some rooms ... mosaic floors of fine workmanship, is proved by our finding many hundreds of small tesserae of standard materials and size, including ¼-inch [6mm] and ⅛-inch [3mm]’ (1932, 29). A contemporary account, by one of the assistant excavators, further noted the collation of ‘several boxes of tesserae, white, red and black’ (Burstow 1931, 85). Some of the tesserae recovered from the

site were recorded in contemporary photographs (Winbolt 1932, fig. 6; Standing and Leigh 2012, fig. 1). Winbolt was aware, however, that these loose tesserae indicated former intervention: 'As we found not the smallest portion of such a floor, it would appear that the mosaics were either taken up or broken up in the digging of the early nineteenth century' (1932, 29).

While Winbolt found no mosaics *in situ* at Southwick villa, he suggested that the largest room (no. 14 in 1932, 15) in the north wing originally contained fine mosaic (1931a, 479; 1932, 29). This appears to be because he found gilt-glass tesserae in and around that room, and assumed that the small stone tesserae originally accompanied them (1932, 24–5, 29; cf. Collingwood and Taylor 1932, 221; Standing and Leigh 2012). In fact, Winbolt indicates that the stone tesserae were mostly found in one or more dumps of Roman material just beyond the west wing, which he suspected had been formed as a result of previous excavation (1931a, 479–80), rather than in rooms. 'In the rubbish heaps we found in plenty the household and personal objects which prove a well-to-do Roman-British [*sic*] style of living, including hundreds of tesserae, which tell of fine mosaic floors' (Fig. 2) (1931b, 674).

Winbolt subsequently gave more detail of the materials and colour of the tesserae, namely 'Several hundreds of small tesserae of standard sizes, including ¼-inch [6mm] and ⅛-inch [3mm] — of chalk, blue lias, sandstone and brick; fine mosaic must have adorned at least one floor' (Winbolt 1935, 28). This appears to be the first published description of any tesserae, by material, from Southwick.

1933–34

The north-west corner of the north wing was subsequently excavated in 1933–34 by Winbolt's assistant, C. R. Ward, below the level of the chalk surface (a modern dump) in that area (*cf. c.* 1847 plan, ESRO ACC3412/3/718). A bath suite was discovered, which was found to interrupt the walls of the northern corridor and represent an addition to the original plan (Fig. 2) (Ward 1934, 91; Winbolt 1935, 27, 70). Whereas no intact floor levels survived, its original decoration is indicated by Ward's finding loose building materials in the hypocaust below, described in two accounts as including 'several ¼ in. [6mm] white, grey and

red tesserae which had originally formed part of a pavement' (Ward 1934, 91), and '¼ in. [6mm] tesserae, grey and white, with mortar adhering' (Winbolt 1935, 70).

1965–81

By the time the excavations of the 1930s were complete, the site had been purchased by an anonymous donor to prevent it from being developed, and the villa (notably the north wing and courtyard corridors) was opened to the visiting public (Salmon 1932; Collingwood and Taylor 1932, 221). The fenced site was owned and managed by the Sussex Archaeological Trust, and received visitors for several decades. Regrettably, the land was sold by the Trust in 1953–54 to a local housing developer, and was subsequently purchased, and built upon in 1965, by the Southwick Methodist Church (Rudling 1985, 73–4).

Twelve small trenches were dug as part of a watching brief by R. A. Canham during construction of the Methodist Church, across the east and north ranges and central courtyard of the villa (Rudling 1985, 74–7, fig. 2; Canham 1966). Although these areas had been investigated in the *c.* 1847 and 1931 excavations, seven loose tesserae were recovered (Rudling 1985, 82). A subsequent single-trench rescue excavation was conducted in 1981 by the Sussex Archaeological Field Unit, before the extension of the Manse, which overlies part of the central courtyard. A single loose stone tessera was recovered from the topsoil (Rudling 1985, 77, 82; *see* also the Southwick Villa Catalogue by G. J. Leigh in the Manor Cottage Heritage Centre, Southwick).

The finds from 1965 and 1981 were re-assessed as 'seven stone and one tile' tesserae (Rudling 1985, 82). The latter is described as a 'cut-down tile tessera' of the '1-inch [25mm] type' noted as 'numerous' by Winbolt (1932, 29), while 'the stone tesserae are much smaller and range in size from 10 × 10 × 9 mm to 20 × 14 × 10 mm. Four are made of chalk (one has a flint surface) and the other three are of micaceous sandstone (one has a quartz capping)' (Rudling 1985, 82); one of the 'sandstone' tesserae was found in the 1981 excavation (Southwick Villa Catalogue). An origin for this sandstone was not suggested, but 'two fragments of Wealden sandstone' were also recorded in the reassessment, under 'Stone Foreign to the Site' (Rudling 1985, 83). It may

Table 1. Description and location of tesserae from Southwick villa.

Excavation	Description/materials recorded	Present location	Number present	Museum accession number
1815	'pavements'	—	0	—
1837–47	'mosaic'	—	0	—
1885–1925	'tesserae'	—	0	—
1931	'standard materials'; 'chalk, blue lias, sandstone and brick'; 'white, red and black'	Marlipins Museum, Shoreham-by-Sea	54	SHORM89/58 SHORM91/1689 SHORM92/2059 (1958.19.2.28)
		Barbican House Museum, Lewes	11 ¹	1958.19.2.44 1958.19.2.45
1933–34	'white, grey and red'; 'grey and white, with mortar adhering'	—	0	—
1965–81	'stone and tile'; 'chalk' (one with 'flint surface'); 'micaceous sandstone' (one with 'quartz capping')	Manor Cottage Heritage Centre, Southwick	8	S-SOU/65/V/6b ⁱⁱ S-SOU/65/VII/4 S-SOU/65/VII/6 S-SOU/65/X/4 S-SOU/65/XI/6 S-SOU/65/XII/3 S-SOU/65/XII/4 S-SOU/81/1
2008–11	'ceramic and hard chalk'; 'soft chalk'	Manor Cottage Heritage Centre, Southwick	4	Part of SWK08 and SWK11 archives

¹ Four small segments of mortared tesserae are also present.ⁱⁱ These numbers as per the Southwick Villa Catalogue (*see above*).

be implied that the 'sandstone' tesserae were from the same local (Wealden) source, as was previously considered at Fishbourne palace and Angmering villa to the west (*cf.* Allen and Fulford 2004, 22–6).

2008–11

Small watching briefs and commercial evaluations have taken place on or next to the villa in recent decades but have not revealed any further tesserae (West Sussex HER). More recently, in 2008, a small research excavation, a 2 × 1.6m test-pit, was conducted by one of the present authors c. 40m south of the southern wing of the villa, in the playing field of Eastbrook Primary School (Standing 2010; 2011). This was designed to investigate the immediate villa environs, and to set the main site within its original Roman context. Two tesserae of 'ceramic and hard chalk' were recovered from the mixed subsoil layer (context 2) containing Roman and more recent finds (Betts 2009, 31; Standing 2010, fig. 2). The ceramic (tile) tessera 'measures 29 × 24 mm with a thickness of 15mm', similar to the single tile tessera found in 1965, and the smaller 'hard chalk' tessera 'measures 23 × 12 × 11 mm', again comparable with the stone tesserae from the 1965 excavation (Betts 2009, 31, 34).

Most recently, in 2011, a subsequent small-scale excavation, a 1.5 × 1.25m test-pit, was undertaken in the same location in the north-west corner of the playing field (Standing 2011). Two further tesserae were found, in a Roman level: a ceramic (tile) tessera of 15 × 11 × 11mm, smaller than the hard chalk tessera in 2008, and a soft chalk microtessera of 6 × 6 × 6mm, which represents the only survival now of the ¼-inch [6mm] type which Winbolt and Ward observed in the 1930s (*see above*).

It is possible that these tesserae were originally present in the south-east baths, explored in c. 1847 (*see above*), but pulled south the short distance by post-Roman ploughing, or that they originated from one of the early outbuildings detected beyond the south wing of the villa (Standing 2010; 2011).

SOUTHWICK VILLA TESSERAE IN COLLECTIONS

Having reviewed the history of the discovery of tesserae, and the identifications placed on the tesserae materials at the time, we now briefly address the question of what has survived. The finds are scattered between three repositories, and the quantity is relatively meagre (Table 1).

There are no surviving tesserae from excavations or field survey before those discovered by Winbolt in 1931. Most of these finds 'of interest' were deposited at Hove Museum (Winbolt 1935, 28), where they remained until part of the collection was acquired in 1958 by the Sussex Archaeological Society and then entered into Barbican House Museum, Lewes, and Marlipins Museum, Shoreham-by-Sea (Rudling 1985, 73; SAS Reg. No. 58.19/2). The signs originally numbered 'many hundreds' of small stone tesserae and 'numerous' border tile tesserae from that excavation (Winbolt 1932, 29); 65 loose tesserae in total survive in collections today: 42 small tesserae (30 white, 10 grey, 2 tile) and 12 border tesserae on display at Marlipins Museum (Fig. 3), and seven small tesserae (3 white, 3 grey, 1 tile) and 4 border tesserae in store at Barbican House Museum. The Barbican House collection also includes four small segments of *opus signinum* mortar with small and border tesserae attached. Although the original location of these within the villa is unknown, these segments may relate to those detected in the south-east baths (*see above*). None of Winbolt's (1932, 29) microtesserae ($\frac{1}{4}$ inch [6mm] and $\frac{1}{8}$ inch [3mm] across upper surface) have been located, nor were they originally photographed (Winbolt 1932, fig. 6; Standing and Leigh 2012, fig. 1).

Some of C. R. Ward's finds, perhaps including tesserae from the north-west bathhouse (*see above*), also appear to have been deposited in Hove Museum, but these, as with the other part of Winbolt's collection, were, regrettably, disposed of during local government re-organisation in 1974–75 (Rudling 1985, 73–4; Hove Museum Accession Register, 1931–38).

The eight tesserae of 1965 and 1981 have all been preserved and, though remaining the property of Southwick Methodist Church (Rudling 1985, 74), are displayed at the Manor Cottage Heritage Centre, Southwick. The four tesserae from 2008 and 2011 are also here.

SCIENTIFIC EXAMINATION OF THE TESSERAE

Although not great, the quantity of stone and ceramic tesserae is sufficient to justify a partial scientific examination with a view to establishing, in conjunction with other evidence, the character

of the mosaics originally present at the villa and the likely provenance of the mosaic materials.

From among the more substantial number from 1931 housed in Marlipins Museum, 54 well-preserved examples of border/corridor and mosaic stone tesserae were chosen for examination (Fig. 3). The border/corridor tesserae, with dimensions similar to those already reported (c. 25mm), are of orange-red ceramic and appear to have been shaped from roof tiles. The mosaic tesserae, again with dimensions similar to those reported by earlier workers (c. 10mm), are of three kinds. Two tesserae are of orange-red ceramic and of 'double-cube' form. Thirty tesserae are of chalk, of two kinds under the hand-lens. One kind is soft, slightly porous and pure white. The other, more common, form is slightly grey and hard, compact and fully cemented, with faintly hackly, fractured surfaces commonly showing curved plumose marks, more familiar from the surfaces of joints in well-lithified rocks (Ernstson and Schinker 1986; Pollard and Aydin 1988; Savalli and Engelder 2005). About two-thirds of these chalk tesserae are of double-cube form and mainly of the hard variety. The remainder, chiefly of soft chalk, are single cubes.

Ten of the tesserae are of a distinctive carbonate rock that corresponds to the 'grey', 'blue lias' and 'micaceous sandstone' tesserae of earlier reports and the 'black' (after being oiled or waxed) tesserae that contribute to early Roman bichrome mosaics in southern Britain (*see below*). The rock has not responded well to weathering in the archaeological environment at Southwick villa and is now relatively soft. Varying in colour from brownish grey to dull greyish-brown, it is compact, unlaminated, faintly calcareous and very fine-grained. Under the hand-lens, abundant, irregular, subparallel streaks of dark-coloured organic material aligned with the bedding can be seen on a clean surface to be present. The appearance in a representative thin-section under the microscope is distinctive (Fig. 4) (*cf.* Allen and Fulford 2004: figs 3–4).

The rock is a dolomite composed of evenly textured, very fine-grained, locally euhedral dolomite crystals with some interstitial clay minerals and calcite. Also present are numerous irregular, wispy, subparallel streaks of blood-red to bottle-brown or opaque kerogen that correspond to the streaks of organic matter seen in the hand-specimen. Two small phosphatic fragments, a



Fig. 3. Border/corridor and mosaic stone tesserae from Southwick villa preserved at Marlipins Museum; the thin-sectioned tessera (sample SHORM 91/1689) is marked 'a' (photograph G. Standing).

piece of bone and a fish scale, were noted in the illustrated sample. The rock in hand-specimen and microscopically is unmistakable, and most unlikely to be confused with other fine-grained carbonate rocks outcropping in southern Britain.

Of a similar composition is the much smaller group of ten tesserae from the 1965, 1981 and 2008 campaigns preserved by the Southwick Society at the Manor Cottage Heritage Centre. Hand-lens inspection shows that dolomite tesserae (3) are present, as described above; there are also hard chalk tesserae (5) and two tesserae of orange-red ceramic. All except the ceramic tesserae are of double-cube form. A single-cube tessera confirmed

to be of soft chalk and a double-cube tessera of orange-red ceramic were recovered from the more recent test-pit of 2011.

At Barbican House Museum, Lewes, there is displayed a small cluster of five dolomite tesserae embedded in mortar, attributed to the villa (in addition to the four other small segments of mortared tesserae, of different materials). Its provenance is uncertain, but this fragment could have come from Southwick villa, as the museum houses some of Winbolt's finds (*see above*).

The assemblage of stone tesserae from Southwick villa is closely similar in composition to the materials used decoratively for mosaics and

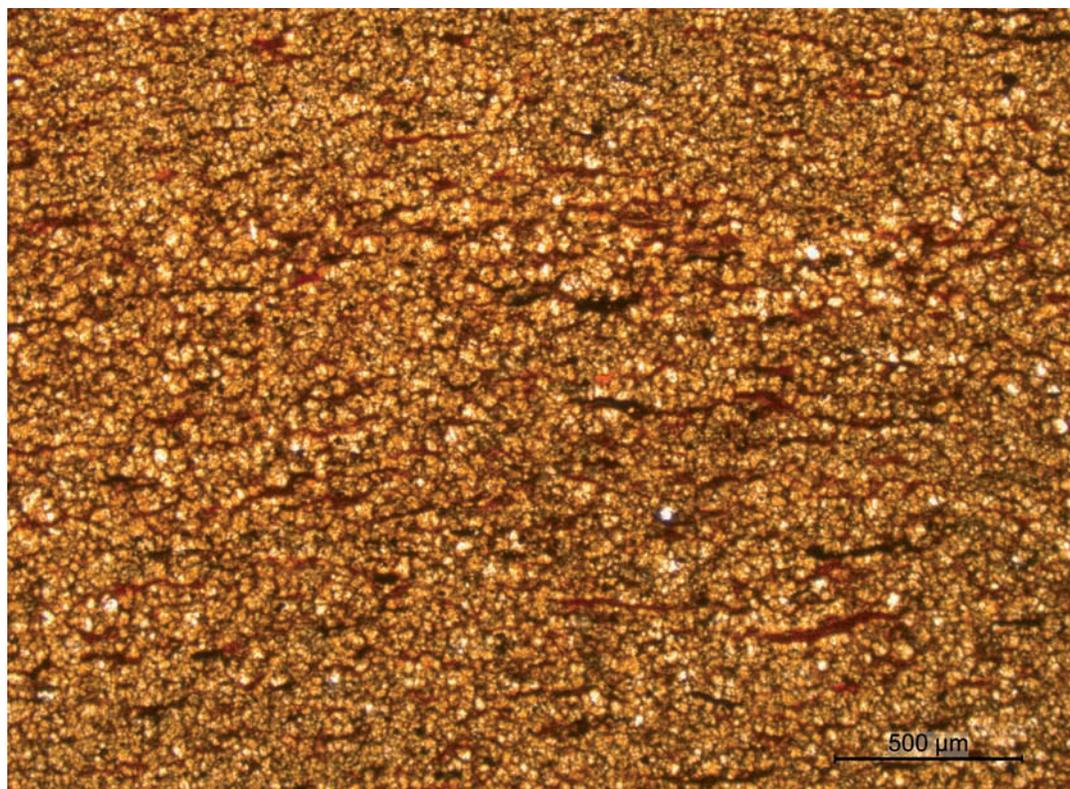


Fig. 4. Photomicrograph (plain polarised light) of a representative Kimmeridgian dolomite tessera from Southwick villa (sample SHORM 91/1689); the bedding in the rock runs left–right (photomicrograph M. Andrews).

opus sectile at the Fishbourne proto-palace and palace proper (Cunliffe 1971a, 1971b), especially those known from the Neronian ‘Builders’ Yard’, except for the lack of red and yellow burnt shale, which in any case were employed very sparingly as mosaic materials at this and other early sites (Table 2) (Allen and Fulford 2004, 22–4).

The soft chalk at Southwick is likely to be local — Shoreham-by-Sea lies on the outcrop of the Upper Cretaceous Chalk Group — but the hard chalk could have come from many tens of kilometres away to the west. It is reminiscent of the secondarily cemented chalk tesserae from Dorchester that Jones (1989) described using scanning electron microscopy (SEM), and the similar chalk tesserae from Roman Silchester that Wilkinson *et al.* (2008) dated micropalaeontologically to the uppermost Chalk Group that rims the Hampshire Basin and the Isle of Purbeck. Such work is highly specialised, but a

search for microfossils in hard chalk tesserae from Southwick villa is likely to be rewarding. It is worth noting, in contrast, that the chalk tesserae from the late Roman mosaics at Brading Roman villa, Isle of Wight, are attributed micropalaeontologically to the local Chalk Group (Tasker *et al.* 2011).

There can be little doubt about the provenance of the dolomite (grey) tesserae. Lithologically, they are indistinguishable from Allen and Fulford’s (2004, 13–14, fig. 4) type La, so abundant at Roman Silchester as loose and articulated items, and are matched in the dolomitic cementstones present in the Upper Jurassic Kimmeridge Clay Formation exposed in Kimmeridge Bay on the south coast of the Isle of Purbeck in Dorset. Interbedded with a variety of organic-rich shales, the dolomitic cementstones are composed of finely granular dolomite with abundant subparallel streaks of kerogen. Kimmeridge Bay lies 130km (80 miles) to the west of Southwick villa.

Table 2. Kimmeridgian stone used for tesserae and *opus sectile* at four early Sussex sites (see Allen and Fulford 2004, 22–6).

Site	Date	Tesserae materials	<i>Opus sectile</i> materials
Fishbourne proto-palace	c. AD 65–75	dolomite ⁱ	dolomite; burnt mudrocks
Angmering villa		dolomite	dolomite; burnt mudrocks
Fishbourne palace	c. AD 75/80	dolomite; burnt mudrocks ⁱⁱ	—
Southwick villa		dolomite	—

ⁱ Reference to ‘black and white’ mosaic in Cunliffe 1971a, 63.ⁱⁱ Present in later-Period-2 mosaics.

CONCLUDING DISCUSSION

With particular reference to mosaic materials, we have reviewed above the complicated history of research at Southwick villa, the extent to which such finds were made and the present whereabouts of the surviving material, and have given an account in modern terms of the geological character and provenance of the mosaic tesserae. Two issues remain to be addressed: the character of the mosaics represented and their archaeological significance at the site and within the immediate region, and the implications of the tesserae for the early Roman mosaic industry. The numbering of the rooms in the following discussion corresponds with those published on Winbolt’s (1932, 15) plan of the villa.

The available evidence indicates that Southwick villa was decorated with mosaics using tesserae of two or three colours, ranging up in size from the very tiny (microtesserae) (e.g. Johnson 2002, 10). The use of such small tesserae clearly suggests both floor and possible wall mosaics of the highest grade, detail and workmanship, a point stressed by Russell (2006, 138), and is perhaps suggestive of painterly *opus vermiculatum* mosaic (e.g. Smith 1983, 117–18), though the character and design of these mosaics cannot be directly known. Given the preferred Italianate style of the time (Cunliffe 1971a; Johnson 2002, 12–15), c. AD 75/80, all the tesserae are likely to have been incorporated into essentially bichrome (‘black’ and white) and probably geometric mosaics at Southwick, a suggestion favoured by the composition of the surviving assemblages of stone tesserae. A bichrome mosaic may also have occurred in the north-west baths (1), as many of the surviving tesserae are of the double-cube form. Tesserae of this shape, set upright in deep mortar, are widely prevalent in this context, where water-proofing is of paramount importance.

The finding of ‘many hundreds’ of stone tesserae prompted Winbolt (1931a, 482; 1932, 29)

to postulate that one or more mosaic floors were originally present in the villa, and specifically in the largest room (14) in the north wing, ‘where one would expect the most handsome mosaic pavement to have been’ (see Fig. 2) (1931a, 479). The interior measurements of this room were c. 28 × 23ft [8.5 × 7m] (Winbolt 1932, 16), which compares closely with the dimensions of the two large rooms (N7, N16), c. 28 × 28ft [8.5 × 8.5m], in the north wing of (Period 2) Fishbourne palace (Cunliffe 1971a, fig. 26). Room N7 at Fishbourne, like its equivalent N16, was ornately decorated during the Flavian period, and has been interpreted as a *triclinium* (dining room), the most lavish entertaining space in the north wing (Cunliffe 1971c, 105–9). Considered together, the comparable large size of room 14 at Southwick suggests that the largest room in the north wing there may also have been an ornate *triclinium*, rather than room 12 in the same wing (Winbolt 1932, 17) or the apsidal room (29–30) in the east wing (Black 1987, 102, fig. 43a; Russell 2006, 136–7; see also Perring 2002, 160–63).

The floor decoration of the apsidal room is unknown, as what appears to have been a plastered cellar (29) (e.g. Perring 2002, 183–5; Crummy 2001, 93–5), with downward steps (within 31), was situated below the room (c. 1847 plan, ESRO ACC3412/3/718, ACC3412/3/43; cf. Winbolt 1932, 15, 17–18, pl. 2; Black 1987, 103–4). But comparison with the tiny 1/8-inch [3mm] tesserae discovered in the audience chamber (W14) in the west wing at Fishbourne, the finest tesserae recorded at the palace (Cunliffe 1971c, 77–8; Neal and Cosh 2009, 535), suggests that the similarly-tiny 1/8-inch [3mm] microtesserae at Southwick (Winbolt 1932, 29; 1935, 28) might have adorned the apsidal room there also, rather than the dining room.

Recent examination beneath the later (mid-2nd century) ‘Cupid-on-a-Dolphin’ mosaic in room N7 at Fishbourne has revealed that the *triclinium* was originally adorned with a Flavian-

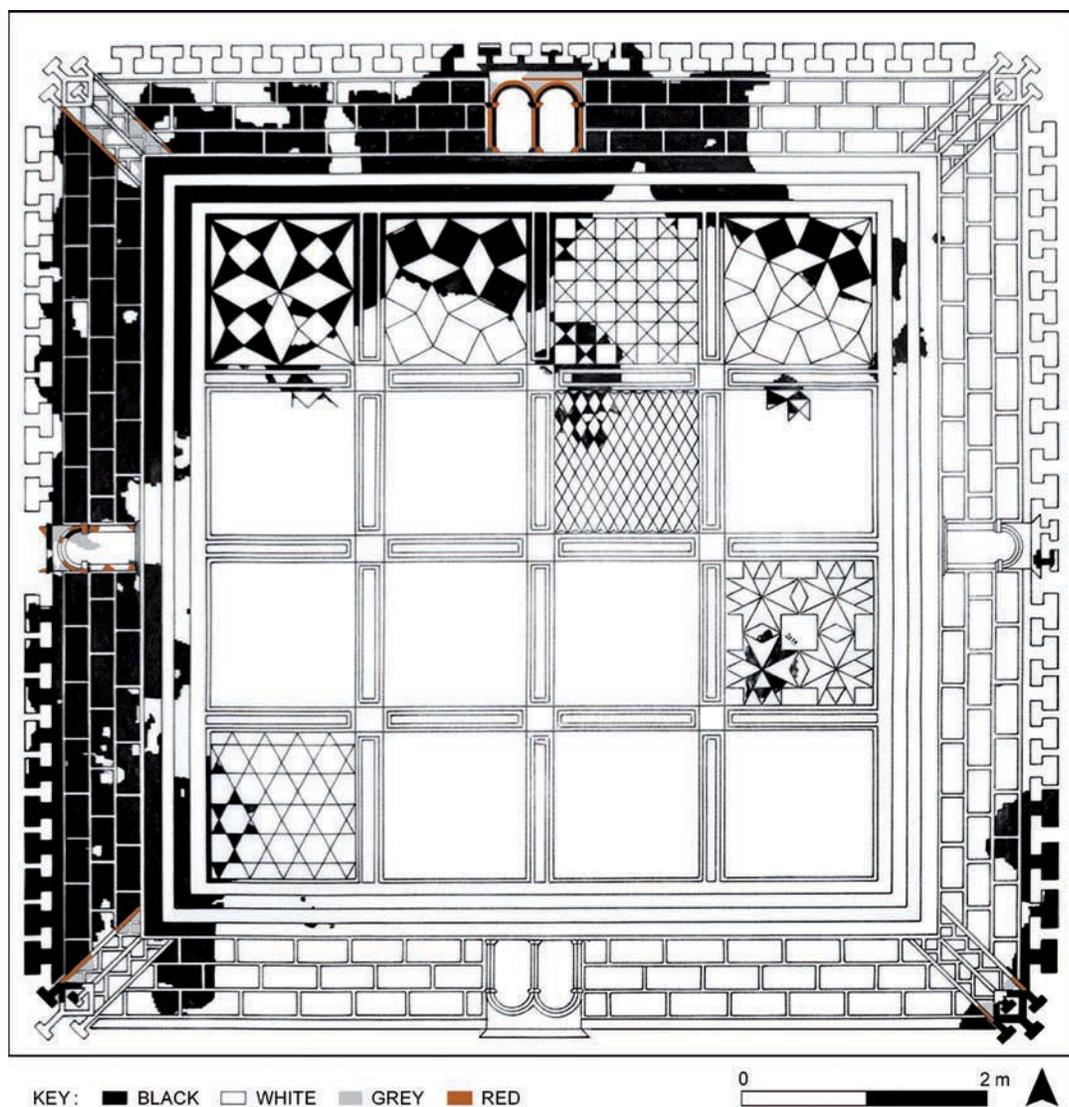


Fig. 5. Flavian-period geometric 'Fortress' mosaic from the N7 *triclinium* at Fishbourne palace (adapted after an original illustration by D. Rudkin preserved at Fishbourne Roman Palace).

period geometric 'Fortress' mosaic (now relaid N16), with small tesserae including chalk, Kimmeridgian dolomite and ceramic (Fig. 5) (Rudkin 1981; Allen and Fulford 2004, 23). By these analogies — of comparable plan and date, as well as by the similarity of the tesserae materials — it might reliably be considered that a mosaic such as this, if not in design, originally adorned room 14 in the north wing of Southwick villa, c. AD 75/80.

A similar comparison in date might be made between the slightly later north-west baths at Southwick, laid with 'black'-and-white mosaics over a hypocaust, and the similarly-inserted baths at the eastern end of the north wing at Fishbourne, from the early second century, though no contemporary mosaic was laid at the latter (Black 1987, 103; Cunliffe 1971a, 154–7). Indeed, it is perhaps noteworthy that the other room (?40) which contained mosaic at Southwick, discovered

partly *in situ* in c. 1847 (see above), may also have formed one of the floors in the south-east baths in the south wing.

The evidence at Southwick accordingly suggests mosaics in at least the main dining room and the bath suites, a not uncommon pattern of distribution within a villa (Perring 2002, 160–63, 173–7; Johnston 2004, 33–8), and in the apsidal (audience) chamber (Fig. 2) (*cf.* Manley 2003, fig. 10.1). This further confirms that the north wing, previously identified as the main (domestic or guest) range, on the model of the north wing at Fishbourne (Cunliffe 1973, 78; Black 1987, 103; *cf.* Rudling 1998, 44), was as elaborately decorated as it was finely constructed (see Collingwood and Taylor 1932, 221). It may be suggested, then, that as the Fishbourne proto-palace and Angmering villa, and Fishbourne palace and Southwick villa, respectively, may have been designed by the same architects (Cunliffe 1973, 78; Manley 2003, 130, 139 n.4; Beeson 2011), the same early mosaicists and designers, likely trained in Gaul or Italy (Johnson 2002, 13), may also have been at work at Fishbourne palace and Southwick villa.

Complementary evidence that may favour this possibility is provided by the similarity of the mosaic materials at both sites (Table 2) (see Allen and Fulford 2004, 22–4; Allen 2009). The occurrence of Kimmeridgian dolomite tesserae at Fishbourne palace seems to support a link with Southwick, but the work would have had to be more or less contemporaneous if the same mosaicists were to have been involved. The use of other Kimmeridgian materials (the burnt shales) does not appear to have occurred in mosaics at Southwick villa, but at

Fishbourne palace alone. Further study of other early villa sites on the Channel coast (notably in Sussex and Hampshire), where dolomite tesserae may also have been used (e.g. Russell 2006, 139–40, 143; Gilkes 1998, 49, 75, fig. 11), though not yet fully recognised, may provide a clearer chronology and distribution of materials.

What is clear, however, is that Southwick villa benefited from the same early Roman supply industry, exploiting the same geological resources of the Poole–Purbeck area of Dorset (Allen *et al.* 2007), as such far-flung settlements of the period as Exeter, Caerleon, Silchester, London (many sites) and Eccles villa in Kent (Allen 2009, fig. 1). The link with Southwick on the coastal plain, as well as the similarly-placed Fishbourne and Angmering, could have been by water along the coast (Fig. 1) (see Cunliffe 1971c, 73–4). Every means of dispersing its products — by water as well as by road — was evidently exploited by this major industry, which is only now being explored scientifically.

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