

NEW EVIDENCE RELATING TO BRAMBER BRIDGE

By E. W. Holden, F.S.A.

In 1974 a sewer trench, some 16ft. (5m.) deep, crossed The Street, Bramber, 105ft. (32m.) east of the fifteenth century timbered house known as St. Mary's, striking the foundation of one of the piers of Bramber's medieval stone bridge. Timber piles, some 9½ to 11ft. (2.9-3.4m.) below the surface, were encountered both north and south of the pier (Figs. 1 and 2). Recording was difficult owing to the dangerous nature of the subsoil, which required sheet piling, thus exposures of trench faces were rarely seen. The writer recorded the bridge pier and those wooden piles drawn in solid black (Fig. 2), whereas the piles shown in dotted outline were discovered when he was not at the site. However, the watchfulness of the Site Engineer, Clerk of Works, or Agent, enabled the information to be passed on.

Bramber lies on the west bank of the River Adur on a tract of alluvium in a gap in the South Downs, four miles (6.4 km.) inland from Shoreham-by-Sea. A post-medieval brick bridge, known as Beeding bridge, crosses the river to Upper Beeding on the east bank. The surface of the one-time water meadows at Bramber is between 9ft. and 10ft. above Ordnance Datum (2.74-3.05m. O.D.). Below the topsoil the alluvium is mainly a totally waterlogged sandy silt, commonly known as marsh clay, yellow above the fluctuating water-table and blue-grey where permanently wet. Before full embanking of the river and reclamation of the marshes there was a tidal estuary with at least two deep streams (known from historical evidence), the lesser one being to the east, probably where the Adur now flows under Beeding bridge. The configuration of the parish boundary between Bramber and Upper Beeding north of Bramber bridge (the shaded area in Fig. 1) suggests that in earlier times the mainstream split into two on that side, remnants of which still remain as tiny streams.

PREVIOUS INVESTIGATIONS

During repairs to the causeway in 1839 between Bramber and Upper Beeding the foundations of a medieval stone bridge were discovered and a report published ten years later.¹ The stonework of the piers and abutments included the springing of the arches which were some 2ft. (0.6m.) below the surface. All the stone down to about 3ft. (0.9m.) from the footing of the foundations was removed for re-use elsewhere. The piers were said to be constructed with an outside casing of Sussex marble (the local name for *Paludina* limestone) varying from 3ft. to 5ft. (0.9-1.5m.) in thickness, backed up with rubble and filled with concrete. The lower courses of stone were stated to have been laid in a bituminous cement; the arches were also of Sussex

¹ Rev. E. Turner, "On the Ancient Bridge Discovered at Bramber in the year 1839," *Sussex Archaeological Collections* (hereafter abbreviated to *S.A.C.*),

vol. 2 (1849), 63-77; W. H. Godfrey, "St. Mary's and Priory Cottage, Bramber," *S.A.C.*, vol. 86 (1947), 102-117.

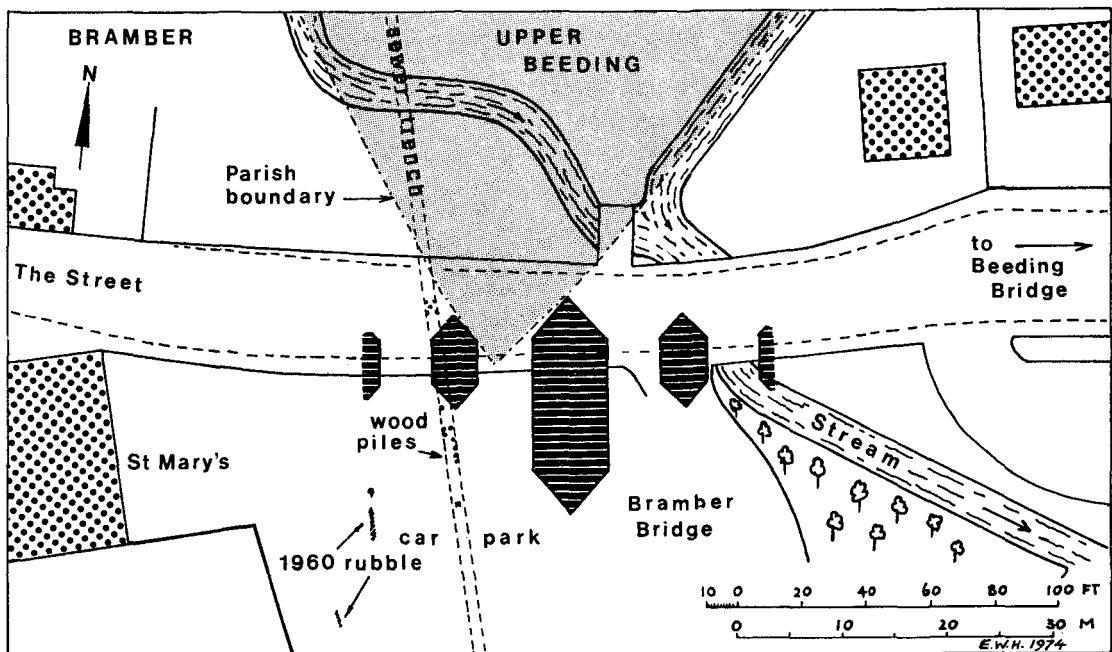


FIG. 1. Bramber Bridge. Plan of the bridge piers (after Figg, 1849) and the sewer trench

marble. The large central pier was presumed to have accommodated a chapel known in the fifteenth century to be dedicated to St. Mary.¹ Window mullions of Caen stone and a black glazed floor tile were found on the central pier, suggesting that a building had indeed once stood there. The 1849 report adds that "the bridge, indisputably of medieval date, displayed in its removal red mortar, having in its composition pounded brick or tile." It continues: "This redness . . . was more particularly observed in the rubble with which the piers were filled up".² Because the Romans were known to have used pounded pottery, brick or tile in a good mortar mix, the recorders concluded that the inner portions of the piers formed part of an earlier bridge, and therefore, that *that* former bridge was Roman (see p. 107 where this is disputed by the present author).

It is of much interest that a contract for the repair of the bridge exists, dated 1477 and a second dated 1478-9. These are more fully discussed later.³

In 1956 a narrow sewer trench was dug along the entire length of The Street, Bramber, revealing numerous wooden piles of a causeway, as well as slight traces of the medieval stone bridge.⁴ The trench, which zig-zagged across the roadway, cut across the alignment of the piles which, it was stated, could be seen intermittently over a distance of 200ft. (61m.), with Bramber Museum in a central position, plus an isolated pile opposite St. Mary's. The piles were said to be of oak, well preserved, 4-5ft. (1.2-1.5m.) long, often 12in. (304mm.) square in section and tapered at the lower end. Several had lateral supports and one had a mortised top with peg-

¹ S.A.C., vol. 2 (1849), 71.

² S.A.C., vol. 2 (1849), 72-3.

³ Shortened versions are given in S.A.C., vol. 22 (1870), 232-3, but a more accurate rendering is by L. F. Salzman in *Building in England* (1952), 538-40.

⁴ Recorded by P. N. B. Mabey, "An old Causeway or Bridge at Bramber," in *Sussex Notes and Queries* (hereafter abbreviated to S.N.Q.), vol. 14 (1954-57), 239-40.

holes. The tops of the piles were 2ft. (0.6m.) below the road surface in the west, below the castle,¹ and more than 9ft. (2.75m.) in the east. The interpretation was that the piles were part of a wooden causeway crossing tidal marshland. The only solid part was a 30ft. (9m.) length of limestone rubble, 5ft. (1.5m.) deep east of St. Mary's connecting with Sussex marble masonry and limestone 7ft. (2.1m.) thick which was considered possibly part of the stone bridge. The above interpretation is entirely practical and reasonable.

In 1960 the writer saw a shallow drain trench which had been dug in St. Mary's car park west of and roughly parallel to the 1974 sewer (Fig. 1).² This trench, which did not exceed 3ft. (0.9m.) in depth below the surface of the car park, passed through rubble consisting of flints, mortar, sea cobbles and boulders, lumps of Sussex marble, fragments of roofing slate, Horsham stone, and there were a few medieval green glazed potsherds. It is not known how far below the trench bottom the remains continued. Later in the same year and throughout part of 1961 boys from Steyning Grammar School dug sporadically around the trees situated between the rubble just described and the angle of the rear garden wall, finding further evidence of a medieval building in traces of a wall, flints, mortar and roof tumble just below the surface.³ Owing to the high level at which both sets of remains were found their relationship to the bridge has not been established.

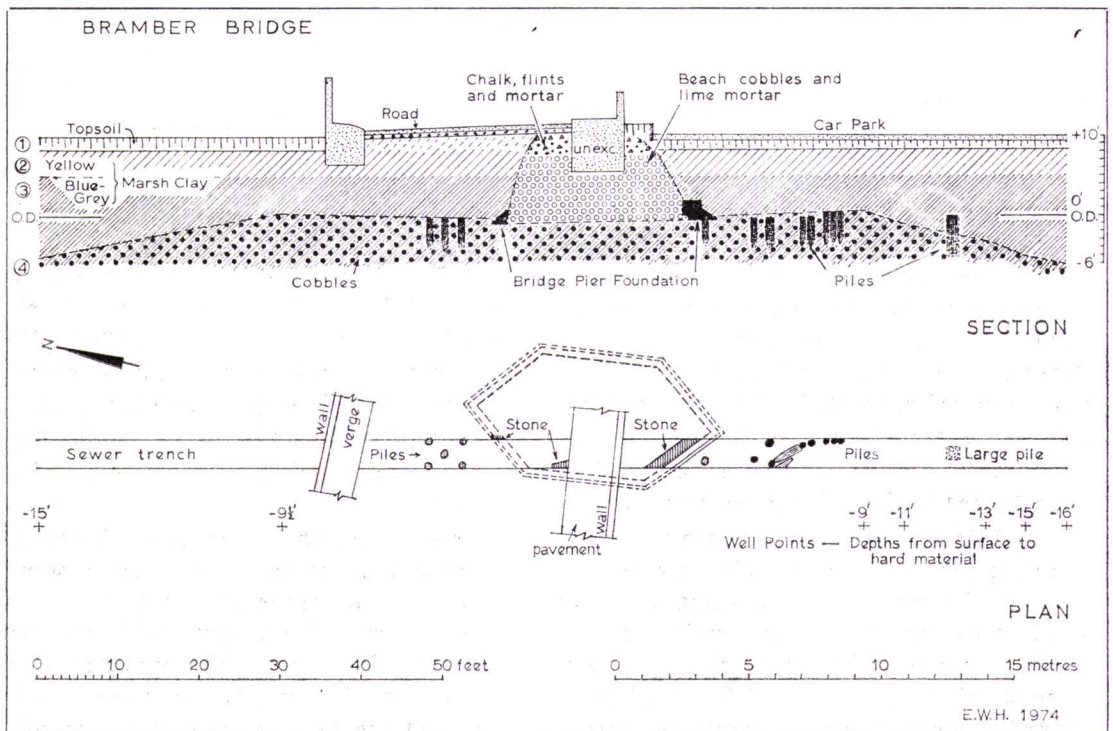


FIG. 2. Plan and section of the trench

¹ There is a discrepancy somewhere, as it is nearer 500ft. westwards from the Museum to "below the castle." Perhaps the length should be 200 yards and not feet.

² *S.N.Q.*, vol. 15 (1958-62), 238-40.

³ This excavation remains unpublished.

One further piece of evidence remains to be noted. W. H. Godfrey records: "In the grounds [of St. Mary's] have been found the remains of a wharf, which would have served the river just below the bridge, and of a road connected with the highway, which ran directly north from the wharf."¹ Unfortunately, no records of the wharf were published and Miss D. H. Ellis, the owner of St. Mary's, has no recollection of the details, but was able to point out the approximate place where traces of timbers were seen by Godfrey during works excavations in the northern part of the caravan park south of St. Mary's car park. Godfrey shows a conjectural road to the wharf in his Fig. 1. No trace of one was seen in the 1960 drain trench, but it could be at a lower level.

THE EVIDENCE FROM THE SEWER TRENCH

Vertical iron pipes connected to pumps (known as well-points) were inserted at intervals in the ground, parallel to the sewer trench, for the purpose of de-watering the soil before a mechanical excavator dug the trench (see Fig. 2 for the positions of the well-points). The vertical pipes normally were driven in to a depth of at least 15ft. (4.6m.), but in several instances the pipes struck against a hard unyielding material which prevented further penetration. When this hard layer was exposed at the same depths in the sewer trench it was found to be composed of sea-cobbles and boulders in viscous blue-grey silt, plus rare fragments of chalk (Fig. 2, Layer 4). It was possible to plot the varying depths of the well-points revealing a flattish extent of cobbles some 72ft. (22m.) wide, with the bridge pier roughly central, sloping down at the north and south edges to an unknown depth. The cobbles passed below the bridge pier foundation, but at no point was the bottom of the layer reached. The cobbles surrounded the piles and the tops of the latter in most cases were about level with the top of the cobble layer. It is not known how far, if at all, the cobbles extended eastwards beyond the trench.

The lower courses of masonry encountered in the trench were all of Sussex marble, no other limestone being found other than one tiny chip from a dump. Contrary to the 1849 report none of the blocks of stone was set in a bituminous cement (see Fig. 3, 5 for a section of the footings). The core of the pier stood for a considerable height and consisted of a lime concrete with a matrix of coarse sea sand and cobbles from the beach. Here again, evidence disagrees with the 1849 report. There was *no* pounded brick, tile, or pottery whatsoever in the concrete. It could be that the pea-sized and smaller pebbles in the sea-sand were mistaken for "grog," though their colour is predominantly a warm brown, but with the eye of faith and a determination to find traces of a Roman bridge, they might be thought to be of a reddish tinge. A factor militating against a Roman precursor to the medieval bridge is the fact that no known Roman road approaches Bramber or Beeding.²

Fragments of five wooden piles were noted north-west of the bridge pier, and on the south side, below St. Mary's car park, nine piles were encountered. The latter ranged in size from 6in. by 5in. (152 by 127mm.) up to 12in. by 10in. (304 by 254mm.), or c.12in. (304mm.) diameter if unsquared. The squared piles had the vertical edges rounded off. Their lengths were rather difficult to define exactly as most had been mutilated by the machine, but it can be said that generally they varied from 4ft. to 5ft. (1.2-1.5m.) in length (Fig. 3, 3 and 4), although one pile would have exceeded 6ft. 8in. (2.1m.) long (Fig. 3, 2). The lower part of this one was octagonal in section reducing to a point, whereas the others, where seen, were more roughly tapered. One

¹ *S.A.C.*, vol. 86 (1947), 112, and see Fig. 1.

² None is depicted in I. D. Margary, *Roman Ways in the Weald* (1948).

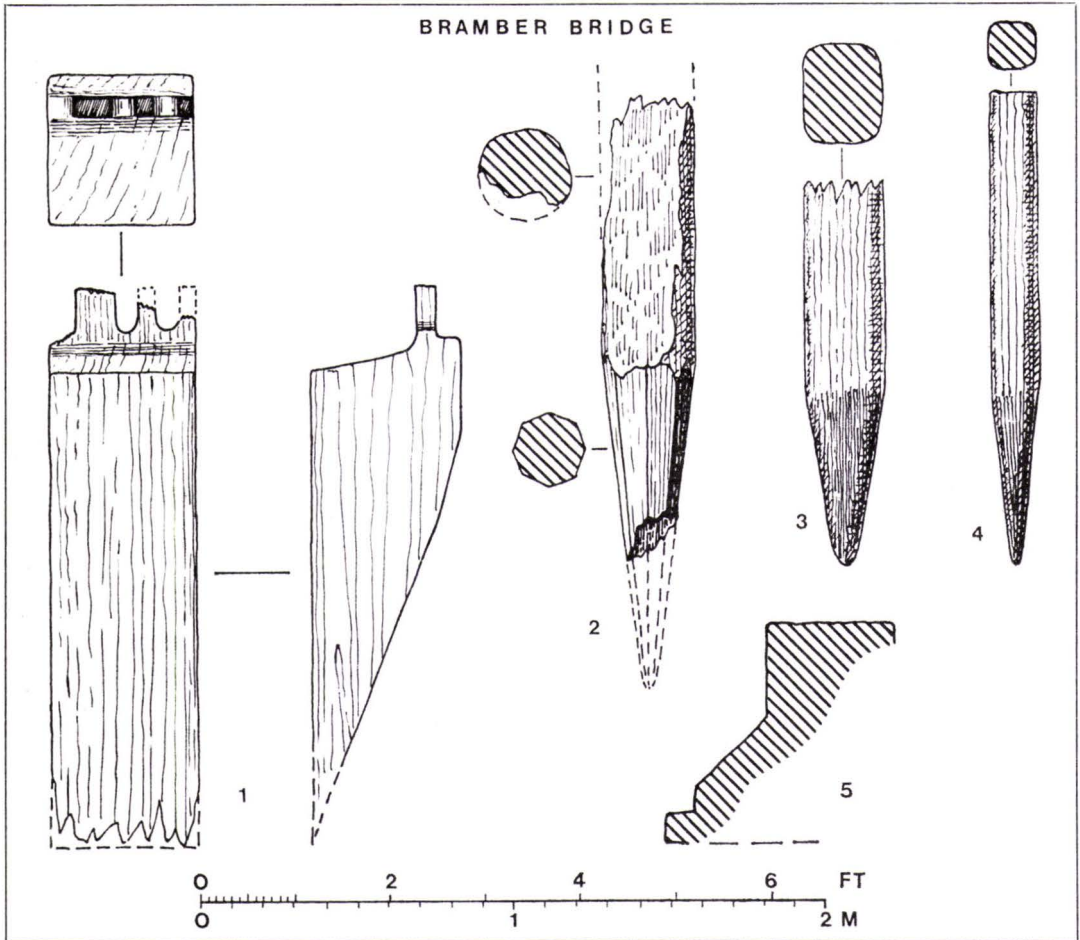


FIG. 3. 1-4: Details of wooden piles. 5: Section through Sussex marble bridge pier foundation

small pile was lying horizontally on top of another two and a further horizontal piece of pile projected from the side of the trench. The three southernmost piles of this group were not removed.

One large pile came from farther south and was quite unlike the others, being 19in. by 18½in. (482 by 470mm.) square, shaped originally at the base to a chisel-like edge, while the top had the remains of three tenons and was bevelled towards the outer face (Fig. 3, 1). It is not known which way the pile was facing when *in situ* as it was not seen by the writer. The depth below the surface is approximate, but it was said by the workmen "... to be at about the same depth as the others." This pile had a wide split in the top (not shown in the drawing) in which were wedged some fragments of Horsham stone roofing material and West Country roofing slate. A few small pieces of similar material were found in the upcast from the cobble layer, but the depth at which they were found could not be determined. Only one sherd of pottery was recovered, which came from the trench c.50ft. (15m.) north of the bridge pier, but from an unknown depth. It appears to be of late medieval date, judging by its fabric and form.

Nothing more was to be recorded by the writer from the trench, which continued south and then west, but drainlayers saw traces of what appeared to be hurdling of wattles running across the trench from north-west to south-east about 114ft. (35m.) south of the car park wall next to the main road, at a depth of 12-14ft. (3.7-4.3m.).

THE FINDS

Timber identification

Samples of wood from two different piles were kindly examined by Professor G. W. Dimbleby, Institute of Archaeology, London, and by Mr. P. W. A. Wright of Wykamol Ltd., Winchester, both identifying the timber as European beech (*Fagus sylvatica*). Dr. J. F. Fletcher of the Research Laboratory for Archaeology, Oxford, was good enough to examine sections of two round piles and the very large rectangular pile for dendrochronological purposes. All proved unsuitable as they were very fast grown, with wide and few tree-rings. The two round piles inspected were beech, whereas the large rectangular pile was oak (*Quercus*).

Radiocarbon dating

Through the generosity of Miss D. H. Ellis a part section of a pile, c. 10in. (254mm.) diameter, was sent to Harwell for dating purposes. Dr. J. F. Fletcher also saw this piece at Harwell and he stated that no growth allowance was considered to be necessary for the actual sample analysed for Carbon-14. The result was: a.d. 1090 \pm 80 years (HAR-560).¹

Sediments

Samples of the sediments from the layers below the topsoil were kindly examined at the Department of Human Environment, Institute of Archaeology, London, under the direction of Professor G. W. Dimbleby. Sample 74/8 is from the yellow "marsh clay" immediately below the topsoil (Layer 2). Sample 74/9 is from the blue-grey layer below the yellow (Layer 3). Sample 74/10 is from blue-grey material scraped from the side of a pile, which would be below 10ft. (3m.) from the surface (Layer 4).

The following is the report submitted by Dr. I. W. Cornwall, Institute of Archaeology:

All the samples were fine-sandy loams, Layer 2 (74/8) being fairly well oxidised; the two from Layer 3 (74/9) and Layer 4 (74/10) blue-grey in colour and reduced by waterlogging. All were tested for humus, but all contained almost equal, minimal, quantities:

Uncarbonised organic matter	Mgs/g (parts per thou.)
74/8 Layer 2	1.4
74/9 Layer 3	1.2
74/10 Layer 4	1.6

All were calcareous, 74/9 more than the others, giving pH-values as follows:

74/8 8.2	} All well on the alkaline side
74/9 7.7	
74/10 7.5	

One would, therefore, expect shell fragments and foraminiferal tests to be well preserved.

In view of their only small and almost equal contents of organic matter, differences in reduction by the samples were not expected to be large, but, on treatment at boiling-point of 1 gram samples of each sediment with acid permanganate (N/10 solution), the following distinct differences emerged:

	ml N/10 KMnO ₄
74/8	10.2
74/9	11.6
74/10	16.5

These were probably due to the presence of varying amounts of ferrous-iron compounds (e.g., glauconite) preserved from oxidation by a greater or less degree of waterlogging in each case. The bluer samples, as might be expected, were the more strongly reducing, that from contact with one of the piles most of all.

A mechanical analysis of sample 74/8 gave:

74/8 Sand (all but 0.7% fine, less than 0.2mm.)	40.6%
Silt (0.06-0.002mm.)	41.4%
Clay (smaller than 0.002mm.)	18%

¹ For those new to radiocarbon dating it is to be emphasised that the central date of AD. 1090 must not be taken as the exact date of the timber. There are roughly two chances in three that the latter lies between 1010 and 1170, and one chance that it lies outside those dates. The use of lower case letters for 'ad'

or 'be' indicates that the C₁₄ result has *not* been calibrated with the bristlecone pine C₁₄ curve which is generally considered to be nearer true calendar years than radiocarbon 'years' based on a half-life of 5570 years.

Small quantities of each sediment were washed in water to remove fines and adhering dirt and the cleaned residues were examined visually at a magnification of x20. All contained fine quartz sand, grains of calcium carbonate of a platy form (molluscan shell fragments, not chalk or foraminifera), white-patinated flint grains, glauconite from the Greensand, and mica. An important difference noted between 74/8 and the others was that the latter both contained plentiful charcoal, in a finely divided state, while the former had none. There were no other artifacts observed and no appreciable differences, other than the charcoal, were seen when the residues were treated with dilute acid to decalcify and remove iron-compounds. In such relatively alkaline sediments, the calcareous tests of foraminifera would be expected to survive if salt water had ever been concerned in their deposition.

Conclusions

All the samples were of fine-sandy calcareous sediments, probably freshwater floodloams, more or less reducing and containing both Wealden and Chalk mineral materials. The only notable differences were the degree of reduction and the presence in the two lower, blue, samples of plentiful charcoal grains. One might speculate from this Layers 3 and 4 were being laid down while the charcoal-using Wealden iron industry in the Adur catchment was still active and Layer 2 since its decline and abandonment at the end of the Industrial Revolution.

The accumulation of 3m. or so of sediments above the summits of the piles (standing at about O.D.) since the Middle Ages can hardly be due to any alteration of this scale in the mean sea-level during that time. It seems more likely to have been caused by the works of man (through the construction somewhere downstream of a weir, for instance), which, by ponding back the river-flow, for meadow-flooding or for a mill, caused the build-up of these fine sediments at the old bridge.

THE DATING OF THE PILES

At the time of the Norman Conquest Bramber was not a thriving community like Steyning one mile (1.6km.) to the north-west, where there was an established port in the time of King Edward the Confessor, known as St. Cuthman's Port.¹ It is possible that there was a small settlement at Bramber of which little archaeological evidence has yet come to light, but with the first building of Bramber castle less than one-quarter mile (0.4km.) to the west c.1073² by William de Braose, one of the powerful knights who accompanied the Conqueror, the population probably increased. The initial fortification was an earthen motte, but during the last quarter of the eleventh century, a flint-built gatehouse with stone dressings had been erected together with a curtain wall, as well as the church of St. Nicholas, below the castle.³ Both field flints, sea cobbles/boulders and sea-sand were used in great quantities in addition to timber and imported Caen stone, most of which, apart from the timber, would have been brought up the estuary in boats. Timber from the heavily wooded Weald could have been brought downstream. The most practical way of landing the materials would be to erect a quay and to construct a track, or where marshy, a causeway, from the quay to the foot of the natural mound on which the castle was built, rather than to unload at St. Cuthman's Port farther inland and convey the materials in carts by a longer route to the castle.

The radiocarbon date given by timber from one of the piles has a good chance of lying between A.D. 1010 and 1170 and is crucial in attempting to date the making of the quay. The C₁₄ date, when considered in conjunction with the necessity for making adequate provision to land and transport building materials over marshy ground when the castle is about to be built or strengthened after the initial stages, promotes confidence in assigning the making of the quay to the last quarter of the eleventh century.

¹ S.A.C., vol. 102 (1964), 70.

² J. H. Round (ed.), *Calendar of Documents preserved in France*, vol. 1 (1899), no. 1130.

³ K. J. Barton and E. W. Holden, "Excavations at Bramber Castle, 1966-7," *Archaeological Journal* (forthcoming).

Additional support for this time comes from a document of 1086 which states the toll to be paid to William de Braose, at his bridge, by ships ascending and descending the river to and from Steyning: “. . . unless they should make another market at William's castle.”¹ An agreement of 1103 also refers to the bridge, generally considered to be a timber bridge over the deep stream to the east, which did not permit ships to pass upstream to Steyning as they could in the time of King Edward the Confessor, and that bridge is to be put

“. . . into that condition whereby ships shall freely proceed to the harbour . . .” [it is conjectured that a section of the bridge was to be made to lift up, swing, or otherwise be made removable to enable ships to pass through, if not already so constructed, but in need of repair], but if there is a delay in amending the bridge, then “. . . the ships shall go and return peacefully according to that custom *as far as Philip's* [son of William de Braose] *castle as they might to the Portus Cuthmanni.*”²

The implication behind both these documents is that landing facilities for ships existed at Bramber.

The fragments of Horsham Stone and slate wedged in the split in the top of the large pile are of little value for dating as both materials are common locally from the twelfth century onwards, and they could have worked their way downwards by natural forces while the silt was accumulating above.

INTERPRETATION

The deposition and stratification of the various materials suggest the following sequence of events:

The piles

Wooden piles were inserted on the western side of the estuary in a north-south direction. Owing to the shortness of the piles it is probable that only 2ft. to 3ft. (0.6-0.9m.) would project above the ground. Many piles appear to have been lost or removed, but one can visualise close piling at least as far south as the very stout pile, which may be a corner member, but not necessarily so. This pile showed by the tenons on top (Fig. 3, 1) that it carried a substantial horizontal timber, but the lack of information renders the purpose of the latter obscure, except that it may have supported or tied together the other piling in some way.

The edge of an estuary is dry at low tides and the water is still only shallow at normal high tides, as may be seen today lower down the Adur near the Norfolk bridge at Shoreham. Whether boats laden with building or other materials travelling up or down stream at high tide could get close to the piles (which is doubtful), or had to remain in the deeper channel of the mainstream some distance from the shore, the provision of a landing stage or quay would be a great advantage for unloading and it is suggested that the piles formed the facing to a low quay of modest proportions. After unloading, the goods had then to be conveyed westwards over marshy terrain for some distance before reaching higher ground. It is probable that the wooden causeway traversing the main street, which was at about the same depth below the modern surface at its eastern end as the piles, was constructed at the same time to serve that purpose. The description of the causeway piles seen in 1956 generally corresponds with those close to the bridge, except that they were said to be oak, rather than beech as those found in 1974.³

¹ Round, *op. cit.*, no. 114.

² *S.A.C.*, vol. 5 (1852), 124, note 23.

³ Beech is normally considered “perishable,” but it is eminently suitable for wet situations such as “keels and planking for sides and bottoms of vessels, timber for piles, weirs, sluices, flood-gates, etc.” (see W. Stevenson, *The Trees of Commerce* (rev. ed., 1920), 41).

The cobbles

These are derived from the sea and probably were conveyed by boats from the beach at Shoreham.¹ They seem to have been deposited on the landward side of the piles up to the pile tops, so as to form a solid platform or pavement. It is also possible that a layer of cobbles was placed on the east side of the piles on the bed of the estuary so as to form a hard bottom which would be especially useful underfoot when unloading boats at low tide, but there is no proof of this. It does seem certain that the piles are earlier, but only slightly, than the cobbles, because (a) it would be virtually impossible to drive piles through a pre-existing deep layer of cobbles, and (b) the top of the cobble layer agrees roughly with the tops of the piles, with the piles retaining the cobbles. The cobbles also are earlier than the bridge pier foundation which sits on top of them (see Fig. 2).

Early silting

If, as has been surmised, the bed of the estuary where touching the piles was about 2ft. (0.6m.) below the pile tops, the higher level of the underside of the stone footings of the bridge pier (see Section, Fig. 2) shows that some silting would have taken place during the time between the construction of the quay and the building of the bridge, possibly up to 2ft. (0.6m.) in depth.

The stone bridge

The first stone bridge is built "to span, not the present tiny stream, but the strong tidal ebb and flow from the tidal compartment of the river inland."² It is probable that the Sussex marble bottom courses seen *in situ* are original, it being unlikely that during subsequent repair the lower courses below water level would be entirely replaced. The lime, sea-sand and cobble concrete of the pier core is also considered to be original. No remains of the bridge were seen other than those noted in the sewer trench, plus lumps of Sussex marble removed by the machine,³ but it is clear that the bridge lies below the southern half of the modern roadway, rather than being centrally placed as shown by Godfrey⁴ and that the modern roadway has shifted northwards. The plan of the abutments and piers as depicted in Fig. 1 is derived from William Figg's plans and dimensions,⁵ also the east-west axis of the bridge in relation to St. Mary's is from the same plan, but the latter is at a small scale and some latitude must be allowed.

HISTORICAL DISCUSSION

Early references to bridges

Sele Priory was established by William de Braose c.1080 on the east side of the river where now stands the church of Upper Beeding.⁶ The foundation charter mentions the church of St. Peter at Sele, also St. Peter "of Old Bridge" (*de Veteri Ponte*) and other churches, but the situation of "Old Bridge" is a matter of much uncertainty and it is not the object of this paper to discuss that problem. Salzman is inclined to think that Old Bridge equates with Annington, which adjoins Botolphs, three-quarters of a mile (1.2km.) downstream.⁷

¹ Or possibly from the 15ft. Raised Beach deposits which may have been exposed within a reasonable distance. This Raised Beach was seen a few years ago during road-widening near the Sussex Pad, Lancing.

² H. C. Brookfield, "The Estuary of the Adur," *S.A.C.*, vol. 90 (1951-2), 153-63, see 161.

³ Some blocks of Sussex marble have been retained at St. Mary's; also a wooden pile and a piece of another pile, preserved by the Carbowax method through the kindness of Mr. W. R. Beswick.

⁴ *S.A.C.*, vol. 86 (1947), 102-3, Fig. 1. W. H. Godfrey did not have the advantage of seeing parts of a bridge pier *in situ*.

⁵ *S.A.C.*, vol. 2 (1849), 64-5.

⁶ L. F. Salzman (ed.), *The Chartulary of the Priory of St. Peter at Sele*, (1923), Charter 1. (All later references to Charters come from the same volume and are quoted by Charter number, not page).

⁷ *Chartulary*, xviii.

The mainstream of the estuary was known in late Saxon times as the *Bremre* (or Bramber) river—not Adur, which is a late innovation. A charter of A.D. 956¹ refers to a deep stream east of the Bramber river, which implies that this eastern stream was navigable. The parish boundary suggests that this eastern stream followed the same line as the modern Adur where the highway meets the river, i.e. at Beeding Bridge.

It has already been noted that there is one bridge in 1086² and in 1103,³ but it is not until c.1230 that *two* bridges are recorded. John de Braose, fifth in descent from William, gives to Sele Priory, tithes, etc., “. . . and all my bridges of Brembre, and five saltpits, and three men with their lands at the head of the lesser bridge towards the east, and five messuages close to the bridge on the west of the greater bridge of Bramber.”⁴ This appears to be the first definite reference to the existence of the greater bridge of Bramber.

There is a charter dating between 1180 and 1204⁵ being confirmation of Sir William de Braose's earlier gift to Sele, “. . . all his bridge of Brembre and five saltpits and three men with their lands at the head of the same bridge on the east and timber for repairing the bridge.” Note that “bridge” is singular, whereas the c.1230 charter regarding the same five saltpits and three men has two bridges.

It is a matter of some conjecture how long before 1230 the stone bridge was built, but it could be early, for the timber bridge at Saumur (to which Sele Priory was subject) was rebuilt in stone in 1162, while London Bridge, begun in wood in 1163, changed to stone in 1179.⁶ A stone bridge in the latter part of the 12th century therefore, would be feasible. There is a further hint in an undated document of Henry II (1154-89)⁷ concerning lands of Ralph, brother of Savaric and Geldwin. An accompanying document concerning some of the personalities mentioned in the other is dated 1190, so it is possible that the former was written in the 1180's. In this document occurs the phrase, “between the new bridge and La Cneppe.” The ruins of Knepp castle are several miles upstream from Bramber and there is no certainty that the “new bridge” refers to Bramber, but the possibility is there, and a date between 1180 and 1190 would not be an unreasonable one for the erection of Bramber stone bridge.⁸

The bridge repairs of 1477-9

At that time the marshes had not been fully reclaimed and estuarine water was still ebbing and flowing under the stone bridge, even though gradual deposition of silt would be raising the level of the bed making the passage of boats through the arches difficult for other than small craft. This rise in the level of the bed of the estuary was caused not only by gradual inning of the marshes, but by complex physical factors such as a possible rise in sea level during the later Middle Ages and the driving shorewards of an offshore shingle bar, among other reasons.⁹

¹ *S.A.C.*, vol. 88 (1949), 80-1.

² Round, *op. cit.*, no. 114.

³ *S.A.C.*, vol. 5 (1852), 124, note 23.

⁴ Charter 5.

⁵ Charter 26.

⁶ I am grateful to Mr. D. F. Renn for these references.

⁷ *S.A.C.*, vol. 77 (1936), 257-8.

⁸ Especially as at that time the de Braose influence was approaching its greatest and by 1206 had reached the height of its power; William III de Braose holding as fiefs or in custody 352 knights fees and some 16

castles in England and Wales (see S. Painter, *The Reign of King John* (1966)). (I am grateful to Dr. C. R. Sladden for this reference). In 1208 Bramber castle had been confiscated by King John and the de Braose's were in disfavour for some years. Such a state would not auger well for bridge building.

⁹ Brookfield *op. cit.*; A. R. H. Baker, “Some Evidence of a Reduction in the acreage of Cultivated Lands in Sussex during the early Fourteenth Century,” *S.A.C.*, vol. 104 (1966), 1-5; P. F. Brandon, “Demesne Arable Farming in Coastal Sussex during the later Middle Ages,” *The Agricultural History Review*, vol. 19 (1971), 113-134, see 117.

In 1468, John, Bishop of Chichester, granted an Indulgence

“to all persons in his Diocese who shall contribute to the repair of the bridge at Bramber and the causeway of the common road leading from Bramber towards the eastern parts of England, and from the east to the west, which are now in so bad a condition that they cannot easily be repaired without the help of the alms of the faithful.”¹

In 1473, Richard Aleyne, Prior of Sele, was indicted for many irregularities including:

“That the Chapel of St. Mary, on a certain great bridge of stone in the highway between Bramber and Sele (Beeding), is, with the bridge, falling to ruin through his neglect, and cannot be sufficiently repaired for forty pounds.”²

Richard Aleyne was deposed in 1474 or soon afterwards, the Priory having been surrendered to Magdalen College, Oxford, and the following contracts were entered into.

Contracts for the repairs

The wording of the two contracts is given in full in L. F. Salzman's *Building in England*.³

1477. “William Waynefleet, Bishop of Winchester, contracts with a mason to hew and work 100 loads of stone, to be used in the piers of the bridge of which he shall pull down all that is defective. For this he shall have £19; if more than the hundred loads is used he shall have 3s. 8d. a load for the extra, if less the Bishop shall have 3s. 8d. for each load unused. The Bishop shall have the stone carried and shall provide scaffolding, &c.; and shall also pay 10d. for every load, of 15 feet, of the old stone re-used.”

1478-9. “The same mason acknowledges receipt of payment for work already done on the bridge, and undertakes to hew and work as much stone as shall be needed to complete it, and to carry out the necessary repairs, for 20 marks and a gown.”

The 1477 document called for the stone to be obtained from a “quarr in the Ile of Wight callid Gurnard quarr.” For the completion of the work executed in 1478-9 the mason was required to obtain stone not only from the Isle of Wight, but also “at a quarr in the Counte of Sussex.” The stone remaining in the bridge pier was all Sussex marble,⁴ the exact source of which can only be surmised, but ancient quarries are known in north-west Sussex, especially near Petworth and Kirdford.⁵ It occurs sporadically within the Weald Clay and is occasionally available when exposed in pits, etc. Small quantities have been seen recently in clay pits at Small Dole, two miles north-east of Bramber.⁶

A causeway between the two bridges

Reference has already been made to the timbered causeway west of the stone bridge, which has been interpreted as belonging to the pre-stone bridge, castle-building, era. There remains a tract of the estuary between the stone bridge and the lesser bridge to the east about which some

¹ *S.A.C.*, vol. 22 (1870), 233.

² *ibid.*, 233; also *S.A.C.*, vol. 2 (1849), 70-1.

³ Salzman, 1952, loc. cit. A precis of each is given in this volume and are reproduced here by permission of the Oxford University Press, Oxford; Salzman's full text (which is preferred) differs in small details from that given in *S.A.C.*, vol. 22 (1870), 232-3.

⁴ Containing the larger sized fossil freshwater snail shells known as *Paludina*.

⁵ *S.N.Q.*, vol. 5 (1934-5), 26-7; *S.A.C.*, vol. 99 (1961), 102-6. Pieces of the stone have been retained at St. Mary's, Bramber.

⁶ Information from Mr. R. J. Matthews, Site Engineer.

information may be gathered from charters of Sele Priory. Charters 158 (1254-70), 176 (c.1285), and 73 (1312) all mention a highway or causeway between the two bridges with plots of land adjoining the south side.¹ The earliest also refers to reclamation of land "for building purposes," the second to "reclamation" and the third to a "tenement." Charter 99 (1254-70) refers to a messuage on the causeway between a house on one side and a saltern on the other. Judging by the presence of the salt-making mounds south of the modern highway, until their removal for agricultural purposes in 1972, it is possible that the tenements were occupied by persons partly engaged in salt production, which was a summer occupation.

Reclamation of the marshes and innings were proceeding gradually, not only at Bramber, but also to the south. Charter 155 (c.1260) mentions pasturage of 11 acres in the marsh of Bramber and it permits earth to be taken from the 11 acres for the repair and protection of the sea-wall; while Charter 154 (c.1260) shows that similar digging, ditching and enclosure of pasture in the marsh was in progress at Annington (with Botolphs).

Protection of pasture from flooding, either by seawater or the river in spate, has always been a problem in the Adur valley, especially during the fourteenth century when the relative level of the sea to the land appeared to be changing to the disadvantage of the latter. In 1359, for instance, there was a commission to repair sea-walls at La Pende (opposite Shoreham), between Bramber, Lancing and Shoreham, which had been damaged by inundation and, it is alleged, by the ravages of the French and Spanish.² Flooding was always a problem and in 1530 the rectory of Bramber was united to the vicarage of Botolphs "in consequence of its impoverishment from frequent inundations."³

Crossing of the mainstream

There is doubt as to how the mainstream was crossed before the building of the great stone bridge of Bramber towards the end of the twelfth century or at least by 1230. With the establishing of Sele Priory there would need to be frequent contact between people on the two sides of the estuary, but there is as yet no clue how the mainstream was crossed at that time. A ferry could be utilised, of course, and was used for the whole journey much later, when both bridges were in existence, as the following passage bears witness. In 1282 the Priory of Sele was granted: ". . . the liberty of fishing at Bramber bridge and when the bridge was impassable, of a boat to ferry men and cattle."⁴

One may postulate in the latter part of the eleventh century the presence of a raised causeway running westwards from the eastern bridge across the estuary, which area would be flooded at every high tide, but a causeway would not be able to cross the mainstream which, by implication, was wider than the "lesser" stream to the east. That would need a strong bridge, but about which there does not seem to be any written or archaeological record. It may be that a ferry was used for crossing the mainstream, but it seems to be an unsatisfactory time-wasting method, except in time of flood.

¹ Shown by Godfrey, *S.A.C.*, vol. 86 (1947), 103, Fig. 1.

² *S.N.Q.*, vol. 17 (1968-71), 46-9.

³ E. Cartwright, *The Parochial Topography of the Rape of Bramber in the Western Division of the County of Sussex*, vol. 2 (1830), 211.

⁴ *S.A.C.*, vol. 2 (1849), 70.

SUMMARY

The evidence from the 1974 sewer trench in St. Mary's car park suggests the provision of an unloading quay with beech piles, backed by cobbles, at the time of the building of Bramber castle, a few years after 1066. The level of the quay was about 10ft. (3m.) below the present surface of the alluvium. At the same time, a wooden piled causeway led westwards from the quay to the foot of the castle. Not the slightest evidence was found to support the 19th century theory that a Roman bridge once crossed at this point.¹

In early medieval times Bramber and Beeding faced each other across a narrow part of the tidal estuary, with two principal streams visible at low tide, the main one close to the Bramber side and the lesser, yet deep, navigable, stream to the east. The latter possessed a bridge, at least by 1086, if not before 1066. In 1103 this bridge was unable to pass ships through it to ascend to the Port of St. Cuthman (Steyning) and it had to be put in order. It is not known how the crossing over the mainstream was made at that time, a ferry being a possibility.

Natural forces at the harbour mouth at Shoreham, coupled with some inking of the estuary into marsh for converting into pasture, led to a modest rise in the level of the land by deposition of silt (alluvium) during frequent flood conditions, so that by the end of the twelfth century the quay is buried. A splendid stone bridge was erected over the mainstream, possibly during the 1180s or 1190s, but certainly by 1230, and a causeway or highway made connecting the two bridges.

Salt manufacture had been known in the estuary since late Saxon times and by the thirteenth century, tenements, perhaps used by salt-workers, are reclaimed from the marsh. These were situated on the south side of the highway between the two bridges. By the early fifteenth century at the latest, the rising sea level and other factors cause the salt industry to cease. Meanwhile, the inevitable deposition of silt continues with every flood. The stone bridge receives major repairs in 1477-9. At some time later than 1479 the stone bridge, too, is overwhelmed by silt, the chapel doubtless in ruins and steadily being robbed for its stone, so that eventually no traces of the bridge or chapel are left above ground.

It is possible that by the sixteenth century the eastern course of the river had been embanked, leaving only a minor tributary where the mainstream earlier flowed. Thus, estuarine conditions are eventually terminated and the marshes become water meadows, subject to frequent flooding, the reclamation by gradual stages having begun several centuries before. The relics of the bridge remain undisturbed until 1839 when chance roadworks discover them.

What did the stone bridge look like in its prime? It must have been a magnificent structure, over 170ft. (52m.) long, with four arches. The huge piers had splayed cutwaters on both sides and there was a large chapel above the centre pier on the south side. The roadway over the bridge was 17ft. (5.2m.) wide and there were triangular recesses in which pedestrians took refuge when traffic over the bridge was heavy. One might compare it with Stopham bridge near Pulborough, but only in a generalised way, for Bramber bridge was much longer, wider, possessing a chapel, and was, therefore, a much more imposing structure. If one could go back in time 600 years, the view westwards from Beeding would have been splendid, with the great

¹ Similarly, there is no historical or archaeological evidence to say that the motte at Bramber castle was "the home of Saxon kings," as frequently stated by

nineteenth century writers. The motte dates from c.1073.

bridge of Bramber in the foreground, a few cottages and salt-workers' hovels nearby; an earlier version of the fifteenth century house known as St. Mary's in the middle distance, a causeway flanked by humble cottages culminating in the gaunt curtain wall of Bramber castle with its massive three-storied gatehouse-keep towering in the background and the church of St. Nicholas nestling below, all reflecting at high tide in the waters of the estuary.

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