The St. Mary's, Climping and Chichester Cathedral medieval chests: a dendrochronological and comparative study

Christopher G. Pickvance

This article provides a detailed description of two medieval chests in Chichester Cathedral Treasury of a rare type: pin-hinged, clamped chests. Both chests have long attracted admiration and have been given various dates, from 1200 to 1300–1350. Their construction and decoration is compared with other chests of the same type in Sussex and Kent. This brings out the contrast between the chests in the two counties, the diversity of the Sussex chests and the relative similarity of the Kent chests. The Sussex group are either plain or have prominent chip-carved roundels, whereas those in Kent have incised gothic arcading and very small roundels. Dendrochronological analysis dates the timber of the Chichester Cathedral chest earlier (1256–88) than the Climping chest (early 14th century), contrary to what has often been thought. It is suggested that these dates make it unlikely that the two chests are 'Crusader chests' and that the depth of the Chichester Cathedral chest makes it likely to have been for vestments.

INTRODUCTION

Sussex is well known to students of medieval chests for its collection of 'clamped' chests, in which the boards forming the front, back and sides are pegged into long mortises in the wide stiles (uprights). These are an early example of joinery and are much rarer than 'boarded' chests in which planks are held together with iron straps and nails or pegs (Chinnery 1979, 69–74, 104–24). A third type, 'dug-out' chests, is also rare. In the 1200–1500 period, all three types, pure and mixed, can be found, and cost and preferences as well as technology played a part in the choice.

Johnston's (1907a) survey of early chests referred to ten extant clamped chests with pin hinges (see below) in Sussex: at Chichester Cathedral and the churches at Bosham, Buxted, Climping, Ditchling, Felpham, Horsham, Midhurst, Rogate and South Bersted, and two at Arundel and Rustington which had disappeared in the 19th century. Since 1907, the Ditchling chest has disappeared, a different Horsham chest to the one Johnston describes has been identified, as have additional chests at Stedham and Coombes.[1] The present total is therefore eleven. This represents about one fifth of the national collection, of which seven are in Kent and smaller numbers in Westminster Abbey, Surrey, Essex and Suffolk and elsewhere, mostly in southern England. The whole group is being recorded by the author.

It cannot be assumed that chests have always been in their present location. Some may have been commissioned by their present church. Others may have been acquired through gifts, bequests or at the time of the Dissolution, or be privately owned chests left in the church for safe-keeping. There are general statements about the need for churches to have chests. Edicts by Henry II in 1166 and Pope Innocent III in 1199 specified that chests should be used to collect money for the Crusades, and in 1308 Pope Clement specified that they should be used to collect alms (Lewer and Wall 1913, 40–8; Howard and Crossley 1927, 342; Eames 1977, 108–37; Sherlock 2008, 3–5). Chests were also used to store altar accoutrements (e.g. frontals, chalices, patens, candlesticks) and as the number of altars (e.g. in chantries) expanded in the 13th and 14th centuries, their numbers increased (Johnston 1907a, 300; Lewer and Wall 1913, 48; Draper 2006, 40, 50–1, 198–200). The Exeter synod of 1287 created the role of churchwarden and required that churches

provide chests for books and vestments (*cistam ad libros et vestimenta*) (Binski 2004, 176) which is likely to have reflected an emerging 'best practice'. Chests were also used for other purposes, e.g. to store legal documents (deeds, leases), jewellery and relics, and their uses changed over time as needs evolved and alternatives became available. Where records refer to individual chests, as in inventories or churchwardens' accounts, they are more concerned with the contents of chests or repairs than with the chest's construction or decoration. Hence considerable caution is needed in inferring their uses.

PREVIOUS WRITING ON THE TWO CHESTS

The present article concerns two chests in the Treasury at Chichester Cathedral, one belonging to the cathedral (the 'Chichester chest') and one belonging to St Mary's, Climping, which has been on loan to the cathedral since 2000 (Figs 1 and 2). Both Chichester Cathedral and St Mary's, Climping, have Norman origins. In the 13th century Chichester Cathedral had chapels along the nave aisles and in the 14th century a Lady chapel was added with chantries (Draper 2006, 214–15) and St Mary's, Climping, was mainly built in the early 13th century (Nairn and Pevsner 1965, 189). There are no certain references to either chest before 1836.

Both chests have received considerable attention from previous writers and have been regarded as particularly fine examples of early medieval chests. The Climping chest was one of only three included by Shaw (1836) in his *Specimens of Ancient Furniture*, with an 1833 drawing (Fig. 3), and was also included in Roe's *Ancient Coffers and Cupboard*s (1902), the first book-length study of chests. In the same work Roe mentions in passing 'an interesting Early English coffer' in Chichester Cathedral (1902, 25). Johnston described both chests in detail in his survey and considered the Climping chest to be 'the best-known and the finest chest of the Surrey-Sussex group' (1907a, 285–6). He published his own detailed drawings of the Chichester chest and supervised its repair (1907a, 282–5). He evidently had an affection for this chest as he returned in October 1928 to make a further annotated drawing, a copy of which is on display in the Treasury. In 1930 the Chichester chest was included in an exhibition of English Medieval Art at the Victoria and Albert Museum (Anon. 1931).

In 1977, the Climping chest appeared in Eames's (1977) major survey of medieval furniture and it was selected for the *Age of Chivalry* Royal Academy exhibition (Tracy 1987). The Climping chest has

Fig. 1. Chichester chest.

Fig. 2. Climping chest.

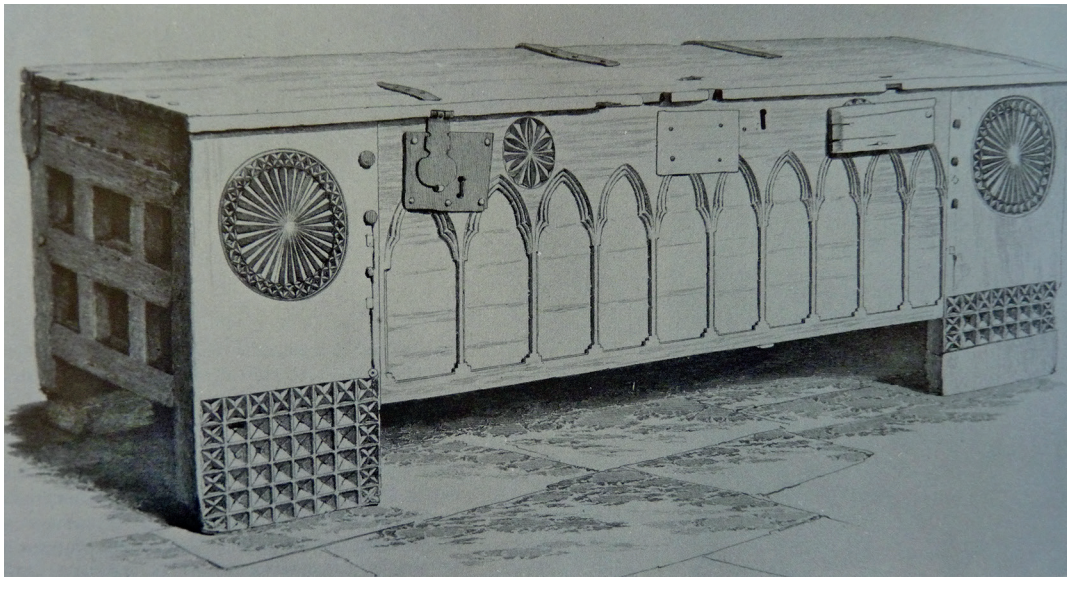

Fig. 3. Climping chest, 1833 drawing (Shaw 1836).

thus been regarded as an exceptional chest and the Chichester chest not far behind it. The attention they have received is because the Climping chest combines a variety of types of carving and appears to be of extreme age because its timbers are abraded and devoid of colour, while the polychrome roundels and good condition of the façade of the Chichester chest make it unusual. Also the Sussex and Surrey clamped chests appear to have been better known to writers than those in Kent, East Anglia and elsewhere.

THE CHESTS

CONSTRUCTION

Dimensions The two chests are of contrasting shapes. At 197cm wide and 50cm deep (from front to back), the Climping chest is long and shallow. Its original height has been estimated as 70cm. The Chichester Cathedral chest is much shorter (129cm), much deeper (68cm) and somewhat higher (82cm).

Structure In both chests, the façade and back are single boards. The lid of the Climping chest is a single board tapered in section (from 2.7cm at the front to 1.5cm at the back), a product of cleaving a trunk along its radii (see Fig. 4). The original (rear) part of the lid of the Chichester chest is also tapered.[2] The front stiles are similar in width (around 33cm for Climping and 30cm for Chichester) and taper inwards from 5 to 4.5cm and 5.2 to 3.8cm. The original wooden pegs on both chests are covered with iron nails or studs. The sides, which are generally thinner, are fixed into mortises in the stiles with wooden pegs and large nails, and slope inwards making room for the lid battens within the width of the chest (Fig. 5). The sides of the Climping chest have an 'applied grid' of three rails (horizontal battens) pegged and nailed to the stiles and to the sides, with muntins (short vertical battens) above and below the centre rail fixed with halving joints (Fig. 6). This strengthens the corner joints. The Chichester chest has plain sides.

The front, back and sides of the Chichester chest are nearly twice as thick at the bottom as at the top (4cm against 2cm) which provides more room for the grooves which held the base boards. On the Climping chest the walls are of constant thickness (3cm); the lower edges at the front and back are broken off but they probably had grooves too. The original base boards in both chests are now missing. In other chests in Sussex and Kent

Fig. 4. Climping chest, showing tapered lid and pin hinge with chamfered batten and protective plate.

Fig. 5. Chichester chest, showing inward sloping side, chamfered batten and protective plate.

Fig. 6. Climping chest, showing applied grid of 'complete' type.

Fig. 7. Bosham chest showing wooden bolt cover, canted lip and base boards.

of the Chichester shape the base generally consists of a series of V-edged boards placed front to back. Chests which are less deep, like the Climping chest, have the same type of base or had one or two long boards placed from side to side. In the Chichester chest there is a 'lip' of canted profile above the groove, which is produced by paring the internal surface of the wall. In the Climping chest the left side has a similar canted lip and the right side has a quarter-round lip. Fig. 7 shows the canted lip on the Bosham chest.

Hinges Both chests have pin (or pivot) hinges in which battens fixed underneath each side of the lid form the moving parts and allow the lid to rotate on short iron rods fixed across notches in the top of the rear stiles (see Fig. 4). The front end of each batten has a tenon which fits into a notch in the top of the front stile, locating the lid and helping prevent twisting. Figs 4 and 5 show the contrasting chamfering of the lid battens and the differing protective iron plates which are nailed over the ends of the rods, kite-shaped at Chichester and covering the whole of the outside top of the stile at Climping.

Till Both chests have a 'till' with flat bottom and pin-hinged lid for small items that would otherwise be lost in the chest. The lid of the Chichester till has a straight chamfered edge with three bosses. The Climping till lid has a straight plain edge and a money slot.[3]

Locks It is generally thought that 'church chests' had three locks in line with the 1199 and 1308 edicts to this effect. There is no doubt that many medieval chests did and still do have three locks. But it does not follow that where chests have three locks today they originally did so. Locks are often replaced and it requires detective work to establish the order in which they were added. In the author's view, the Climping chest probably originally had three locks.[4] Its façade has three wooden inserts where locks were once fixed. The lid has stains from three original iron straps which would have passed through the angled slots near the front edge of the lid (two of which are now used for leather straps), terminating in solid lock hasps.

In contrast, the Chichester chest today has a single, later lock plate and shows no evidence of ever having had three locks. The clue to the likely original lock type is the line of holes on the façade on either side of the lock (see Fig. 1). Such holes have been widely observed on pin-hinged, clamped chests in Sussex, Kent and Surrey and are usually holes for the bolts (with large heads, iron discs or washers) used to hold on a wooden cover (now missing here, but see Fig. 7) to the rear of the façade which concealed a long internal sliding bolt with two or four prongs.[5] When the lid was closed, four rigid iron staples fixed to the lid entered slots in the wooden cover and when the central key was turned the prongs on the bolt engaged with them. Fig. 8 shows three surviving, somewhat misaligned, staples and two later hasps. Fig. 9 shows a front radiograph of the bolt at Horsham, its lozenge-shaped escutcheon and the decorative iron disc to the left. The two middle bolt prongs can be seen, set horizontally; at the front the bolt is slightly cranked and at the rear it is bent in a U shape. The bolt moves to the left to lock the lid. (The original lid and staples are missing.)

Chains Besides its locks, the Climping chest had an additional form of security. On the back of the

Fig. 8. Stedham chest showing staples for sliding bolt lock.

Fig. 9. Horsham chest, radiograph of sliding bolt, viewed from the front.

chest, in line with the stains from the three iron straps on the lid, are three full-height iron straps with rings half way up holding three chain links which are attached to (broken) short iron strap ends (Fig. 10). Johnston (1907a, 288–9) considered that their purpose was to attach the chest to the wall. However, the author agrees with Roe (1902, 16) and Cox and Harvey (1908, 296) that the chains were attached to the iron straps on the lid to deter attempts to lever the lid off from the rear.

Fig. 10. Climping chest, security chains.

DECORATION

The façade of the Chichester chest has a rectangular triple frame extending across its whole width, with three 20cm star roundels with 16 rays and double rings (Fig. 11). The moulded frame is produced with a scratchstock, a shaped blade held in a stock (Chinnery 1979, 192). The front feet are carved with lunettes with bosses and pilaster, and nailhead borders, a spandrel survives on the left and the rear feet have an openwork lunette with boss. The original effect would have been emphasized by the polychrome, of which clear evidence survives. The alternate rays of each star roundel were probably red ochre and yellow ochre and their points contrast with a darker colour (possibly blue). The outer ring surrounding the roundels is yellow ochre and the inner ring is red ochre. Iron nails or studs (which may have been tinned, making them shine) were fixed in the centre of each roundel; only one survives. Alternating stripes of red ochre and yellow ochre are still visible on the spandrel.[6] The feet show no sign of colour today but it is likely that their carved decoration was picked out in colour. The plain parts of the façade show open 'worm tracks', which can result when furniture beetles work under a painted (or covered) surface which

Fig. 11. Chichester chest, right hand roundel showing contrasting colours.

is then removed. It is thus possible that the whole façade was originally painted. (The façade is in good condition so the open worm tracks are not the result of abrasion.) The overall effect is likely to have been very impressive and would have fitted in with the colourful décor of the Cathedral, assuming the chest was made for it, for example there is evidence of roundel decoration in the Lady Chapel (Salzman 1935, 115–16).

The Climping chest has an elaborately carved façade. There are two large (22cm) star roundels, with single nailhead and single dogtooth borders, on the stiles (Fig. 12). Blind trefoil arcading on neat low-relief columns extends between the stiles, and above this are two small (10cm) elaborated hexafoil and whorl roundels. The feet originally had honeycomb reserves with dog-tooth borders (see Fig. 3). The surface of the façade is weathered and there is no evidence of paint. The later 12th century tower at St Mary's, Climping, has a 'richly ornamented west doorway [with] a trefoiled head under a semicircular arch with deeply cut chevron and dogtooth ornament, flanked by columns formed of chevrons' (Hudson 1997, 145). Above it is a window with a dog-tooth frame.

DATING THE CHESTS

The dating of the two chests has been discussed by earlier writers. For Roe, 'there are probably no older coffers bearing any pretence to decorative carving remaining in the kingdom other than those in the churches of Graveney, Kent, Climping, Sussex and Stoke d'Abernon, Surrey' (1902, 20). Roe described pin hinges as 'absolutely peculiar to this period [the 13th century]' (1902, 19) and Johnston agreed

Fig. 12. Climping chest, left hand roundel.

(1907a, 249, 275–6). Roe suggested that all three chests dated from the mid-13th century and that 'the [Climping] coffer must have been made for the church after its completion in the first half of the thirteenth century' (1902, 20). Johnston dated the Chichester Cathedral chest to *c.* 1200 and the Climping chest to 1230 because it had gothic arcading in addition to roundels (1907a, 285–6).

Eames, on the other hand, opts for later dates for both chests. She suggests that the Climping chest is 'so fine that an accurate date on stylistic grounds seems justified' and proposes 1282–1300, based on stylistic parallels with the blank arcading in the ruined chapter house at Thornton Abbey and on St Edward's Chair at Westminster Abbey (Eames 1977, 144). In contrast, Eames notes that 'simpler cruder chests, such as the example in Chichester Cathedral, have roundels alone' and dates this chest to 1300–1350, reflecting her view that work of cruder quality is likely to show stylistic lags (1977, 139, 144–5). Tracy differs, placing the Climping chest well after the Chichester, writing that it 'stands out from others in its class (e.g. Chichester Cathedral, Midhurst and Stoke d'Abernon) on account of

the quality and ambition of its decoration, and its comparatively late date' and that 'most of the comparable hutch chests are of the early thirteenth century whereas this example cannot be earlier than c.1280' (1987, 233).

This disagreement among writers on the dates of the two chests reflects different ideas about when roundels and blind gothic arcading were in use and the significance of differences in carving quality. Writers on medieval furniture have in general argued that styles of carving can lag considerably behind architectural styles, e.g. by 50–100 years (Roe 1902, 36–40, Schmitz 1956: 22–25, Charles and Veuillet 2012, **1**, 91–2) This view has been supported by the dendro-dating of medieval chests in recent years (Bridge and Miles 2011). For example, the Graveney, Kent chest (with incised gothic arcading), dated by Johnston to 1200–20, has been dendro-dated to 1258–90 (Pickvance 2018).

Until now dendrochronology and dendro-provenancing have not been applied to any Sussex chest. These techniques aim to identify when and where timber was growing by matching the growth patterns of samples of timber with chronologies from other sites or with regional master chronologies. The results are probabilistic and their quality depends on the number of samples (as the same chest may contain timber felled at different dates), the length of the ring sequences, whether sapwood is present, the geographical variability of growing conditions and the number, quality and geographical coverage of available chronologies.

The timber of the two chests was analysed by Martin Bridge and Dan Miles in November 2017 and they conclude:

Climping chest 'Samples from the front and rear boards matched each other and were combined into a 153-year long sequence which dated to the period 1133–1285. Although it was thought the heartwood-sapwood boundary was present on the rear board, this was several decades earlier than the last measured ring on the front board, which had no indication of sapwood ... It is most likely that the trees used were felled **after 1294,** and experience suggests little heartwood is likely to have been lost, suggesting an early fourteenth-century date for the chest.' (Bridge and Miles 2017, 1).

Chichester chest 'A core from the rear left stile retained a clear heartwood-sapwood boundary, and was from a tree most likely felled in the period 1256–88, giving a date range for the manufacture of the chest' (Bridge and Miles 2017, 1). Using a different method of calculation, OxCal, gave a narrower felling date range of *1255–77* (Martin Bridge, pers. comm., Sep. 2018).[7] The narrower felling date range for the Chichester chest is because the heartwood-sapwood boundary was found.[8]

The dendro dates are thus about a century later than those proposed by Roe and Johnston and demonstrate again the limits of stylistic dating in the case of furniture where continuing preference for earlier motifs is common.

The dendro report does not reach certain conclusions regarding the source of the timber in the chests. The Chichester timber's best matches were with sites slightly to the north in Oxfordshire and Berkshire and the Climping timber matches site chronologies in Hampshire best.' (Bridge and Miles 2017, 1). The authors conclude that 'both chests appear to have used timber from central southern England' and that 'the lack of matches in Sussex reflects the lack of data from this area in the relevant period' (Bridge and Miles 2017, 6).[9]

COMPARISON WITH KENT AND OTHER SUSSEX CHESTS

This section examines how similar or different the two chests are compared with the other Sussex pin-hinged clamped chests and with those in Kent, the adjacent county, which are dendro-dated between 1237 and 1334 (Pickvance 2018).

CONSTRUCTION

The eleven Sussex and seven Kent pin-hinged, clamped chests all have broad tapered stiles (usually of 30–40cm). Almost all the Sussex chests have lids, back, front and sides made of single boards, whereas in Kent they are usually made of two boards. This may reflect differences in growing conditions. Almost all the Sussex chests and all the Kent chests have inward-sloping sides.

Tables 1 and 2 show that there are two broad groups of chests in terms of depth: deep chests of 65cm or more and shallow chests of less. Four Sussex chests are deep and seven shallow. The shallow Climping chest is more typical of the Sussex group whereas the deeper Chichester chest is the less common kind in Sussex. In Kent, however, there are five deep chests and two shallow chests. This contrast may be due to differences in manufacture

Table 1. Dimensions (in cm) and decoration of the Sussex pin-hinged, clamped chests.

Location and dendro felling date ranges	**Width at lid** * later lid	**Depth** Deep (65+) Shallow (< 65)	**Original height** * with adjustment made	**Façade**	**Feet**
Climping early 14th century	197	50 S	70* (+20)	Two 22cm roundels, grounded gothic arcading with two 10cm roundels	Honeycomb reserve with nailhead border
South Bersted	183	62 S	70* (+7)	Two 23cm roundels	Missing
Horsham undateable	180*	75 D	98	Bold frame Plain	Gothic arch with bosses and pilaster, small star roundel. Pilaster rear feet.
Midhurst	177	45 S	57* (+3)	Four 15cm roundels	Pilaster
Bosham undateable	171	57 S	74	Plain	Pilaster
Stedham	155	72 D	83*(+11)	Three 27cm roundels	Uncertain
Buxted (ark)	144	87 D	114	Two 12cm roundels, two 9cm roundels Rosettes Gothic arcading	Gothic arch
Chichester 1256–88 (OxCal *1255–77*)	129	68 D	82* (+4)	Scratchstock frame Three 20cm roundels Spandrels	Lunette with bosses and pilaster (front) Openwork lunette with boss (back)
Felpham	128*	52 S	67* (+14)	Three 17cm roundels	Uncertain
Rogate	127*	61 S	66	Plain	Openwork quadrant and column
Coombes	112	39 S	49	Plain	Plain

Table 2. Dimensions (in cm) and decoration of the Kent pin-hinged, clamped chests.

Location and dendro felling date ranges	**Width at lid** *later lid	**Depth** Deep (65+) Shallow (<65)	**Original height** *estimate, with adjustment made	**Facade**	**Feet**
Yalding 1304–21	226	51 S	71*(+20)	Plain	Missing
Wormshill	157	75 D	93	Incised frame Incised arcading with medium roundels	Design continues
Boughton	157*	74 D	97* (+15)	Incised arcading with small roundels	Plain
St John's A 1237–69 (OxCal *1242–58*)	150	73 D	85	Incised frame Incised arcading with small roundels	Design continues
Norton 1302–34 (OxCal *1302–27*)	150	51 S	70* (+8)	Incised frame Incised arcading with medium roundels	Design continues
St John's B 1250–82 (OxCal *1253–71*)	135	68 D	85	Incised frame Grounded arcading No roundels	Design continues
Graveney 1258–90 (OxCal *1257–80*)	135	71 D	89	Incised frame Incised arcading	Plain

or in survival rates. It is most likely that chests of different shapes had different uses. The deep type of chest was probably used for vestments (Pickvance 2018). Copes and chasubles could be voluminous and required the depth that these chests provided. As mentioned earlier, by 1287 chests were being used for vestments and books. Carving and colour would have drawn attention to their precious contents. The deep Buxted ark, however, is sufficiently different to have had a different purpose. The lower, shallow chests would have been more appropriate for altar accoutrements and books but they could have had many other uses.

The Chichester chest is one of only three Sussex chests to have plain sides, whereas these are found on all of the Kent chests. Eight Sussex chests have applied grids which make for a more rigid structure. These are of two designs. As Johnston (1907a, 288) noted, the grid on the Climping chest is the only one in Sussex to have an upper rail in addition to the lid batten, i.e. a 'complete' applied grid. In the other seven chests the grid lacks an upper rail and is thus 'incomplete'. Complete grids (but not incomplete grids) are found on some Germanic chests from *c.* 1330 (including on those imported to England) (Stülpnagel 2000, 148–91; Pickvance 2014, 2017b). The question therefore arises why the Climping chest is the only Sussex chest to have this feature. Climping church is the only one among the eleven which was appropriated by an alien monastery (Almenêches, in France). Climping is close to Sompting, where St Mary's church is known for its rare Anglo-Saxon Rhenish helm. The relevance of such possible connections remains to be studied. The complete applied grid design may have originated in both England and the Continent, or have been transmitted from one to the other.

The Chichester chest is like most Sussex chests in having canted lips above the groove for the base boards, whereas in Kent only quarter-round lips are found. Canted lips are known on fifteen Luneberg Heath chests dendro-dated from 1271 to 1339 or given stylistic dates from the early 13th to the late 14th centuries, whereas quarter-round lips are not reported there (Stülpnagel 2000, 81–4, 323–32). This period coincides with the dates of the Sussex chests and suggests this detail deserves further research. All but one of the Kent chests have an external canted edge near the lower edge of the façade, whereas none of the Sussex chests does so.

The Climping and Chichester chests have single tills. Neither chest has the more elaborate till with a lower, tapered, concealed section found on four Sussex chests (Bosham, Felpham, Midhurst, and Stedham), all of which also have scalloped and stop-chamfered till lids. The bottom of the upper section is pin-hinged and can be opened when a wooden peg concealed under a muntin in the applied grid is withdrawn. Such tills, which are probably the sign of a higher quality chest, are unknown in Kent.

The Climping chest is the only Sussex chest likely to have originally had three locks with solid hasps. Their design is unknown but some 13th century chests at Westminster Abbey have simple rectangular lock plates with hasp guards. Another type of lock plate popular between 1300 and 1500 has concave sides and hasp guards. The Felpham chest has a later lid and a repaired front board which prevents identification of the original lock type, but the nine other Sussex chests originally had internal sliding bolt locks, as did six of the Kent chests. A North German chest with a sliding bolt is shown by Stülpnagel (2000, 126–7) but it has no wooden cover. The Climping chest is also unusual in having iron straps on the back and lid, with security chains, which are also found on the 4m 'Long Chest' at Westminster Abbey (1167–99).

In terms of minor metalwork, iron nails or studs covering the wooden pegs of the mortise and tenon joints are found on six or seven other Sussex chests but on none of the Kent chests. The Chichester chest probably had a row of four or six large-headed bolts for retaining the internal wooden bolt cover as on the Kent chests: these differ from the purely decorative iron discs held on with three small nails at Bosham, Horsham and South Bersted. Iron studs and decorative discs are also found on chests in North Germany and Switzerland. The kite-shaped protective plate over the iron rod of the pin hinge at Chichester is common in Sussex and Kent, and the plate covering the end of the rear stile at Climping is also found at Midhurst and Bosham but not in Kent.

DECORATION

In terms of techniques of decoration, chip-carving is the most common form of decoration on Sussex chests and takes the form of roundels of various types (stars, whorls and geometric designs). Relief carving is found on four Sussex chests (arcading on the Buxted and Climping chests, and 'lunette and column' feet on the Chichester and Horsham

chests) whereas one Sussex chest (Rogate) has openwork carved feet of quadrant and column type. Neither of these types of work is found on Kent chests. Grounded arcading is found on the Climping chest, and on the St John's, Canterbury B chest. The Chichester chest has a scratchstock-moulded rectangular frame very similar to those on the St John's, Canterbury A and B chests. The Horsham chest has a very bold scratchstock-moulded frame. The commonest work on Kent chests is incised: double-outlined trefoil gothic arcading, sometimes with crockets, and small or medium roundels (see Fig.13) and three Kent chests have incised frames.

There are also significant differences between the decorative repertoires of the Sussex and Kent chests. The façade decoration of Sussex chests is as follows: whorls (Climping, Felpham, Midhurst, South Bersted, Stedham), hexafoils in hexagons (Climping, Felpham, Stedham, Midhurst), intersecting hexafoils (Stedham), stars (Chichester, Climping), octofoils (Buxted), superimposed triangles with segmentation (Felpham, Midhurst), eight-petal rosettes (Buxted), arcading (Buxted, Climping). The foot decoration is: (openwork) quadrant and column (Rogate); (surface) honeycomb (Climping), lunette with bosses and pilaster (Chichester), gothic arch with bosses, roundel and pilaster (Horsham), gothic arch (Buxted), pilaster (Bosham, Midhurst). See Fig. 14 for the roundel designs on the Midhurst chest.

The façade decoration for the Kent chests is grounded arcading (with incised crockets) (St John's B), incised arcading (Boughton, Graveney, Norton, St John's A, and, with gables, Wormshill), cross-pattées (St John's A, Norton), divisions into eight segments (Boughton), hexafoils (Wormshill), whorls (Wormshill), quadrants (Norton). The roundels are generally much smaller than in Sussex. The foot decoration is surface incised and continues the motifs on the façade: quadrant (St John's A), arch (St John's B), opposed arcs (Norton), whorl and hexafoil (Wormshill).

As well as its greater use of roundels, what is striking about the carving of the Sussex chests is its quality, diversity and elaboration. In contrast, the Kent chests are more simply carved and vary less. Both the Chichester and Climping chests are thus typical of chests in Sussex in having roundels on their façade or feet. However, as pointed out earlier, in terms of the depth of the chest (Chichester) and the lock type and applied grid design (Climping), these chests differ from all the other Sussex chests.

How to make sense of these differences? Roundels go back millennia, but their use in painted images, window tracery and woodwork starts in the thirteenth century. Apart from at

Fig. 13. Wormshill chest, Kent.

Fig. 14. Midhurst chest.

Climping and Buxted, the Sussex chests with carved facades are striking in having roundels as their sole decoration.[10] When picked out in colour these motifs would have stood out strongly. Roundels were also used to fill the gaps in designs with gothic arcading. The chest at Ewerby, Lincs, dendro-dated to *c.* 1350, has a fully-carved façade with intersecting gothic arcading and roundels with geometric designs or rosettes in the interstices (Simpson and Litton 1996). North German chests have similar designs a few decades before this (Roe 1902, 36–47, Stülpnagel, 2000, 148–177, Sherlock 2011, Pickvance 2014). So far there are insufficient dendro dates to plot the development of façade design and its regional variations. The fact that the Climping chest, which combines roundels and gothic arcading, has a later dendro date than the Chichester chest, is in line with the trend towards increasing complexity of façade carving seen on the Kent chests between 1240 and 1340.

Is there an explanation for the popularity of roundels on Sussex pin-hinged clamped chests? The anthropologist Jean Cuisenier (1977, 181–3) argues that roundels arose in many societies independently, reflecting the general availability of the compass, and that they have different meanings in different societies, e.g. in connection with religion, funerals and protection against danger.[11] However, tools are a necessary but not a sufficient condition for the production of roundels. It is possible that there were some specific local reasons for their popularity in Sussex, and it would be premature to exclude some role for diffusion.[12]

Today, the notices on both the Climping and Chichester chests describe them as 'Crusader chests' and this terminology is also in use at Midhurst. This idea probably stems from Johnston who wrote that 'the greater number of these early chests in England, including most of the pin-hinge group, were made specifically for the collection of alms for the Crusades' (1907a, 303). His 1200–1250 dates were probably influenced by the 1166 and 1199 dates of the royal and papal edicts, and ignored the difficulty of matching extant chests with chests referred to in documents.[13] However, the late 13th and early 14th century dendro dates obtained for the Chichester and Climping chests place them well after these edicts and thus challenge the Crusader identification.

CONCLUSION

Since, due to losses, surviving chests may be unrepresentative and the number of dendro-

dated chests is limited, any attempt to go beyond strict description is hazardous. Some tentative conclusions will nevertheless be put forward.

In this article it has been shown that the Chichester and Climping chests differ in important respects and also that they contrast with other Sussex chests. Climping's 'complete' applied grid, its combination of trefoil gothic arcading, large roundels and honeycomb reserves and its three locks with iron straps and chains contrast with Chichester's plain sides, façade with incised frame and medium-sized roundels, spandrels, and sliding bolt lock. Their differences in decoration and lock type could be due to their different dates of construction and different intended purposes but the origin of the 'complete' applied grid remains to be established. Overall, Sussex pin-hinged clamped chests show considerable diversity and this suggests that they were made in different workshops.

It has also been shown that despite the proximity of Sussex and Kent their chests show very distinct styles of carving and construction. It is as though chest makers in each county worked in isolation, with each sticking to their own traditions. Kent chests show much less diversity than Sussex chests. This may suggest different production processes, for example, that they were made in a single workshop.

A possible explanation for this can be built on two arguments. Eames (1977, 238) concludes her study of medieval furniture by stressing the 'freedom of medieval work' and the 'differences of detail, rather than close similarities' and attributes this to the organization of labour 'with small groups of men who were free to produce individual solutions to different problems' and the rarity of management skills which are 'generally evident when centralization occurs'. Her comment applies well to the Sussex chests but poorly to the Kent collection (Pickvance 2018). Mercer (1969, 31 and 39) states that the majority of pre-1300 chests are ecclesiastical in origin and links this to the 'collective wealth' and 'exceptional' situation of the 'monastic and cathedral clergy'. Secondly, it is notable that in both counties the chests are located in the richer parts at the time: east Kent and west Sussex (Gardiner 1999). Although Chichester Cathedral was one of the least wealthy in the *Taxatio* of 1291, it is likely to have supported a workshop capable of advanced types of chest and other woodwork (Davnall et al. 1992). The contrast between the Sussex and Kent chests could be because Canterbury Christchurch, a rich monastic cathedral, had a workshop which dominated production in its region and led to greater homogeneity, whereas a poorer secular cathedral was not dominant and left space for other workshops, perhaps connected with monasteries, resulting in greater diversity. The preference for gothic arcading in Kent may be linked to the role of Canterbury Cathedral in introducing gothic architecture.

Finally, references have been made to parallels between English and Continental clamped chests. Although the late 12th century Long Chest at Westminster Abbey is earlier than surviving clamped chests in France and Germany, the effect of losses means that no certain conclusion can be reached as to whether or not pin-hinged, clamped chests are of English or Continental origin (Miles and Bridge 2008; Pickvance 2018).[14] Other questions also remain about pin-hinged, clamped chests in general (such as their original locations, their uses, their rarity, their cost relative to other types, the adoption and abandonment of sliding bolt locks) and about the Sussex group (their commissioners, the workshops involved, their use of chip-carving and preference for roundels, and their diverse construction.) There is thus scope for future research on this rare group of chests.

APPENDIX: THE CONDITION OF THE TWO CHESTS

Chichester. Cox and Harvey write that 'when drawn in 1903 for this work, this most interesting piece of woodwork, with unique and delicate treatment of the feet, was amongst rubbish in the triforium over the south aisle of the nave.'(1908, 294) Johnston's (1907a, 285) photo shows the chest with the front half of the lid missing and the battens projecting. The lid was subsequently repaired, the right hand stile strengthened and base boards added below the position of the originals. The stain is likely to have been added then to give the lid and façade a uniform colour. The right hand spandrel had '"disappeared" only a little while before this [1903] repair' (Johnston 1907a, 284 fn. 1). The original sliding bolt lock and wooden cover is missing but holes for bolts to fix it can be seen. A later lock plate has been added in the centre. There are slight losses to the feet, especially at the back.

Climping. The 1833 drawing (Fig. 3) shows the right hand foot to be spliced with the loss of part

of the honeycomb. By 1902 both feet with their carved reserves had been removed and replaced by a 'plinth'. The left rear stile is damaged, the bottom rail of the left applied grid is later, all but the top rail of the right hand applied grid are missing, and the base boards are replacements. Later pegs have been added to secure the front to the stiles. Parts of the three iron straps on the back and the attached security chains remain. The iron straps on the lid have gone but stains and nail holes remain. The holes for the corresponding locks on the front have been covered by wooden inserts. The lid shows stains from an old hasp to the left of centre and there is a key hole to the right of centre for a more recent lock. The money slots in the chest lid and till lid are probably later additions. According to a document by the cathedral's restorer, the chest then had a pine batten along the front, which he replaced by the plinth-like 'cradle' in which the chest now sits (Pepperall 2000). He repaired the pin hinges of the lid and made various minor repairs, and also noted that a pale ochre wash had been applied to the front.

Acknowledgements

The author would like to thank Martin Bridge and Dan Miles for conducting the dendrochronological analysis, Sussex Equine Hospital for radiographs, and the Marc Fitch Fund for a Special Project Grant, Michael Moriarty and Chichester Cathedral for access to the two chests and for supplying documents, Matthew Payne for access to the chests at Westminster Abbey, Joan Langhorne for access to the Bosham chest, Nick Humphrey for access to those at the Victoria and Albert Museum, and Luke Barber, Vanessa Blaber, Adrian Boas, Martin Bridge, Peter Draper, Nick Humphrey, John Farrant, Joan Langhorne, Dan Miles, Julian Munby, Alastair Scott-Villiers, Gavin Simpson, David Sherlock, Beryl Taylor and Charles Tracy for their help. All figures except Fig. 3 are from photographs by the author.

Author: Christopher G. Pickvance, School of Social Policy, Sociology and Social Research, University of Kent, Canterbury, Kent CT2 7NF; C.G.Pickvance@kent.ac.uk

REFERENCES

Anon., 1931. Some Sussex examples of English medieval art, *Sussex Notes and Queries* **3**, 106–8.

Binski, P. 2004. *Becket's Crown: art and imagination in Gothic England 1170–1300.* London: Yale UP.

Bridge, M. C. W. and **Miles, D. H.** 2011. A review of the information gained from dendrochronologically dated chests in England, *Regional Furniture* **25**, 25–55.

Bridge, M. C. W. and **Miles, D. H.** 2017. *The dendrochronological dating of the Climping (Clymping) and Chichester chests in Chichester Cathedral, West Sussex*. Mapledurham, Oxon: Oxford Dendrochronological Laboratory. Published in the ADS Supplement to this article.

Charles, C. and **Veuillet, C.** 2012. *Coffres et coffrets du Moyen Age dans les collections du Musée d'histoire du Valais, Sion,* 2 vols. Baden: Hier und Jetzt, and Sion: Musées cantonnaux de Valère.

Chinnery, V. 1979. *Oak Furniture: the British tradition.* Woodbridge: Antique Collectors' Club.

Cox, J. C. and **Harvey, A**. 1908. *English Church Furniture* 2nd ed. London: Methuen.

Cuisenier, J. 1977. *French Folk Art.* Tokyo: Kodansha.

Davnall, S. Denton, J., Griffiths, S., Ross, D. and **Taylor, B.** 1992. The *Taxatio* database, *Bulletin of the John Rylands Library* **74** (3), 89–108.

Draper, P. 2005. Islam and the West: the early use of the pointed arch revisited, *Architectural History* **48**, 1–20.

Draper, P. 2006. *The Formation of English Gothic*. London: Yale UP.

Eames, P. 1977. Furniture in England, France and the Netherlands from the twelfth to the fifteenth century, *Furniture History* **13**, 1–303.

Gardiner, M. 1999. The medieval rural economy and landscape, in K. Leslie and B. Short (eds), *An Historical Atlas of Sussex*. Chichester: Phillimore.

Howard, F. E. and **Crossley, F. H.** 1927. *English Church Woodwork*. 2nd edn. London: Batsford.

Hudson, T. P. (ed.) 1997. *Victoria County History of Sussex* **5** (1)**.** Oxford: Oxford UP.

Johnston, P. M. 1907a. Church chests of the twelfth and thirteenth centuries in England, *Archaeological Journal* **64**, 243–306.

Johnston, P. M. 1907b. Stoke d'Abernon church, *Surrey Archaeological Collections* **20**, 1–90.

Lewer, H. W. and **Wall, J. C.** 1913. *The Church Chests of Essex*. London: Talbot.

Mercer, E. 1969. *Furniture 700–1700.* London: Weidenfeld and Nicholson.

Miles, D. W. H. 2006. Refinements in the interpretation of tree-ring dates for oak building timbers in England and Wales, *Vernacular Architecture* **37,** 84–96.

Miles, D. W. H. and **Bridge, M. C.** 2008. *Westminster Abbey, London: tree-ring dating of the chests and fittings.* Portsmouth: English Heritage.

Munby, J. T. 1985. Thirteenth century carpentry in Chichester, *Archaeological Journal* **142**, 13–17.

Nairn, I. and **Pevsner, N.** 1965. *Sussex*. Buildings of England. Harmondsworth: Penguin.

Pepperall, N. 2000. Chichester Cathedral. Crusader Chest ex St Mary's Clymping Conservation Record. Unpub. document held in Chichester Cathedral.

Pickvance, C. G. 2014. The tracery-carved, clamped, medieval chest at St Mary Magdalen Church, Oxford in comparative North-West European perspective, *Antiquaries Journal* **94***,* 153–71.

Pickvance, C. G. 2017a. The medieval chest at St Mary's church, Horsham: an important unrecorded pin-hinged, clamped chest, *Sussex Archaeological Collections* **155,** 203–7.

Pickvance, C. G. 2017b. 'Kentish Gothic' or imported? Understanding a group of early fifteenth century tracery-

carved medieval chests in Kent and Norfolk, *Archaeologia Cantiana* **138,** 105–128.
Pickvance, C. G. 2018. The Canterbury group of arcaded gothic early medieval chests: a dendrochronological and comparative study, *Antiquaries Journal* **98,** 149–85.
Roe, F. 1902. *Ancient Coffers and Cupboards.* London: Methuen.
Roe, F. 1905. *Old Oak Furniture*. London: Methuen.
Salzman, L. F. (ed.) 1935. *Victoria County History of Sussex* **3**. London: Oxford UP.
Schmitz, H. 1956. *The Encyclopedia of Furniture.* London: Zwemmer.
Shaw, H. 1836. *Specimens of Ancient Furniture drawn from Existing Authorities.* London: William Pickering.
Sherlock, D. 2008. *Suffolk Church Chests.* Ipswich: Suffolk Institute of Archaeology and History.
Sherlock, D. 2011. The Prittlewell chest panels and a group of English church chests decorated with tracery and bestiaries, *Transactions of the Essex Society for Archaeology and History* 4th series, **2**, 173–87.
Simpson, W. G. and **Litton C. D.** 1996. Dendrochronology in cathedrals, in T. Tatton-Brown and J Munby (eds), *The Archaeology of Cathedrals*. Oxford: Oxford University Committee for Archaeology.
Stülpnagel, K. H. von 2000. *Die gotischen Truhen der Lüneberger Heideklöster.* Cloppenburg: Museumsdorf Cloppenburg.
Tracy, C. 1987. 'Chest', in J. Alexander and P. Binski, (eds), *Age of Chivalry*. London: Royal Academy of Arts.
Tyers, C. 2008. Bayesian interpretation of tree-ring dates in practice, *Vernacular Architecture* **39**, 91–106.

NOTES

1 Sherlock 2008, Pickvance 2017a and Alastair Scott-Villiers (pers. comm., 2014). The dimensions of the Horsham chest given by Johnston are those of a plain boarded chest in St Mary's church of 16th-century date, suggesting he may have been confused in his recording.

2 Losses and repairs to the chests are noted in the Appendix.

3 Cox and Harvey 1908, 295, suggest some slots were added later 'as a cheap way of complying with the general orders of the 16th century for the providing of a Poor Man's Box'.

4 Johnston 1907b, 83, points out that one lock overlaps a roundel and suggests that it was fixed on in the church, hinting at poor cooperation between craftsmen. Appendix D in this article is an earlier version of the section on pin-hinged chests in his 1907a article.

5 Pickvance 2017a and 2018. Johnston was aware of sliding bolt locks in Sussex at Bosham and South Bersted but missed those at Buxted, Chichester, Midhurst and Rogate. He wrote that 'From the close correspondence that exists between them in the different chests [in his wide survey], I am convinced that the locks and other ironwork are in nearly every case original' (1907a, 306). Johnston 1907b, 87, noted that Roe was sceptical of this view. In fact Johnston spotted quite a number of exceptions.

6 Johnston 1907a, 286, noted 'plain traces of red ochre colouring' there too.

7 This method relies on the relationship between sapwood and heartwood rings; it is discussed by Miles 2006 and Tyers 2008.

8 It was originally intended to date the timber of the Bosham and Horsham chests but, due to its fast growth, the oak used had too few rings to give reliable results.

9 There are only six site chronologies for Sussex around 1300 whereas those for Hampshire are much more numerous (Martin Bridge, pers. comm., July 2018). This is partly because of the fast growth of oak in Sussex.

10 Examples outside Sussex are at Stoke d'Abernon, Winchester Cathedral, Earl Stonham (Suffolk), Longstanton (Cambs) and Laneham (Notts). The Victoria and Albert Museum has an example from Hampshire (W.30-1926).

11 For example, four of the roundel designs on the Sussex chests—stars, hexafoils, intersecting hexafoils and whorls—can be found on small stone ossuaries from 1st century Jerusalem (https://ferrelljenkins.blog/2017/02/12/ossuaries-in-ancient-jerusalem-and-judea/). I am grateful to Adrian Boas of Haifa University for drawing my attention to this (pers. comm., Nov. 2017).

12 The complexity of tracing the diffusion of designs is shown by Draper's (2005) exploration of the possible Islamic origin of gothic arches. Adrian Boas has pointed out that the cross-pattée design, found on some Kent chests, 'appears in the Crusader period on coins and tokens…but also, in the [Swiss] eighth century Lindau Gospels in the Morgan Library' (pers. comm., June 2016). The complex superimposed triangles design on the Midhurst chest suggest the influence of Islamic architecture. The intersecting hexafoil design can also be found on a 14th century chest from Gotland, Sweden (Stülpnagel 2000, 169–71).

13 In contrast, Roe 1905, 115, only mentions the Crusades connection in his second book where he refers to a (now lost) chest at Heckfield, Hants, as a 'crusader alms-chest' because of its likely age, possession of a money slot and a cross shape on the lock hasps.

14 Julian Munby (1985 and pers. comm., Aug. 2018) has pointed to the use of the French braced crown strut/king post roof design at Chichester Cathedral, the Bishop's Chapel and the Bishop's Kitchen in the late 13th century.

ADS SUPPLEMENT

Concurrently with the publication of this article, the following paper will be deposited with, and will available for download from, ADS, Archaeology Data Service, at https://archaeologydataservice.ac.uk

Bridge, M. C. W. and Miles, D. H. 2017. *The dendrochronological dating of the Climping (Clymping) and Chichester chests in Chichester Cathedral, West Sussex*. Mapledurham, Oxon: Oxford Dendrochronological Laboratory.